As filed with the Securities and Exchange Commission on September 3, 2019

Registration No. 333-233365

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

AMENDMENT NO. 1
TO
FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

IGM Biosciences, Inc.

(Exact name of registrant as specified in its charter)

Delaware	2834	77-0349194
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

325 E. Middlefield Road
Mountain View, CA 94043
(650) 965-7873
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Fred M. Schwarzer
Chief Executive Officer and President
IGM Biosciences, Inc.
325 E. Middlefield Road
Mountain View, CA 94043
(650) 965-7873
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Kenneth A. Clark
Tony Jeffries
Jennifer Knapp
Wilson Sonsini Goodrich & Rosati, P.C.
650 Page Mill Road
Palo Alto, California 94304
(650) 493-9300

Jonie I. Kondracki
Charles S. Kim
David Peinsipp
Will H. Cai
Cooley LLP
101 California Street
San Francisco, California 94111
(415) 693-2000

Approximate date of commencement of proposed sale to the public: As soon as practicable after this registration statement becomes effective.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933 check the following box. ☐

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒	Smaller reporting company	☐
		Emerging growth company	☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. ☐

CALCULATION OF REGISTRATION FEE

TITLE OF EACH CLASS OF SECURITIES TO BE REGISTERED	AMOUNT TO BE REGISTERED (1)	PROPOSED MAXIMUM OFFERING PRICE PER SHARE (2)	PROPOSED MAXIMUM AGGREGATE OFFERING PRICE (2)	AMOUNT OF REGISTRATION FEE (3)
Common Stock, $0.01 par value per share	8,984,375	$17.00	$152,734,375	$18,512

(1) Includes the additional shares that the underwriters have the option to purchase.
(2) Estimated solely for the purpose of calculating the amount of the registration fee in accordance with Rule 457(a) under the Securities Act.
(3) The Registrant previously paid $12,120 in connection with the initial filing of the Registration Statement.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

The information in this preliminary prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell these securities and is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED SEPTEMBER 3, 2019

PRELIMINARY PROSPECTUS

7,812,500 Shares

Common Stock

We are offering 7,812,500 shares of our common stock. This is our initial public offering, and no public market currently exists for our common stock. We expect the initial public offering price to be between $15.00 and $17.00 per share. We have applied to list our common stock on the Nasdaq Global Select Market under the symbol “IGMS”.

We are an “emerging growth company” as defined under the federal securities laws and, as such, we have elected to comply with certain reduced reporting requirements for this prospectus and may elect to do so in future filings.

We have two classes of common stock: the voting common stock offered hereby and non-voting common stock. For a description of the rights of the voting common stock and non-voting common stock, please see “Description of Capital Stock” beginning on page 147 of this prospectus. We are offering voting common stock in this offering, and unless otherwise noted, all references in this prospectus to our “common stock” or “common shares” refers to our voting common stock.

Investing in our common stock involves a high degree of risk. Please read “Risk Factors” beginning on page 11 of this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

	PER SHARE	TOTAL
Initial Public Offering Price	$	$
Underwriting Discounts and Commissions (1)	$	$
Proceeds to IGM Biosciences, Inc. before expenses	$	$

(1) See “Underwriting” beginning on page 159 for additional information regarding underwriter compensation.

Delivery of the shares of common stock is expected to be made on or about , 2019. We have granted the underwriters an option for a period of 30 days to purchase an additional 1,171,875 shares of our common stock. If the underwriters exercise the option in full, the total underwriting discounts and commissions payable by us will be $, and the total proceeds to us, before expenses, will be $.

Jefferies **Piper Jaffray** **Stifel** **Guggenheim Securities**

Prospectus dated , 2019

TABLE OF CONTENTS

Through and including , 2019 (the 25th day after the date of this prospectus), all dealers effecting transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to a dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to an unsold allotment or subscription.

We and the underwriters have not authorized anyone to provide you any information other than that contained in this prospectus or in any free writing prospectus prepared by or on behalf of us or to which we have referred you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We and the underwriters are not making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus is accurate only as of the date of this prospectus unless the information specifically indicates that another date applies, regardless of the time of delivery of this prospectus or of any sale of the shares of common stock offered hereby. Our business, financial condition, results of operations and prospects may have changed since that date.

For investors outside of the United States: we have not, and the underwriters have not, done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than the United States. Persons outside of the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the shares of common stock and the distribution of this prospectus outside of the United States.

PROSPECTUS SUMMARY

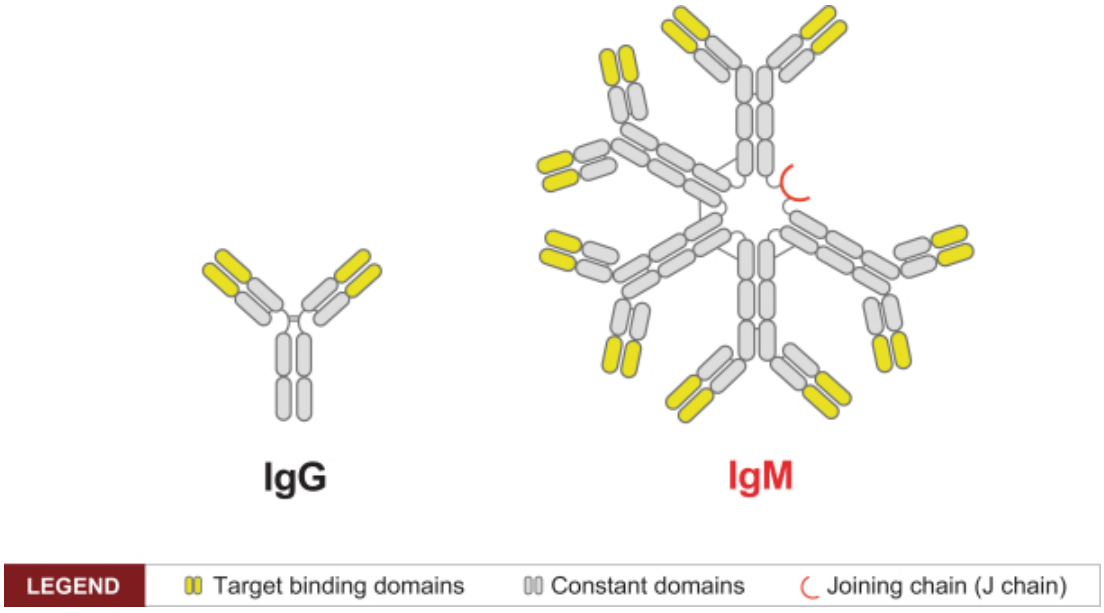
This summary highlights selected information contained elsewhere in this prospectus and is qualified in its entirety by the more detailed information and financial statements included elsewhere in this prospectus. This summary does not contain all of the information you should consider before investing in our common stock. You should carefully read this entire prospectus, including the information under the sections titled "Risk Factors," "Special Note Regarding Forward-Looking Statements" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and related notes included elsewhere in this prospectus, before making an investment decision. Unless the context requires otherwise, references in this prospectus to "IGM Biosciences," "IGM," the "Company," "we," "us" and "our" refer to IGM Biosciences, Inc.

Overview

We are a biotechnology company pioneering the development of engineered IgM antibodies for the treatment of cancer patients. IgM antibodies have inherent properties that we believe may enable them to bind more strongly to cancer cells than comparable IgG antibodies. We have created a proprietary IgM antibody technology platform that we believe is particularly well suited for developing T cell engagers, receptor cross-linking agonists and targeted cytokines. Our lead product candidate, IGM-2323, is a bispecific T cell engaging IgM antibody targeting CD20 and CD3 proteins, and we intend to dose the first patient in a Phase 1 clinical trial for the treatment of relapsed/refractory B cell Non-Hodgkin's lymphoma (NHL) patients in 2019. Our second product candidate will be an IgM antibody targeting Death Receptor 5 (DR5) proteins, and we plan to file an investigational new drug application (IND) for the treatment of patients with solid and hematologic malignancies in 2020. We believe that we have the most advanced research and development program focused on engineered therapeutic IgM antibodies. We have created a portfolio of patents and patent applications, know-how and trade secrets directed to our platform technology, product candidates and manufacturing capabilities, and we retain worldwide commercial rights to all of our product candidates and the intellectual property related thereto.

Immunoglobulin G (IgG) and Immunoglobulin M (IgM) are classes of antibodies that are naturally produced by the human immune system and are distinguishable by their structural properties.

Structural Comparison of IgG and IgM Antibodies



IgM antibodies have 10 binding domains compared to 2 for IgG antibodies. This inherent biological advantage enables:

- Stronger binding to cell surface targets, including those with low expression levels, which may result in better and more complete targeting of cancer cells;
- Stronger binding to difficult targets, such as tumor associated carbohydrates and glycosylated proteins, which has the potential to expand the range of addressable cancer targets;
- Greater ability to cross-link cell surface receptors, which may significantly enhance cellular signaling for killing cancer cells or stimulating T cells, which are a type of white blood cell that are an essential part of the immune system; and
- Substantially greater ability to utilize the complement dependent cytotoxicity (CDC) mechanism of killing targeted cells, which kills cancer cells without requiring the presence of immune cells.

Despite these inherent biological advantages, while IgG antibodies have been broadly developed as therapeutics for cancer, we believe the therapeutic potential of engineered IgM antibodies has remained largely unexplored.

Our Platform

We created our IgM platform to expand upon the inherent properties of IgM antibodies and to allow for the rapid development of engineered therapeutic antibodies. Significantly, our IgM platform allows us to create IgM antibodies with higher affinity and avidity than naturally occurring IgM antibodies. We believe our platform also allows us to utilize the strong and durable binding of IgM antibodies to kill cancer cells with T cells, induce programmed death of cancer cells or deliver immune stimulating cytokines to the region of the bound cell.

The versatility of our IgM platform positions us to evaluate multiple approaches to treat patients with solid and hematologic malignancies. Our ability to develop engineered IgM antibodies against various targets allows for the creation of a broad and differentiated product pipeline. Our initial efforts are focused on three broad applications of IgM antibodies:

- **T cell engagers:** T cell to cancer cell engagement, including CD20 x CD3, CD123 x CD3, CD38 x CD3 and solid tumor target x CD3 programs, which we believe may have the potential to kill cancer cells through T cell directed cellular cytotoxicity (TDCC) and CDC while maintaining a favorable tolerability profile.
- **Receptor cross-linking agonists:** Tumor Necrosis Factor receptor Superfamily (TNFrSF) agonists, including DR5, which induces programmed death of cancer cells, as well as OX40, glucocorticoid-induced TNFr-related protein (GITR) and other TNFrSF members, which we believe may enhance the ability of the immune system to fight cancer.
- **Targeted cytokines:** Targeted cytokine delivery, including interleukin-15 (IL-15), which we believe may be helpful in inducing and maintaining immune responses to cancer.

Our Pipeline

Our lead product candidate, IGM-2323, is a CD20 x CD3 bispecific IgM antibody for the treatment of patients with CD20-positive cancer. CD20 is a protein commonly expressed on the surface of NHL cells and chronic lymphocytic leukemia (CLL) cells, while CD3 is a protein expressed on the surface of T cells. IGM-2323 contains 10 binding domains for CD20 and one binding domain for CD3. In our preclinical studies, IGM-2323 strongly bound to CD20-positive cancer cells and induced potent T cell dependent and complement dependent cancer cell death, including those cells with low levels of CD20. In addition, we observed lower cytokine release with IGM-2323 relative to comparable IgG bispecific T cell engaging antibodies in our preclinical studies, which may result in reduced risk of the serious adverse effects of cytokine release syndrome (CRS). We plan to begin evaluating IGM-2323 in a Phase 1 clinical trial in relapsed/refractory B cell NHL patients, which is B cell NHL that has either not responded to initial treatment or responded to treatment but then returns, in 2019. Treatment with combination chemo-immunotherapy, such as with rituximab-based regimens, or high

dose chemotherapy and bone marrow transplant, is generally effective and may cure approximately 50-70% of patients with aggressive B cell NHL. Indolent B cell NHL, which represents approximately 40% of B cell NHL cases, remains mostly incurable at advanced stages with current therapies.

Our second product candidate will be an IgM antibody targeting DR5 for the treatment of patients with solid and hematologic malignancies. DR5 receptors are expressed on a broad range of solid tumors as well as leukemias and lymphomas, but their intracellular apoptotic signaling requires efficient cross-linking of at least three DR5 receptors. Our DR5 IgM antibodies demonstrated significantly enhanced apoptotic signaling compared to an IgG antibody with the same binding domains, resulting in >1,000 fold increased potency in killing cancer cells from multiple cancer cell types in our studies outside of living organisms (*in vitro*) studies. In our preliminary studies in living organisms (*in vivo*), specifically cynomolgus monkeys, no untoward toxicity was observed with our DR5 IgM antibodies. We expect to file an IND for a DR5 IgM antibody in 2020.

The following table highlights our lead programs:

Mode	Target	Indication	Phase of Development					Worldwide Commercial Rights	Anticipated Milestone
			Discovery	Preclinical	Phase 1	Phase 2	Phase 3		
T cell Engager	IGM-2323 (CD20x CD3)	NHL and CLL						igm	Initial Phase 1 data for r/r B cell NHL: 2020
Receptor Cross-linking Agonist	IgM Antibody (DR5)	Solid and Hematologic Malignancies						igm	IND filing: 2020

The following table highlights discovery programs that we are prioritizing:

Mode	Target	Indication	Worldwide Commercial Rights
T cell Engagers	CD123 x CD3	Acute Myeloid Leukemia	igm
	CD38 x CD3	Multiple Myeloma	
	Multiple Targets x CD3	Multiple Solid Tumors	
Receptor Cross-linking Agonists	OX40	Solid and Hematologic Malignancies	igm
	GITR		
Targeted Cytokines	Multiple Targets x IL-15	Solid and Hematologic Malignancies	igm

We estimate that these discovery programs are at least two years away from clinical studies, assuming they meet our requirements for advancement. We do not anticipate advancing all of these programs into clinical testing, and some of these programs may be supplanted by other IgM discovery programs.

Our Team

Our management team and board of directors have decades of biotechnology experience and perspective in areas such as cancer biology, immunotherapy, immunology, antibody discovery, protein engineering and clinical development. They bring a strong history of leadership, innovation and research and development experience at leading companies, including Roche/Genentech, Amgen, Gilead Sciences, Celgene, Millennium Pharmaceuticals, Shire, Kite Pharma, Bavarian Nordic, Sutro Biopharma and Northern Biologics. Members of our team were involved in the discovery, development or commercialization of multiple therapeutics, including Tecentriq, Yescarta, Zydelig, Avastin, Lucentis, Vectibix, Activase, TNKase and Kogenate. Our team is further supported by a strong group of investors that share our commitment to developing IgM antibodies for the treatment of cancer patients. Since 2010, we have raised approximately $162.0 million through convertible

preferred stock financings. Our key investors include Haldor Topsøe Holding A/S (HTH), a global leader in catalysis and chemical process technology, and leading institutional investors, Baker Brothers, Redmile Group, Janus Henderson Investors and Vivo Capital.

Our Strategy

Our strategy is to sustain and extend our global leadership in the development of engineered IgM antibodies for therapeutic use. We plan to achieve this by utilizing our proprietary IgM technology to develop antibodies with differentiated product profiles and the ability to address difficult to treat patients with cancers and other serious diseases. This strategy encompasses the following key elements:

- Advance IGM-2323 through clinical development in B cell NHL to establish our IgM platform as the leading CD3 T cell engaging technology.
- Progress a DR5 IgM antibody into clinical trials to establish the efficacy of our IgM antibodies in targeting members of the TNFrSF.
- Utilize our proprietary T cell engaging and immune stimulating technologies to expand our pipeline of IgM antibody product candidates.
- Build antibody manufacturing capabilities to support our future clinical trials and provide commercial supply for any approved product candidates.
- Directly commercialize any approved product candidates in key markets alone or with strategic partners.
- Continue to expand our intellectual property portfolio to further protect our IgM platform and our product candidates.

We believe that if we are successful in bringing an IgM antibody to market, particularly one that is more effective and safer than comparable IgG antibodies, we will significantly alter the course of future therapeutic antibody development.

Risks Associated with Our Business

Our business is subject to numerous risks and uncertainties, including those discussed more fully in the section titled “Risk Factors.” These risks include, but are not limited to, the following:

- We are early in our development efforts and all of our product candidates are in preclinical development or early stage clinical development. If we are unable to advance our product candidates through clinical development, obtain regulatory approval and commercialize one or more of our product candidates, our business will be materially adversely affected and we may never generate any product revenue.
- The use of engineered IgM antibodies is a novel and unproven therapeutic approach and our development of IGM-2323, our DR5 IgM antibody and our discovery programs may never lead to a marketable product.
- Clinical trials are expensive, time consuming and difficult to design and implement and may fail to demonstrate adequate safety and efficacy of our product candidates. Furthermore, the results of previous preclinical studies and clinical trials may not be predictive of future results, and the results of our current and planned clinical trials may not satisfy the requirements of the FDA or comparable foreign regulatory authorities or provide the basis for regulatory approval.
- If clinical trials for our product candidates are prolonged, delayed or stopped, we may be unable to seek or obtain regulatory approval and commercialize our product candidates on a timely basis, or at all, which would require us to incur additional costs and delay our receipt of any product revenue.
- If we experience delays or difficulties in the enrollment of patients in clinical trials, including as a result of competition for patients, we will be unable to complete these trials on a timely basis, if at all.
- Our product candidates may have undesirable side effects that may delay or prevent marketing approval or, if approval is received, require them to be taken off the market, require them to include new safety warnings, contraindications or precautions, or otherwise limit their sales. No regulatory

agency has made a determination that any of our product candidates are safe or effective for use by the general public for any indication.

- We face significant competition from entities that have developed or may develop product candidates for the treatment of diseases that we are initially targeting, including companies developing novel treatments and technology platforms. If our competitors develop and market products that are more effective, safer or less expensive than our product candidates, our commercial opportunities will be negatively impacted.
- The manufacturing of our product candidates is complex. We and our third-party manufacturers may encounter difficulties in production. If we encounter any such difficulties, our ability to supply our product candidates for clinical trials or, if approved, for commercial sale, could be delayed or halted entirely.
- We may not be successful in our efforts to use and expand our IgM platform to build a pipeline of product candidates.
- Our future success depends on our ability to retain key executives and to attract, retain and motivate qualified personnel.
- We have incurred significant losses since inception and anticipate that we will continue to incur losses for the foreseeable future. We have no products approved for commercial sale, and to date we have not generated any revenue or profit from product sales. We may never achieve or sustain profitability.
- Even if this offering is successful, we will require substantial additional funding, which may not be available to us on acceptable terms, or at all, and, if not available, may require us to delay, scale back or cease our product development programs or operations.
- Our commercial success depends significantly on our ability to operate without infringing the patents and other proprietary rights of third parties. In addition, if we are unable to obtain, maintain and enforce patent and trade secret protection for our product candidates and related technology, our business could be materially harmed.

Corporate Information

We were incorporated in Delaware in 1993 under the name Palingen, Inc. From 1993 to 2010, we were principally engaged in research related to naturally occurring IgM antibodies. In 2010, we received an initial equity investment from Haldor Topsøe Holding A/S (HTH), our current majority stockholder, changed our name to IGM Biosciences, Inc. and refocused our research and development efforts toward developing our IgM platform and engineering new IgM antibodies. In December 2017, we established a Danish holding company–IGM Biosciences A/S (Holdco); in April 2019, we dissolved Holdco. The capitalization information included in this prospectus is consistently presented as that of IGM Biosciences, Inc., even during the interim period when we had a holding company structure and our investors held their equity interests in Holdco.

Our principal executive offices are located at 325 E. Middlefield Road, Mountain View, California 94043, and our telephone number is (650) 965-7873. Our website address is www.igmbio.com. Information contained on, or that can be accessed through, our website is not incorporated by reference in this prospectus.

IGM Biosciences, the IGM logo and our other registered or common law trademarks, trade names or service marks appearing in this prospectus are owned by us. This prospectus contains references to our trademarks and to trademarks belonging to other entities. Solely for convenience, trademarks and trade names referred to in this prospectus, including logos, artwork and other visual displays, generally appear without the ® or TM symbols, but such references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensor to these trademarks and trade names. We do not intend our use or display of other companies' trade names or trademarks to imply a relationship with, or endorsement or sponsorship of us by, any other companies.

Emerging Growth Company Status

We qualify as an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012 (JOBS Act).

An emerging growth company may take advantage of certain reduced reporting requirements that are otherwise applicable to public companies. These provisions include, but are not limited to:

- being permitted to present only two years of audited financial statements in addition to any required unaudited interim financial statements, with correspondingly reduced disclosure in the section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations”;
- not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, as amended (the Sarbanes-Oxley Act);
- reduced disclosure obligations regarding executive compensation in this prospectus and our periodic reports, proxy statements and registration statements; and
- exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and any golden parachute payments.

We will remain an emerging growth company until the earlier of (i) the last day of our first fiscal year (a) following the fifth anniversary of the completion of this offering, (b) in which we have total annual gross revenues of at least $1.07 billion or (c) in which we are deemed to be a large accelerated filer, which means the market value of our common stock that is held by non-affiliates exceeds $700.0 million under the rules of the U.S. Securities and Exchange Commission and (ii) the date on which we have issued more than $1.0 billion in non-convertible debt securities during the prior three-year period.

We have elected to take advantage of certain of the reduced disclosure obligations in this prospectus and the registration statement of which this prospectus is a part, and we may elect to take advantage of other reduced reporting requirements in future filings. As a result, the information that we provide to our stockholders may be different than, and not comparable to, information presented by other public reporting companies.

In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. We have elected to use this extended transition period for complying with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date that we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, our financial statements may not be comparable to companies that comply with the new or revised accounting standards as of public company effective dates.

The Offering

Common stock offered	7,812,500 shares
Underwriters' option to purchase additional shares of common stock	1,171,875 shares
Total common stock and non-voting common stock to be outstanding immediately after this offering	25,766,945 shares (of which 19,335,740 shares will be common stock) or 26,938,820 shares (of which 20,507,615 shares will be common stock) if the underwriters exercise their option to purchase additional shares in full
Use of proceeds	We estimate that our net proceeds from this offering of common stock will be approximately $112.4 million (or approximately $129.8 million if the underwriters exercise their option to purchase additional shares in full), assuming an initial public offering price of $16.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. We expect to use the net proceeds from this offering, together with our existing cash and cash equivalents, to fund: (i) the clinical development of IGM-2323 for the treatment of relapsed/refractory B cell NHL patients; (ii) IND-enabling studies and the clinical development of our DR5 IgM antibody; (iii) our ongoing efforts to develop additional clinical candidates from our IgM platform; and (iv) the build out and expansion of our manufacturing facilities, as well as for working capital and other general corporate purposes. See the section of this prospectus titled "Use of Proceeds."
Risk factors	See the section of this prospectus titled "Risk Factors" beginning on page 11 and other information included in this prospectus for a discussion of factors you should carefully consider before deciding to invest in shares of our common stock.
Proposed Nasdaq Global Select Market trading symbol	"IGMS"

The number of shares of common stock and non-voting common stock that will be outstanding following this offering is based on 11,523,240 shares of common stock outstanding and 6,431,205 shares of non-voting common stock outstanding as of June 30, 2019 (including convertible preferred stock on an as-converted basis as well as 3,026,449 shares of our Series C convertible preferred stock issued after June 30, 2019 and 116,518 shares of restricted common stock subject to forfeiture), and excludes:

- 595,832 shares of common stock issuable upon the exercise of outstanding stock options granted under our 2010 Stock Plan (2010 Plan) as of June 30, 2019, with a weighted-average exercise price of $0.94 per share;
- 1,333,451 shares of common stock issuable upon the exercise of outstanding stock options granted under our 2018 Omnibus Incentive Plan (2018 Plan) as of June 30, 2019, with a weighted-average exercise price of $1.39 per share;

- 185,063 shares of common stock issuable upon the exercise of outstanding stock options granted under our 2018 Plan after June 30, 2019, with a weighted-average exercise price of $10.24 per share;
- 2,854,293 shares of common stock reserved for future issuance under our 2018 Plan (which does not include an aggregate of 118,361 shares of common stock issuable upon the exercise of stock options that have been approved to be granted, as of the effective date of the registration statement of which this prospectus forms a part at an exercise price equal to the initial public offering price of our common stock), including the amendment thereto that will become effective in connection with this offering, and any additional shares that become available under our 2018 Plan pursuant to provisions thereof that automatically increase the share reserve under the plan each year; and
- 280,000 shares of common stock reserved for future issuance under our 2019 Employee Stock Purchase Plan (ESPP), which will become effective in connection with this offering, and any additional shares that become available under our ESPP pursuant to provisions thereof that automatically increase the share reserve under the plan each year.

In addition, unless we specifically state otherwise, all information in this prospectus assumes:

- the automatic conversion of all outstanding shares of our convertible preferred stock (including 3,026,449 shares of our Series C convertible preferred stock issued after June 30, 2019) into an aggregate of 10,787,861 shares of common stock and 6,431,205 shares of non-voting common stock, which will occur immediately prior to the completion of this offering pursuant to the terms of our amended and restated certificate of incorporation;
- no exercise of outstanding stock options;
- no exercise by the underwriters of their option to purchase additional shares of common stock; and
- the filing and effectiveness of our amended and restated certificate of incorporation and the adoption of our amended and restated bylaws, each of which will occur immediately prior to the completion of this offering.

On August 30, 2019, we effected a 6.6084-for-1 reverse stock split of our common stock, non-voting common stock and convertible preferred stock. This prospectus gives retroactive effect to the split for all periods presented.

Certain of our directors and existing stockholders, including certain stockholders affiliated with our directors and that beneficially own more than 5% of our outstanding capital stock, have indicated an interest in purchasing an aggregate of $50.0 million or more in shares of our common stock in this offering at the initial public offering price. However, because indications of interest are not binding agreements or commitments to purchase, the underwriters may determine to sell more, fewer or no shares in this offering to any of these directors or stockholders, or any of these directors or stockholders may determine to purchase more, fewer or no shares in this offering. The underwriters will receive the same underwriting discounts and commissions on any shares purchased by these directors and stockholders as they will on any other shares sold to the public in this offering.

Summary Financial Data

The following tables set forth a summary of our financial data as of and for the periods ended on the dates indicated. We have derived the summary statements of operations data for the years ended December 31, 2017 and 2018 from our audited financial statements included elsewhere in this prospectus. The summary statements of operations data for the six months ended June 30, 2018 and 2019, and the summary balance sheet data as of June 30, 2019, have been derived from our unaudited interim condensed financial statements included elsewhere in this prospectus. The unaudited interim condensed financial statements were prepared on the same basis as our audited financial statements and reflect, in the opinion of management, all adjustments, which include only normal, recurring adjustments that are necessary to present fairly the results for the interim periods presented. Our historical results are not necessarily indicative of the results that may be expected in any future period. You should read this data together with the information in the sections titled "Selected Financial Data" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and related notes included elsewhere in this prospectus.

	YEAR ENDED DECEMBER 31,		SIX MONTHS ENDED JUNE 30,	
	2017	2018	2018	2019
	(in thousands, except share and per share amounts)		(Unaudited)	
Statements of Operations Data:				
Operating expenses:				
Research and development	$ 8,639	$ 18,962	$ 5,976	$ 14,215
General and administrative	2,508	3,829	1,224	3,673
Total operating expenses	11,147	22,791	7,200	17,888
Loss from operations	(11,147)	(22,791)	(7,200)	(17,888)
Other income (expense), net	93	80	59	(258)
Net loss	$ (11,054)	$ (22,711)	$ (7,141)	$ (18,146)
Net loss per share, basic and diluted (1)	$ (25.24)	$ (51.84)	$ (16.30)	$ (36.17)
Weighted-average common shares outstanding, basic and diluted (1)	437,942	438,074	438,074	501,716
Pro forma net loss per share, basic and diluted (unaudited) (1)		$ (3.07)		$ (1.80)
Pro forma weighted-average common and non-voting common shares outstanding, basic and diluted (unaudited) (1)		7,395,000		10,081,088

(1) See Note 10 to our financial statements and Note 9 to our unaudited condensed financial statements included elsewhere in this prospectus for an explanation of the method used to calculate historical and pro forma net loss per share, basic and diluted, and the weighted-average number of shares used in the computation of the per share amounts.

	AS OF JUNE 30, 2019		
	ACTUAL	PRO FORMA (1)	PRO FORMA AS ADJUSTED (2)(3)
		(unaudited) (in thousands)	
Balance Sheet Data:			
Cash and cash equivalents	$ 42,672	$ 82,672	$ 195,144
Total assets	48,517	88,431	198,903
Accrued liabilities	4,048	4,048	2,170
Total liabilities	6,701	6,701	4,823
Convertible preferred stock	122,785	—	—
Accumulated deficit	(82,218)	(82,218)	(82,218)
Total stockholders' (deficit) equity	(80,969)	81,730	194,080

(1) The pro forma balance sheet data above reflects (i) the issuance of 3,026,449 shares of our Series C convertible preferred stock and related gross proceeds of $40.0 million subsequent to June 30, 2019 and (ii) the automatic conversion of all outstanding shares of our convertible preferred stock (including the shares referenced in (i)) into an aggregate of 10,787,861 shares of common stock and 6,431,205 shares of non-voting common stock as if such conversion had occurred on June 30, 2019.

(2) The pro forma as adjusted balance sheet data gives effect to (i) the pro forma adjustments set forth in footnote (1) above and (ii) the issuance and sale of 7,812,500 shares of common stock in this offering at an assumed initial public offering price of $16.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

(3) The pro forma as adjusted information above is illustrative only and may change based on the actual initial public offering price and other terms of this offering. Each $1.00 increase (decrease) in the assumed initial public offering price of $16.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) each of cash and cash equivalents, total assets and total stockholders' (deficit) equity by $7.3 million, assuming that the number of shares of common stock offered by us, as set forth on the cover page of this prospectus, remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, each increase (decrease) of 1,000,000 shares in the number of shares of common stock offered by us would increase (decrease) each of cash and cash equivalents, total assets and total stockholders' (deficit) equity by $14.9 million, assuming the assumed initial public offering price remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the following risks and uncertainties, together with all of the other information contained in this prospectus, including our financial statements and related notes included elsewhere in this prospectus, before making an investment decision. The risks described below are not the only ones facing us. The occurrence of any of the following risks, or of additional risks and uncertainties not presently known to us or that we currently believe to be immaterial, could materially and adversely affect our business, financial condition or results of operations. In such case, the trading price of our common stock could decline, and you may lose all or part of your investment.

Risks Related to Our Business and the Development and Commercialization of Our Product Candidates

We are early in our development efforts and all of our product candidates are in preclinical development or early stage clinical development. If we are unable to advance our product candidates through clinical development, obtain regulatory approval and commercialize one or more of our product candidates, our business will be materially adversely affected and we may never generate any product revenue.

We are early in our development efforts and have not yet completed the development of any of our product candidates. As a result, we are not currently permitted to market or sell any of our product candidates in any country, and we may never be able to do so in the future. We have a limited number of product candidates and discovery programs, all of which are in preclinical development or early stage clinical development. We have not commenced or completed any clinical trials, and we have not received marketing approval, for any of our product candidates. Our product candidates will require clinical development, evaluation of preclinical, clinical and manufacturing activities, marketing approval from government regulators, substantial investment and significant marketing efforts before we generate any revenues from product sales, if ever. We have limited experience in conducting and managing the clinical trials necessary to obtain regulatory approvals. Our ability to generate product revenue and achieve and sustain profitability depends on, among other things, obtaining regulatory approvals for our product candidates. Obtaining regulatory approval of our product candidates will depend on many factors, including, but not limited to, the following:

- completing process development, manufacturing and formulation activities;
- initiating, enrolling patients in and completing clinical trials of product candidates on a timely basis;
- developing and maintaining adequate manufacturing capabilities either by ourselves or in connection with third-party manufacturers; and
- demonstrating with substantial evidence the efficacy, safety and tolerability of product candidates to the satisfaction of the FDA or any comparable foreign regulatory authority for marketing approval.

Many of these factors are wholly or partially beyond our control, including clinical advancement, the regulatory submission process and changes in the competitive landscape. If we do not achieve one or more of these factors in a timely manner, we could experience significant delays or an inability to develop product candidates at all, and our business will be materially adversely affected.

The use of engineered IgM antibodies is a novel and unproven therapeutic approach and our development of IGM-2323, our DR5 IgM antibody and our discovery programs may never lead to a marketable product.

Our product candidates are based on engineered IgM antibody approaches that differ from current antibody therapies and are unproven. Our IgM antibodies ultimately may not be as safe or effective as IgG antibodies that have been approved or may in the future be approved by the FDA. Further, we are not aware of any therapeutic IgM antibodies that have been approved by the FDA. The scientific evidence to support the feasibility of developing our product candidates and discovery programs is both preliminary and limited. We may ultimately discover that our product candidates and discovery programs do not possess some of the properties that are necessary for therapeutic efficacy, and we may also discover that they do not possess those characteristics that we believe may be helpful for therapeutic effectiveness, including stronger binding that increases efficacy. Our IgM antibodies may also have significant undesirable characteristics, such as immunogenicity, which would limit their ability to be developed as effective and safe therapeutics. In addition, we may discover that our IgM antibodies are not as safe as IgG antibodies.

We may not succeed in demonstrating safety and efficacy of these product candidates or discovery programs in clinical trials, notwithstanding results in preclinical studies. As a result, we may never succeed in developing a marketable product. We may discover that the half-life, tissue distribution or other pharmacodynamic or pharmacokinetic characteristics of our IgM antibodies render them unsuitable for the therapeutic applications we have chosen or are not competitive with IgG antibodies. We may also experience manufacturing, formulation or stability problems with one or more of our IgM antibodies which may render them unsuitable for use as therapeutic drug products.

The FDA has limited experience with IgM antibody-based therapeutics, which may increase the complexity, uncertainty and length of the regulatory approval process for our product candidates. For example, the FDA may require us to provide additional data to support our regulatory applications. We may never receive approval to market and commercialize any product candidate. Even if we obtain regulatory approval, the approval may be for targets, disease indications or patient populations that are not as broad as we intended or desired or may require labeling that includes significant use or distribution restrictions or safety warnings. We may be subject to post-marketing testing requirements to maintain regulatory approval. In addition, upon obtaining any marketing approvals, we may have difficulty in establishing the necessary sales and marketing capabilities to gain market acceptance.

Moreover, advancing IGM-2323, our DR5 IgM antibody and our discovery programs as novel products creates other significant challenges for us, including educating medical personnel regarding a novel class of engineered antibody therapeutics and their potential efficacy and safety benefits, as well as the challenges of incorporating our product candidates, if approved, into treatment regimens.

If any of our product candidates prove to be ineffective, unsafe or commercially unviable, our entire pipeline could have little, if any, value, and it may prove to be difficult or impossible to finance the further development of our pipeline. Any of these events would have a material and adverse effect on our business, financial condition, results of operations and prospects.

Clinical trials are expensive, time consuming and difficult to design and implement and may fail to demonstrate adequate safety and efficacy of our product candidates. Furthermore, the results of previous preclinical studies and clinical trials may not be predictive of future results, and the results of our current and planned clinical trials may not satisfy the requirements of the FDA or comparable foreign regulatory authorities or provide the basis for regulatory approval.

Before obtaining marketing approval from regulatory authorities for the sale of our product candidates, we must conduct preclinical development and then extensive clinical trials to demonstrate their safety and efficacy. Clinical testing is expensive and difficult to design and implement. Clinical testing can take many years to complete, and its ultimate outcome is uncertain.

A failure of one or more clinical trials can occur at any stage of the process. We will be required to demonstrate with substantial evidence through well-controlled clinical trials that our product candidates are safe and effective for use in a diverse patient population before we can seek regulatory approvals for their commercial sale. Our clinical trials may produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional and expansive preclinical or clinical testing.

Positive or timely results from preclinical or early-stage trials do not ensure positive or timely results in future clinical trials or registrational clinical trials because product candidates in later-stage clinical trials may fail to demonstrate sufficient safety and efficacy to the satisfaction of the FDA and comparable foreign regulatory authorities, despite having progressed through preclinical studies or initial clinical trials. Product candidates that have shown promising results in early clinical trials may still suffer significant setbacks in subsequent clinical trials or registration clinical trials. For example, a number of companies in the pharmaceutical industry, including those with greater resources and experience than us, have suffered significant setbacks in advanced clinical trials, even after obtaining promising results in earlier clinical trials.

Interim or preliminary data from clinical trials that we may conduct may not be indicative of the final results of the trial and are subject to the risk that one or more of the clinical outcomes may materially change as patient enrollment continues and more patient data becomes available. Interim or preliminary data also remains subject to

audit and verification procedures that may result in the final data being materially different from the interim or preliminary data. As a result, interim or preliminary data should be viewed with caution until the final data are available.

We do not know whether any clinical trials we may conduct will demonstrate consistent or adequate efficacy and safety sufficient to obtain marketing approval to market our product candidates.

If clinical trials for our product candidates are prolonged, delayed or stopped, we may be unable to seek or obtain regulatory approval and commercialize our product candidates on a timely basis, or at all, which would require us to incur additional costs and delay our receipt of any product revenue.

We intend to dose the first patient in a Phase 1 clinical trial of IGM-2323, our lead product candidate, for the treatment of relapsed/refractory B cell NHL patients in 2019, and we expect to file an IND for our second product candidate, an IgM antibody targeting DR5, for the treatment of patients with solid and hematological malignancies in 2020. We may experience delays in our ongoing or future preclinical studies or clinical trials, and we do not know whether future preclinical studies or clinical trials will begin on time, need to be redesigned, enroll an adequate number of patients on time or be completed on schedule, if at all. The commencement or completion of these clinical trials could be substantially delayed or prevented by many factors, including:

- further discussions with the FDA or comparable foreign regulatory authorities regarding the scope or design of our clinical trials;
- the limited number of, and competition for, suitable study sites and investigators to conduct our clinical trials, many of which may already be engaged in other clinical trial programs with similar patients, including some that may be for the same indication as our product candidates;
- any delay or failure to obtain timely approval or agreement to commence a clinical trial in any of the countries where enrollment is planned;
- inability to obtain sufficient funds required for a clinical trial;
- clinical holds on, or other regulatory objections to, a new or ongoing clinical trial;
- delay or failure to manufacture sufficient supplies of the product candidate for our clinical trials;
- delay or failure to reach agreement on acceptable clinical trial agreement terms or clinical trial protocols with prospective sites or clinical research organizations (CROs), the terms of which can be subject to extensive negotiation and may vary significantly among different sites or CROs;
- delay or failure to obtain institutional review board (IRB) approval to conduct a clinical trial at a prospective site;
- the FDA or other comparable foreign regulatory authorities may require us to submit additional data or impose other requirements before permitting us to initiate a clinical trial;
- slower than expected rates of patient recruitment and enrollment;
- failure of patients to complete the clinical trial;
- the inability to enroll a sufficient number of patients in studies to ensure adequate statistical power to detect statistically significant treatment effects;
- unforeseen safety issues, including severe or unexpected drug-related adverse effects experienced by patients, including possible deaths;
- lack of efficacy during clinical trials;
- termination of our clinical trials by one or more clinical trial sites;
- inability or unwillingness of patients or clinical investigators to follow our clinical trial protocols;
- inability to monitor patients adequately during or after treatment by us or our CROs;
- our CROs or clinical study sites failing to comply with regulatory requirements or meet their contractual obligations to us in a timely manner, or at all, deviating from the protocol or dropping out of a study;
- the inability to produce or obtain sufficient quantities of a product candidate to complete clinical trials;
- inability to address any noncompliance with regulatory requirements or safety concerns that arise during the course of a clinical trial;
- the need to suspend, repeat or terminate clinical trials as a result of non-compliance with regulatory requirements, inconclusive or negative results or unforeseen complications in testing; and

- the suspension or termination of our clinical trials upon a breach or pursuant to the terms of any agreement with, or for any other reason by, any future strategic partners that have responsibility for the clinical development of any of our product candidates.

Changes in regulatory requirements, policies and guidelines may also occur and we may need to significantly modify our clinical development plans to reflect these changes with appropriate regulatory authorities. These changes may require us to renegotiate terms with CROs or resubmit clinical trial protocols to IRBs for re-examination, which may impact the costs, timing or successful completion of a clinical trial. Our clinical trials may be suspended or terminated at any time by us, the FDA, other regulatory authorities, the IRB overseeing the clinical trial at issue, any of our clinical trial sites with respect to that site, or us.

Any failure or significant delay in commencing or completing clinical trials for our product candidates, any failure to obtain positive results from clinical trials, any safety concerns related to our product candidates, or any requirement to conduct additional clinical trials or other testing of our product candidates beyond those that we currently contemplate would adversely affect our ability to obtain regulatory approval and our commercial prospects and ability to generate product revenue will be diminished.

If we experience delays or difficulties in the enrollment of patients in clinical trials, including as a result of competition for patients, we will be unable to complete these trials on a timely basis, if at all.

We may not be able to initiate or continue clinical trials for our product candidates if we are unable to identify and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA or comparable foreign regulatory authorities. Patient enrollment, a significant factor in the timing of clinical trials, is affected by many factors including the size and nature of the patient population, the severity of the disease under investigation, the proximity of subjects to clinical sites, continued enrollment of prospective patients by clinical trial sites, efforts to facilitate timely enrollment, the eligibility criteria for the trial, the design of the clinical trial, patient referral practices of physicians, ability to obtain and maintain patient consents, ability to monitor patients adequately during and after treatment, risk that enrolled subjects will drop out before completion and clinicians' and patients' perceptions as to the potential advantages and disadvantages of the drug being studied in relation to other available therapies, including any new drugs that may be approved for the indications we are investigating.

In addition, our competitors, some of whom have significantly greater resources than we do, are conducting clinical trials for the same indications and seek to enroll patients in their studies that may otherwise be eligible for our clinical studies or trials, which could lead to slow recruitment and delays in our clinical programs. Further, since the number of qualified clinical investigators is limited, we expect to conduct some of our clinical trials at the same clinical trial sites that some of our competitors use, which could further reduce the number of patients who are available for our clinical trials in these sites. Moreover, because our product candidates represent a departure from existing cancer treatments, potential patients and their doctors may be inclined to use conventional therapies, such as chemotherapy, IgG antibody therapy or CAR-T treatment, rather than enroll patients in our clinical trials.

Our inability to enroll a sufficient number of patients for our clinical trials would result in significant delays or may require us to abandon one or more clinical trials altogether. If we are unable to enroll a sufficient number of patients that will complete clinical testing, we will be unable to seek or gain marketing approval for such product candidates and our business will be harmed. Even if we are able to enroll a sufficient number of patients in our clinical studies or trials, delays in patient enrollment may result in increased costs or may affect the timing or outcome of the planned clinical trials, which could prevent completion of these trials and adversely affect our ability to advance the development of our product candidates.

Our product candidates may have undesirable side effects that may delay or prevent marketing approval or, if approval is received, require them to be taken off the market, require them to include new safety warnings, contraindications or precautions, or otherwise limit their sales. No regulatory agency has made a determination that any of our product candidates are safe or effective for use by the general public for any indication.

All of our product candidates and discovery programs are in preclinical development or early stage clinical development, and not all adverse effects of drugs can be predicted or anticipated. Unforeseen side effects from our product candidates could arise at any time during clinical development or, if approved by regulatory authorities, after the approved product has been marketed. We intend to dose the first patient in a Phase 1 clinical trial for our lead

product candidate, IGM-2323 in 2019, and we do not yet have any safety data in humans. Our DR5 IgM antibody and our discovery programs are still in preclinical development and have not been tested on humans at all.

In our preclinical studies, we may observe undesirable characteristics of our product candidates. This may prevent us from advancing them into clinical trials, delay these trials or limit the extent of these trials. For example, we have observed some indications of toxicity at high doses in our *in vitro* studies in human hepatocytes and *in vivo* non-human primate studies for our DR5 IgM antibody. The dose levels where this *in vitro* toxicity was observed are significantly higher than the maximum dose levels we anticipate using in our clinical trials. Nonetheless, toxicity observations in clinical testing, if they occur, may limit our ability to develop a DR5 antibody or may constitute a dose limiting toxicity.

The results of future clinical trials may also show that IGM-2323, our DR5 IgM antibody and/or our discovery programs may cause undesirable or unacceptable side effects, which could interrupt, delay or halt clinical trials, and result in delay of, or failure to obtain, marketing approval from the FDA or comparable foreign regulatory authorities, or result in marketing approval from the FDA or comparable foreign regulatory authorities with restrictive label warnings or for limited patient populations, or result in potential product liability claims. No regulatory agency has made any determination that any of our product candidates or discovery programs is safe or effective for use by the general public for any indication.

Even if any of our product candidates receive marketing approval, if we or others later identify undesirable or unacceptable side effects caused by such products:

- regulatory authorities may require us to take our approved product off the market;
- regulatory authorities may require the addition of labeling statements, specific warnings, contraindication, precaution or field alerts to physicians and pharmacies;
- we may be required to change the way the product is administered, limit the patient population who can use the product or conduct additional clinical trials;
- we may be subject to limitations on how we may promote the product;
- sales of the product may decrease significantly;
- we may be subject to litigation or product liability claims; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the affected product or could substantially increase commercialization costs and expenses, which in turn could delay or prevent us from generating revenue from the sale of any future products.

We face significant competition from entities that have developed or may develop product candidates for the treatment of diseases that we are initially targeting, including companies developing novel treatments and technology platforms. If our competitors develop and market products that are more effective, safer or less expensive than our product candidates, our commercial opportunities will be negatively impacted.

The development and commercialization of drugs and therapeutic biologics is highly competitive and subject to rapid and significant technological change. We are currently developing biotherapeutics that will compete with other drugs and therapies that currently exist or are being developed in the segments of the pharmaceutical, biotechnology and other related markets that develop immuno-oncology treatments. Product candidates we may develop in the future are also likely to face competition from other drugs and therapies, some of which we may not currently be aware. We have competitors both in the United States and internationally, including major multinational pharmaceutical companies, established biotechnology companies, specialty pharmaceutical companies, universities, academic institutions, government agencies and other public and private research organizations that conduct research, seek patent protection and establish collaborative arrangements for the research, development, manufacturing and commercialization of cancer immunotherapies. Many of our competitors have significantly greater financial, manufacturing, marketing, drug development, technical and human resources and commercial expertise than we do. Large pharmaceutical companies, in particular, have extensive experience in clinical testing, obtaining regulatory approvals, recruiting patients and in manufacturing pharmaceutical products. These companies also have significantly greater research and marketing capabilities than we do and may also have products that have been

approved or are in late stages of development and collaborative arrangements in our target markets with leading companies and research institutions. Established pharmaceutical companies may also invest heavily to accelerate discovery and development of novel compounds or to in-license novel compounds that could make our product candidates obsolete. As a result of all of these factors, our competitors may succeed in obtaining patent protection or FDA or other regulatory approval or discovering, developing and commercializing products in our field before we do.

There are a large number of companies developing or marketing treatments for cancer, including most major pharmaceutical and biotechnology companies, as well as many smaller biotechnology companies. These treatments consist both of small molecule drug products, as well as biologics that work by using antibody therapeutic platforms to address specific cancer targets. In addition, many companies, including large pharmaceutical and biotechnology companies such as AbbVie, Amgen, AstraZeneca/MedImmune, Bristol-Myers Squibb, Merck, Novartis, Pfizer and Roche/Genentech, are also developing immuno-oncology treatments for cancer.

We face significant competition from pharmaceutical and biotechnology companies that target specific tumor-associated antigens using immune cells or other cytotoxic modalities. These generally include immune cell redirecting therapeutics (*e.g.*, T cell engagers), adoptive cellular therapies (*e.g.*, CAR-T), antibody drug conjugates, targeted radiopharmaceuticals, targeted immunotoxin and targeted cancer vaccines.

With respect to our lead product candidate, IGM-2323, we are aware of other companies with competing clinical stage therapeutics that target CD20 that include, but are not limited to, Roche/Genentech, Regeneron, Xencor and Genmab.

With respect to our second product candidate, our DR5 IgM antibody, we are aware of other companies with competing clinical stage therapeutics that target DR5 that include, but are not limited to, AbbVie, InhibRx, Genmab and Boehringer Ingelheim.

Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer or less severe effects, are more convenient or are less expensive than the products that we may develop. Our competitors also may obtain FDA or foreign regulatory approval for their products more rapidly than we may obtain approval for our product candidates, which could result in our competitors establishing a strong market position before we are able to enter the market.

Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and enrolling subjects for our clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs. In addition, the biotechnology industry is characterized by rapid technological change. If we fail to stay at the forefront of technological change, we may be unable to compete effectively. Technological advances or products developed by our competitors may render our technologies or product candidates obsolete, less competitive or not economical.

The manufacturing of our product candidates is complex. We and our third-party manufacturers may encounter difficulties in production. If we encounter any such difficulties, our ability to supply our product candidates for clinical trials or, if approved, for commercial sale, could be delayed or halted entirely.

We have spent significant resources to date on developing our current manufacturing processes and know-how to produce sufficient yields and optimize functionality in conjunction with our contract manufacturer. We plan to construct our own manufacturing facility to produce our product candidates in sufficient quantities to conduct clinical trials and ultimately commercial supply for any approved products. To do so, we will need to scale our manufacturing operations, as we do not currently have the infrastructure or capability internally to manufacture sufficient yields needed to advance our product candidates and discovery programs in preclinical studies and clinical trials. Accordingly, we will be required to make significant investments to expand our manufacturing facilities in the future, and our efforts to scale our internal manufacturing capabilities may not succeed.

Also, historically IgM antibodies have been particularly difficult to manufacture and CMOs have limited experience in the manufacturing of IgM antibodies. The process of manufacturing our product candidates is extremely susceptible to product loss due to contamination, equipment failure or improper installation or operation of equipment, vendor or operator error, contamination and inconsistency in yields, variability in product characteristics and difficulties in scaling the production process. On at least one occasion in the past, our contract manufacturer has failed to

successfully complete a scheduled manufacturing run of our IgM antibodies as a result of their manufacturing process errors. Even minor deviations from normal manufacturing processes could result in reduced production yields, product defects and other supply disruptions. If microbial, viral or other contaminations are discovered in our product candidates or in the manufacturing facilities in which our product candidates are made, such manufacturing facilities may need to be closed for an extended period of time to investigate and remedy the contamination.

All of our engineered antibodies are manufactured by culturing cells from a master cell bank. We have one master cell bank for each antibody manufactured in accordance with current good manufacturing practices (cGMPs) and multiple working cell banks. It is possible that we could lose multiple cell banks and have our manufacturing severely impacted by the need to replace the cell banks, and we may fail to have adequate backup should any particular cell bank be lost in a catastrophic event. Any adverse developments affecting manufacturing operations for our product candidates, if any are approved, may result in shipment delays, inventory shortages, lot failures, product withdrawals or recalls, or other interruptions in the supply of our products. We may also have to take inventory write-offs and incur other charges and expenses for products that fail to meet specifications, undertake costly remediation efforts or seek more costly manufacturing alternatives. Furthermore, it is too early to estimate our cost of goods sold. The actual cost to manufacture our product candidates could be greater than we expect because we are early in our development efforts and the use of engineered IgM antibodies is a novel therapeutic approach. Failure to develop our own manufacturing capacity may hamper our ability to further process improvement, maintain quality control, limit our reliance on contract manufacturers and protect our trade secrets and other intellectual property.

We may not be successful in our efforts to use and expand our IgM platform to build a pipeline of product candidates.

A key element of our strategy is to leverage our IgM platform to expand our pipeline of antibody product candidates. Although our research and development efforts to date have resulted in a pipeline of product candidates directed at various cancers, we may not be able to develop product candidates that are safe and effective. In addition, although we expect that our IgM platform will allow us to develop a steady stream of product candidates, we may not prove to be successful at doing so. Even if we are successful in continuing to build our pipeline, the potential product candidates that we identify may not be suitable for clinical development, including as a result of being shown to have harmful side effects or other characteristics that indicate that they are unlikely to be products that will receive marketing approval or achieve market acceptance. If we do not successfully develop and begin to commercialize product candidates, we will not be able to generate any product revenue, which would adversely affect business.

We may expend our limited resources to pursue product candidates or indications that do not yield a successful product and fail to capitalize on product candidates or indications that may be more profitable or for which there is a greater likelihood of success.

Due to the significant resources required for the development of our programs, we must focus our programs on specific product candidates and indications and decide which product candidates to pursue and advance and the amount of resources to allocate to each. Our decisions concerning the allocation of research, development, collaboration, management and financial resources toward particular product candidates or indications may not lead to the development of any viable commercial product and may divert resources away from better opportunities. Similarly, our potential decisions to delay, terminate or collaborate with third parties in respect of certain programs may subsequently also cause us to miss valuable opportunities. If we make incorrect determinations regarding the viability or market potential of any of our programs or product candidates or misread trends in the oncology or biotechnology industry, our business, financial condition and results of operations could be materially adversely affected. As a result, we may fail to capitalize on viable commercial products or profitable market opportunities, be required to forego or delay pursuit of opportunities with other product candidates or other indications that may later prove to have greater commercial potential than those we choose to pursue, or relinquish valuable rights to such product candidates through collaboration, licensing or other royalty arrangements in cases in which it would have been advantageous for us to invest additional resources to retain sole development and commercialization rights.

Our future success depends on our ability to retain key executives and to attract, retain and motivate qualified personnel.

We are highly dependent on the business, research and development and clinical expertise of Mr. Fred Schwarzer, our Chief Executive Officer, Dr. Bruce Keyt, our Chief Scientific Officer, Dr. Daniel Chen, our Chief Medical Officer, and Mr. Misbah Tahir, our Chief Financial Officer, as well as other members of our senior management, scientific

and clinical team. Although we have entered into employment agreements with our executive officers, each of them may terminate their employment with us at any time. The loss of the services of our executive officers or other key employees could impede the achievement of our research, development and commercialization objectives and seriously harm our ability to successfully implement our business strategy.

To succeed, we must recruit, retain, manage and motivate qualified clinical, scientific, manufacturing, and sales and marketing personnel, and we face significant competition for experienced personnel. In addition, we will need to expand and effectively manage our managerial, operational, financial, development and other resources in order to successfully pursue our research, development and commercialization efforts for our existing and future product candidates. Furthermore, replacing executive officers and key employees may be difficult and may take an extended period of time because of the limited talent pool in our industry due to the breadth of skills and experience required to successfully develop, gain regulatory approval of and commercialize products. Intense competition for attracting key skill-sets may limit our ability to retain and motivate these key personnel on acceptable terms.

Many of the other biotechnology companies that we compete against for qualified personnel have greater financial and other resources, different risk profiles and a longer history in the industry than we do. They also may provide more diverse opportunities and better prospects for career advancement. Some of these characteristics may be more appealing to high-quality candidates than what we have to offer. We also experience competition for the hiring of scientific and clinical personnel from universities and research institutions. In addition to competition for personnel, the San Francisco Bay Area in particular is characterized by a high cost of living. We could in the future have difficulty attracting experienced personnel to our company and may be required to expend significant financial resources in our employee recruitment and retention efforts.

In addition, we rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating our research and development and commercialization strategy. Our consultants and advisors may be employed by employers other than us and may have commitments under consulting or advisory contracts with other entities that may limit their availability. If we are unable to continue to attract and retain high quality personnel, our ability to pursue our growth strategy will be limited.

Changes in methods of product candidate manufacturing or formulation may result in the need to perform new clinical trials, which would require additional costs and cause delay.

As product candidates are developed through preclinical to late-stage clinical trials towards approval and commercialization, it is common that various aspects of the development program, such as manufacturing methods and formulation, are altered along the way in an effort to optimize yield and manufacturing batch size, minimize costs and achieve consistent quality and results. Such changes carry the risk that they will not achieve these intended objectives. Any of these changes could cause our product candidates to perform differently and affect the results of planned clinical trials or other future clinical trials conducted with the altered materials. This could delay completion of clinical trials, require the conduct of bridging clinical trials or the repetition of one or more clinical trials, increase clinical trial costs, delay approval of our product candidates and jeopardize our ability to commence product sales and generate revenue.

The design or execution of our future clinical trials may not support regulatory approval.

The design or execution of a clinical trial can determine whether its results will support regulatory approval and flaws in the design or execution of a clinical trial may not become apparent until the clinical trial is well advanced. In some instances, there can be significant variability in safety or efficacy results between different trials of the same product candidate due to numerous factors, including changes in trial protocols, differences in size and type of the patient populations, adherence to the dosing regimen and other trial protocols and the rate of dropout among clinical trial participants. We do not know whether any clinical trials that we may conduct will demonstrate consistent or adequate efficacy and safety to obtain regulatory approval to market our product candidates.

Further, the FDA and comparable foreign regulatory authorities have substantial discretion in the approval process and in determining when or whether regulatory approval will be obtained for any of our product candidates. Our product candidates may not be approved even if they achieve their primary endpoints in potential future Phase 3 clinical trials or registration trials. The FDA or comparable foreign regulatory authorities may disagree with our trial design and our interpretation of data from preclinical studies and clinical trials. In addition, any of these regulatory

authorities may change requirements for the approval of a product candidate even after reviewing and providing comments or advice on a protocol for a pivotal Phase 3 clinical trial. In addition, any of these regulatory authorities may also approve a product candidate for fewer or more limited indications than we request or may grant approval contingent on the performance of costly post-marketing clinical trials. The FDA or comparable foreign regulatory authorities may not approve the labeling claims that we believe would be necessary or desirable for the successful commercialization of our product candidates. Failure to successfully obtain regulatory approval could have a material adverse impact on our business and financial performance.

Even if any of our product candidates receive regulatory approval, the approved products may not achieve broad market acceptance among physicians, patients, the medical community and third-party payors, in which case revenue generated from their sales would be limited.

Even if regulatory approval is obtained for a product candidate, we may not generate or sustain revenue from sales of the product due to factors such as whether the product can be sold at a competitive price and otherwise will be accepted in the market. The antibodies we are developing use relatively new technologies. Market participants with significant influence over acceptance of new treatments, such as physicians and third-party payors, may not adopt a product or treatment based on our technologies, and the medical community and third-party payors may not accept and use, or provide favorable reimbursement for, any product candidates developed by us. The commercial success of our product candidates will depend upon their acceptance among physicians, patients, the medical community and third-party payors. The degree of market acceptance of any of our product candidates will depend on a number of factors, including:

- the efficacy and safety profile as demonstrated in clinical trials compared to alternative treatments;
- limitations or warnings contained in the approved labeling for our product candidates;
- changes in the standard of care for the targeted indications for our product candidates;
- the clinical indications for which any product candidate is approved;
- lack of significant adverse side effects;
- the effectiveness of sales and marketing efforts;
- availability and extent of coverage and adequate reimbursement, as well as pricing, by managed care plans and other third-party payors, including government authorities;
- patients' willingness to pay out-of-pocket in the absence of coverage and/or adequate reimbursement from third-party payors;
- timing of market introduction of our product candidate as well as competitive products;
- the potential and perceived advantages of our product candidate over alternative treatments;
- the degree of cost-effectiveness of our product candidate;
- availability of alternative therapies at similar or lower cost, including generic and over-the-counter products;
- the extent to which any product candidate is approved for inclusion on formularies of hospitals and managed care organizations;
- whether the product is designated under physician treatment guidelines as a first-line therapy or as a second or third-line therapy for particular indications;
- whether our product candidate can be used effectively with other therapies to achieve higher response rates;
- adverse publicity about our product candidate or favorable publicity about competitive products;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the approval of other new therapies for the same indications;
- relative convenience and ease of administration of our product candidates; and
- potential product liability claims.

If any of our product candidates are approved, but do not achieve an adequate level of acceptance by physicians, patients, the medical community and third-party payors, we may not generate sufficient revenue from these products, and we may not become or remain profitable. In addition, efforts to educate the medical community and third-party payors on the benefits of our product candidates may require significant resources and may never be successful.

If we decide to seek orphan drug designation for one or more of our product candidates, we may be unsuccessful or may be unable to maintain the benefits associated with orphan drug designation for IGM-2323, our DR5 IgM antibody or future product candidates that we may develop. If our competitors are able to obtain orphan product exclusivity for their products in specific indications, we may not be able to have competing products approved in those indications by the applicable regulatory authority for a significant period of time.

Under the Orphan Drug Act, the FDA may designate a product candidate as an orphan drug if it is a drug intended to treat a rare disease or condition, which is generally defined as a patient population of fewer than 200,000 individuals annually in the United States. We may seek Orphan Drug Designation for certain indications for our product candidates in the future. Orphan Drug Designation neither shortens the development time or regulatory review time of a drug nor gives the drug any advantage in the regulatory review or approval process.

Generally, if a product candidate with an Orphan Drug Designation subsequently receives the first marketing approval for the indication for which it has such designation, the product is entitled to a period of marketing exclusivity, which precludes the FDA from approving another marketing application for the same drug for the same indication for seven years. Therefore, if our competitors are able to obtain orphan product exclusivity for their product candidates in the same indications we are pursuing, we may not be able to have competing products approved in those indications by the applicable regulatory authority for a significant period of time. There are also limited circumstances where the FDA may reduce the seven-year exclusivity for a product candidate with an orphan drug designation where other product candidates show clinical superiority to the product with orphan exclusivity or if the FDA finds that the holder of the orphan exclusivity has not shown that it can assure the availability of sufficient quantities of the orphan product to meet the needs of patients with the disease or condition for which the drug was designated. Historically, development of IgM antibodies has been limited by difficulties in recombinant expression and manufacture of these antibodies; therefore, the FDA may determine that we cannot assure the availability of sufficient quantities of our product candidates to the extent necessary to support marketing exclusivity. As a result, even if one of our product candidates receives orphan exclusivity, the FDA can still approve other drugs that have a different active ingredient for use in treating the same indication or disease. Furthermore, the FDA can waive orphan exclusivity if we are unable to manufacture sufficient supply of our product.

Even if we obtain FDA approval of any of our product candidates, we may never obtain approval or commercialize such products outside of the United States, which would limit our ability to realize their full market potential.

In order to market any products outside of the United States, we must establish and comply with numerous and varying regulatory requirements of other countries regarding safety and efficacy and approval standards. Clinical trials conducted in one country may not be accepted by regulatory authorities in other countries, and regulatory approval in one country does not mean that regulatory approval will be obtained in any other country. Approval procedures vary among countries and can involve additional product testing and validation and additional administrative review periods. Seeking foreign regulatory approvals could result in significant delays, difficulties and costs for us and may require additional preclinical studies or clinical trials which would be costly and time consuming. Regulatory requirements can vary widely from country to country and could delay or prevent the introduction of our products in those countries. Satisfying these and other regulatory requirements is costly, time consuming, uncertain and subject to unanticipated delays. In addition, our failure to obtain regulatory approval in any country may delay or have negative effects on the process for regulatory approval in other countries. We do not have any product candidates approved for sale in any jurisdiction, including international markets, and we do not have experience in obtaining regulatory approval in international markets. If we fail to comply with regulatory requirements in international markets or to obtain and maintain required approvals, our target market will be reduced and our ability to realize the full market potential of our products will be harmed.

Reimbursement decisions by third-party payors may have an adverse effect on pricing and market acceptance. If reimbursement is not available or is not sufficient for our products, it is less likely that our products will be widely used.

Even if our product candidates are approved for sale by the appropriate regulatory authorities, market acceptance and sales of these products will depend on coverage and reimbursement policies and may be affected by future healthcare reform measures. Third-party payors, such as government healthcare programs, private health insurers and health maintenance organizations, decide which drugs they will cover and establish the level of reimbursement for such drugs. We cannot be certain that coverage and reimbursement will be available or adequate for any products

that we develop. If coverage and adequate reimbursement is not available or is available on a limited basis, we may not be able to successfully commercialize any of our product candidates, if approved.

There may be significant delays in obtaining coverage and reimbursement for newly approved drugs, and coverage may be more limited than the purposes for which the drug is approved by the FDA, EMA or other regulatory authorities. Moreover, eligibility for coverage and reimbursement does not imply that a drug will be paid for in all cases or at a rate that covers our costs, including research, development, manufacture, sale and distribution expenses. Interim reimbursement levels for new drugs, if applicable, may also be insufficient to cover our and any collaborator's costs and may not be made permanent. Reimbursement rates may vary according to the use of the drug and the clinical setting in which it is used, may be based on reimbursement levels already set for lower cost drugs and may be incorporated into existing payments for other services. Further, no uniform policy for coverage and reimbursement exists in the United States, and coverage and reimbursement can differ significantly from payor to payor. Net prices for drugs may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future change to laws that presently restrict imports of drugs from countries where they may be sold at lower prices than in the United States. Our inability to promptly obtain coverage and adequate reimbursement from third-party payors, including both government-funded and private payors, for any approved products that we develop could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize product candidates and our overall financial condition.

If the market opportunities for any product that we develop are smaller than we believe they are, our revenue may be adversely affected and our business may suffer.

We intend to initially focus our product candidate development on therapeutic IgM antibodies for the treatment of cancer patients. Our projections of addressable patient populations that have the potential to benefit from treatment with our product candidates are based on estimates. These estimates have been derived from a variety of sources, including scientific literature, surveys of clinics, physician interviews, patient foundations and market research, and may prove to be incorrect. Further, new studies may change the estimated incidence or prevalence of these diseases. The number of patients may turn out to be lower than expected. If any of the foregoing estimates are inaccurate, the market opportunities for any of our product candidates could be significantly diminished and have an adverse material impact on our business.

The market opportunities for our product candidates may be limited to those patients who are ineligible for or have failed prior treatments and may be small. The FDA often approves new cancer therapies only for use after one or more other treatments have failed. When cancer is detected early enough, first-line therapy, such as chemotherapy, hormone therapy or surgery, is sometimes adequate to treat the patient. If first-line therapy proves unsuccessful, second-line therapies, such as additional chemotherapy, radiation, antibody drugs, tumor targeted small molecules, or a combination of these therapies, may be administered. Third- or fourth-line therapies may include bone marrow transplantation, antibody and small molecule targeted therapies, more invasive forms of surgery, and new technologies. We may initially seek approval of our product candidates for patients who have failed one or more approved treatments. For instance, we intend to dose the first patient in a Phase 1 clinical trial for the treatment of relapsed/refractory B cell NHL patients in 2019. Even if we obtain regulatory approval and significant market share for IGM-2323, because the potential target population may be small, we may never achieve profitability without obtaining regulatory approval for additional indications. In addition, there is no guarantee that any of our product candidates, even if approved, would be approved as a particular line of treatment. In addition, even if any of our product candidates were approved for a particular line of treatment, we may have to conduct additional clinical trials prior to gaining approval as an earlier line of treatment.

Even if we receive regulatory approval to commercialize any of our product candidates, we will be subject to ongoing regulatory obligations and continued regulatory review, which will result in significant additional expense.

Any regulatory approvals that we receive for our product candidates may be subject to limitations on the approved indicated uses for which the product may be marketed or subject to certain conditions of approval, and may contain requirements for potentially costly post-approval trials, including Phase 4 clinical trials, and surveillance to monitor the safety and efficacy of the marketed product.

For any approved product, we will be subject to ongoing regulatory obligations and extensive oversight by regulatory authorities, including with respect to manufacturing processes, labeling, packaging, distribution, adverse event

reporting, storage, advertising, promotion and recordkeeping for the product. These requirements include submissions of safety and other post-approval information and reports, as well as continued compliance with cGMPs and current good clinical practices (cGCP) for any clinical trials that we conduct post-approval. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:

- restrictions on the marketing or manufacturing of the product;
- withdrawal of the product from the market or voluntary or mandatory product recalls;
- adverse publicity, fines, warning letters or holds on clinical trials;
- refusal by the FDA, EMA or another applicable regulatory authority to approve pending applications or supplements to approved applications filed by us, or suspension or revocation of product license approvals;
- product seizure or detention, or refusal to permit the import or export of products; and
- injunctions or the imposition of civil or criminal penalties.

Occurrence of any of the foregoing could have a material and adverse effect on our business and results of operations. Further, the FDA's or comparable foreign regulatory authorities' policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained, which would adversely affect our business, prospects and ability to generate revenue or achieve or sustain profitability.

If any product liability lawsuits are successfully brought against us, we may incur substantial liabilities and may be required to limit commercialization of our product candidates.

We face an inherent risk of product liability lawsuits related to the testing of our product candidates in seriously ill patients, and will face an even greater risk if product candidates are approved by regulatory authorities and introduced commercially. Product liability claims may be brought against us by participants enrolled in our clinical trials, patients, health care providers or others using, administering or selling any of our future approved products. If we cannot successfully defend ourselves against any such claims, we may incur substantial liabilities. Regardless of their merit or eventual outcome, liability claims may result in:

- decreased demand for any future approved products;
- injury to our reputation;
- withdrawal of clinical trial participants;
- termination of clinical trial sites or entire trial programs;
- increased regulatory scrutiny, including investigations by the FDA and other regulators of the safety and effectiveness of our products, our manufacturing processes and facilities or our marketing programs;
- significant litigation costs;
- substantial monetary awards to or costly settlement with patients or other claimants;
- product recalls, a change in the indications for which they may be used or suspension or withdrawal of marketing approvals;
- loss of revenue;
- diversion of management and scientific resources from our business operations; and
- the inability to commercialize our product candidates.

If any of our product candidates are approved for commercial sale, we will be highly dependent upon consumer perceptions of us and the safety and quality of our products. We could be adversely affected if we are subject to negative publicity. We could also be adversely affected if any of our products or any similar products distributed by other companies prove to be, or are asserted to be, harmful to patients. Because of our dependence upon consumer perceptions, any adverse publicity associated with illness or other adverse effects resulting from patients' use or misuse of our products or any similar products distributed by other companies could have a material adverse impact on our financial condition or results of operations.

We may need to have in place increased product liability coverage if and when we begin the commercialization of our product candidates. Insurance coverage is becoming increasingly expensive. As a result, we may be unable to maintain or obtain sufficient insurance at a reasonable cost to protect us against losses that could have a material adverse effect on our business. A successful product liability claim or series of claims brought against us, particularly if judgments exceed any insurance coverage we may have, could decrease our cash resources and adversely affect our business, financial condition and results of operation.

Our product candidates, for which we intend to seek approval, may face competition sooner than anticipated.

Our ability to compete may be affected in many cases by insurers or other third-party payors seeking to encourage the use of biosimilar products. The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010 (ACA), created a new regulatory scheme authorizing the FDA to approve biosimilars. Under the ACA, a manufacturer may submit an application for licensure of a biologic product that is "biosimilar to" or "interchangeable with" a previously approved biological product or "reference product." Under this statutory scheme, an application for a biosimilar product may not be submitted to the FDA until four years following approval of the reference product. The FDA may not approve a biosimilar product until 12 years from the date on which the reference product was approved. Even if a product is considered to be a reference product eligible for exclusivity, another company could market a competing version of that product if the FDA approves a full Biologics License Application (BLA) for such product containing the sponsor's own preclinical data and data from adequate and well-controlled clinical trials to demonstrate the safety, efficacy and potency of their product. Furthermore, recent legislation has proposed that the 12-year exclusivity period for a referenced product may be reduced to seven years.

Acquisitions or joint ventures could increase our capital requirements, disrupt our business, cause dilution to our stockholders, cause us to incur debt or assume contingent liabilities and otherwise harm our business.

We evaluate various strategic transactions on an ongoing basis. We may acquire other businesses, products or technologies as well as pursue strategic alliances, joint ventures or investments in complementary businesses. Any of these transactions could be material to our financial condition and operating results and expose us to many risks, including:

- disruption in our relationships with any strategic partners or suppliers as a result of such a transaction;
- the assumption of additional indebtedness or contingent or otherwise unanticipated liabilities related to acquired companies;
- the issuance of our equity securities;
- difficulties integrating acquired personnel, technologies and operations into our existing business;
- retention of key employees, the loss of key personnel and uncertainties in our ability to maintain key business relationships;
- diversion of management time and focus from operating our business to management of strategic alliances or joint ventures or acquisition integration challenges;
- risks and uncertainties associated with the other party to such a transaction, including the prospects of that party and their existing products or product candidates and marketing approvals;
- increases in our expenses and reductions in our cash available for operations and other uses;
- our inability to generate revenue from acquired technology and/or products sufficient to meet our objectives in undertaking the acquisition or even to offset the associated acquisition and maintenance costs; and
- possible write-offs or impairment charges relating to acquired businesses.

Foreign acquisitions involve unique risks in addition to those mentioned above, including those related to integration of operations across different cultures and languages, currency risks and the particular economic, political and regulatory risks associated with specific countries.

Also, the anticipated benefit of any strategic alliance, joint venture or acquisition may not materialize or such strategic alliance, joint venture or acquisition may be prohibited. Future credit arrangements may restrict our ability to pursue certain mergers, acquisitions, amalgamations or consolidations that we may believe to be in our best interest. Additionally, future acquisitions or dispositions could result in potentially dilutive issuances of our equity securities, the incurrence of debt, contingent liabilities or amortization expenses or write-offs of goodwill, any of

which could harm our financial condition. We cannot predict the number, timing or size of future joint ventures or acquisitions, or the effect that any such transactions might have on our operating results. Moreover, we may not be able to identify suitable acquisition opportunities, and this inability could impair our ability to grow or obtain access to technology or products that may be important to the development of our business.

Foreign governments tend to impose strict price controls, which may adversely affect our future profitability.

In most foreign countries, particularly those in the European Union, prescription drug pricing and reimbursement is subject to governmental control. In those countries that impose price controls, pricing negotiations with governmental authorities can take considerable time after the receipt of marketing approval for a product. To obtain reimbursement or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost-effectiveness of our product candidates to other available therapies.

Some countries require approval of the sale price of a drug before it can be marketed. In many countries, the pricing review period begins after marketing or product licensing approval is granted. In some foreign markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we might obtain marketing approval for a product candidate in a particular country, but then be subject to price regulations that delay commercial launch of the product candidate, possibly for lengthy time periods, and negatively impact the revenue that are generated from the sale of the product in that country. If reimbursement of such product candidates is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, or if there is competition from lower priced cross-border sales, our profitability will be negatively affected.

We will need to grow our organization, and we may experience difficulty in managing this growth, which could disrupt our operations.

As of August 31, 2019, we had 51 employees. As our development and commercialization plans and strategies develop, and as we transition into operating as a public company, we expect to expand our employee base for managerial, operational, financial and other resources. Additionally, as our product candidates and discovery programs enter and advance through preclinical studies and any clinical trials, we will need to expand our development, manufacturing, regulatory and sales and marketing capabilities or contract with other organizations to provide these capabilities for us. Future growth would impose significant added responsibilities on members of management, including the need to identify, recruit, maintain, motivate and integrate additional employees. Also, our management may need to divert a disproportionate amount of their attention away from our day-to-day activities and devote a substantial amount of time to managing these growth activities. We may not be able to effectively manage the expansion of our operations, which may result in weaknesses in our infrastructure, give rise to operational errors, loss of business opportunities, loss of employees and reduced productivity amongst remaining employees. Our expected growth could require significant capital expenditures and may divert financial resources from other projects, such as the development of existing and additional product candidates and discovery programs. If our management is unable to effectively manage our expected growth, our expenses may increase more than expected, our ability to generate or grow revenue could be reduced and we may not be able to implement our business strategy. Our future financial performance and our ability to commercialize our product candidates and compete effectively with others in our industry will depend on our ability to effectively expand our organization and manage any future growth.

Security breaches, loss of data and other disruptions could compromise sensitive information related to our business or protected health information or prevent us from accessing critical information and expose us to liability, which could adversely affect our business and our reputation.

In the ordinary course of our business, we or our CROs may collect and store sensitive data, including legally protected health information, personally identifiable information, intellectual property and proprietary business information owned or controlled by us. We manage and maintain our applications and data by utilizing a combination of on-site systems, managed data center systems and cloud-based data center systems. These applications and data encompass a wide variety of business-critical information, including research and development information, commercial information and business and financial information. We face four primary risks relative to protecting this critical information, including loss of access risk, inappropriate disclosure risk, inappropriate modification risk and the risk of being unable to adequately monitor our controls over the first three risks.

The secure processing, storage, maintenance and transmission of this critical information are vital to our operations and business strategy, and we devote significant resources to protecting such information. Although we take

measures to protect sensitive information from unauthorized access or disclosure, our information technology and infrastructure and that of any third-party billing and collections provider we may utilize, may be vulnerable to cybersecurity attacks by hackers or viruses or breaches due to employee error, malfeasance or other disruptions. Any such breach or interruption could compromise our networks and the information stored there could be accessed by unauthorized parties, publicly disclosed, lost or stolen. Any such access, disclosure or other loss of information could result in legal claims or proceedings, liability under laws that protect the privacy of personal information, such as the Health Insurance Portability and Accountability Act (HIPAA) as amended by the Health Information Technology for Economic and Clinical Health Act of 2009 (HITECH), mandatory notification and reporting obligations, additional regulatory oversight, significant regulatory penalties and remediation expenses. There is no guarantee that we can protect our systems from breach. Unauthorized access, loss or dissemination of information or any mechanical failure of our or our third-party service providers' information technology systems could also disrupt our operations, including our ability to conduct our analyses, provide test results, bill payors or providers, process claims and appeals, conduct research and development activities, collect, process and prepare company financial information, provide information about any future products, manage the administrative aspects of our business and damage our reputation, any of which could adversely affect our business.

In addition, the interpretation and application of consumer, health-related and data protection laws in the United States, the European Union, and elsewhere are often uncertain, contradictory and in flux. It is possible that these laws may be interpreted and applied in a manner that is inconsistent with our practices. If so, this could result in government-imposed fines or orders requiring that we change our practices, which could adversely affect our business. In addition, these privacy regulations vary between states, may differ from country to country, and may vary based on whether testing is performed in the United States or in the local country. Complying with these various laws could cause us to incur substantial costs or require us to change our business practices and compliance procedures in a manner adverse to our business.

Furthermore, the loss of clinical trial data from completed or future clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. Likewise, we rely on other third parties for the manufacture of our product candidates and to conduct clinical trials, and similar events relating to their computer systems could also have a material adverse effect on our business.

Current and future legislation may increase the difficulty and cost for us to commercialize our product candidates, if approved, and affect the prices we may obtain.

The United States and some foreign jurisdictions are considering or have enacted a number of legislative and regulatory proposals to change healthcare systems in ways that could affect our ability to sell any of our product candidates profitably, if such product candidates are approved for sale. Among policy makers and payors in the United States and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and expanding access. In the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives.

In March 2010, the ACA was enacted, which includes measures that have significantly changed the way healthcare is financed by both governmental and private insurers, and continues to significantly impact the United States pharmaceutical industry. Among the provisions of the ACA of importance to the pharmaceutical industry are the following:

- an annual, non-deductible fee on any entity that manufactures or imports certain branded prescription drugs and biologic agents, apportioned among these entities according to their market share in certain government healthcare programs;
- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program to 23.1% and 13% of the average manufacturer price (AMP), for most branded and generic drugs, respectively;
- Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 70% point-of-sale discounts to negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period;

- extension of manufacturers' Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations;
- expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals and by adding new mandatory eligibility categories for certain individuals with income at or below 133% of the Federal Poverty Level, thereby potentially increasing manufacturers' Medicaid rebate liability;
- requirement that applicable manufacturers and group purchasing organizations report annually to the Centers for Medicare & Medicaid Services (CMS), information regarding certain payments and other transfers of value given to physicians and teaching hospitals, and any ownership or investment interest that physicians, or their immediate family members, have in their company;
- a requirement that manufacturers and authorized distributors of applicable drugs annually report information related to samples provided to practitioners;
- expansion of healthcare fraud and abuse laws, including the False Claims Act and the Anti-Kickback Statute, new government investigative powers, and enhanced penalties for noncompliance;
- a licensure framework for follow-on biologic products;
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research; and
- establishment of a Center for Medicare & Medicaid Innovation at CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending.

Since its enactment, there have been judicial and Congressional challenges to certain aspects of the ACA, and we expect there will be additional challenges and amendments to the ACA in the future. In addition, other legislative changes have been proposed and adopted since the ACA was enacted. These changes include aggregate reductions to Medicare payments to providers of up to 2% per fiscal year pursuant to the Budget Control Act of 2011, which began in 2013 and will remain in effect through 2027 unless additional Congressional action is taken. Moreover, there has recently been heightened governmental scrutiny over the manner in which drug manufacturers set prices for their marketed products, which has resulted in several Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drug products. At the federal level, the Trump administration's budget proposal for fiscal year 2019 contains further drug price control measures that could be enacted during the 2019 budget process or in other future legislation, including, for example, measures to permit Medicare Part D plans to negotiate the price of certain drugs under Medicare Part B, to allow some states to negotiate drug prices under Medicaid, and to eliminate cost sharing for generic drugs for low-income patients. The Trump administration released a "Blueprint" to lower drug prices and reduce out of pocket costs of drugs that contains additional proposals to increase manufacturer competition, increase the negotiating power of certain federal healthcare programs, incentivize manufacturers to lower the list price of their products and reduce the out of pocket costs of drug products paid by consumers.

In the European Union similar political, economic and regulatory developments may affect our ability to profitably commercialize our current or any future products. In addition to continuing pressure on prices and cost containment measures, legislative developments at the European Union or member state level may result in significant additional requirements or obstacles that may increase our operating costs. In international markets, reimbursement and healthcare payment systems vary significantly by country, and many countries have instituted price ceilings on specific products and therapies. Our future products, if any, might not be considered medically reasonable and necessary for a specific indication or cost-effective by third-party payors, an adequate level of reimbursement might not be available for such products and third-party payors' reimbursement policies might adversely affect our ability to sell any future products profitably.

Legislative and regulatory proposals have been made to expand post-approval requirements and restrict sales and promotional activities for pharmaceutical products. We cannot be sure whether additional legislative changes will be enacted, or whether the FDA regulations, guidance or interpretations will be changed, or what the impact of such changes on the marketing approvals of our product candidates, if any, may be. In addition, increased scrutiny by the

U.S. Congress of the FDA's approval process may significantly delay or prevent marketing approval, as well as subject us to more stringent product labeling and post-approval testing and other requirements.

We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, our product candidates may lose any marketing approval that may have been obtained and we may not achieve or sustain profitability, which would adversely affect our business.

Inadequate funding for the FDA, the SEC and other government agencies could hinder their ability to hire and retain key leadership and other personnel, prevent new products and services from being developed or commercialized in a timely manner or otherwise prevent those agencies from performing normal business functions on which the operation of our business may rely, which could negatively impact our business.

The ability of the FDA to review and approve new products can be affected by a variety of factors, including government budget and funding levels, ability to hire and retain key personnel and accept the payment of user fees, and statutory, regulatory, and policy changes. Average review times at the agency have fluctuated in recent years as a result. In addition, government funding of the Securities and Exchange Commission (SEC) and other government agencies on which our operations may rely, including those that fund research and development activities is subject to the political process, which is inherently fluid and unpredictable.

Disruptions at the FDA and other agencies may also slow the time necessary for new drugs to be reviewed and/or approved by necessary government agencies, which would adversely affect our business. For example, in recent years, including in 2018 and 2019, the U.S. government shut down several times and certain regulatory agencies, such as the FDA and the SEC, had to furlough critical employees and stop critical activities. If a prolonged government shutdown occurs, it could significantly impact the ability of the FDA to timely review and process our regulatory submissions, which could have a material adverse effect on our business. Further, upon completion of this offering and in our operations as a public company, future government shutdowns could impact our ability to access the public markets and obtain necessary capital in order to properly capitalize and continue our operations.

Our business may become subject to economic, political, regulatory and other risks associated with international operations.

Our business may be subject to risks associated with conducting business internationally. While we have not taken any steps to enter into any non-U.S. markets, we may do so in the future. In addition, our future suppliers and collaborative and clinical trial relationships may be located outside the United States. Accordingly, our future results could be harmed by a variety of factors, including:

- economic weakness, including inflation, or political instability in particular foreign economies and markets;
- differing regulatory requirements for drug approvals in foreign countries;
- potentially reduced protection for intellectual property rights;
- difficulties in compliance with non-U.S. laws and regulations;
- changes in non-U.S. regulations and customs, tariffs and trade barriers;
- changes in non-U.S. currency exchange rates and currency controls;
- changes in a specific country's or region's political or economic environment;
- trade protection measures, import or export licensing requirements or other restrictive actions by U.S. or non-U.S. governments;
- differing reimbursement regimes, including price controls;
- negative consequences from changes in tax laws;
- compliance with tax, employment, immigration and labor laws for employees living or traveling abroad;
- workforce uncertainty in countries where labor unrest is more common than in the United States;
- difficulties associated with staffing and managing foreign operations, including differing labor relations;
- production shortages resulting from any events affecting raw material supply or manufacturing capabilities abroad; and
- business interruptions resulting from geo-political actions, including war and terrorism, or natural disasters including earthquakes, typhoons, floods and fires.

Our business and current and future relationships with customers and third-party payors in the United States and elsewhere will be subject, directly or indirectly, to applicable federal and state anti-kickback, fraud and abuse, false claims, transparency, health information privacy and security and other healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm, administrative burdens, and diminished profits and future earnings.

Healthcare providers, physicians and third-party payors in the United States and elsewhere play a primary role in the recommendation and prescription of any product candidates for which we may obtain marketing approval. Our current and future arrangements with healthcare professionals, principal investigators, consultants, customers, and third-party payors and other entities may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations, including, without limitation, the federal Anti-Kickback Statute and the federal False Claims Act, that may constrain the business or financial arrangements and relationships through which we conduct clinical research on product candidates and market, sell and distribute any products for which we obtain marketing approval. In addition, we may be subject to transparency laws and patient privacy regulation by the federal government and by the U.S. states and foreign jurisdictions in which we conduct our business. The applicable federal, state and foreign healthcare laws that may affect our ability to operate include, but are not limited to, the following:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons from knowingly and willfully soliciting, offering, receiving or providing remuneration (including any kickback, bribe or rebate), directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of, any good or service for which payment may be made under federal and state healthcare programs such as Medicare and Medicaid;
- federal civil and criminal false claims laws, including the Federal False Claims Act, which can be enforced through civil whistleblower or qui tam actions, and civil monetary penalty laws, which impose criminal and civil penalties against individuals or entities for knowingly presenting, or causing to be presented, to the federal government, including the Medicare and Medicaid programs, for payment that are false or fraudulent or making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government;
- HIPAA, which among other things, imposes criminal liability for knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program or to obtain, by means of false or fraudulent pretenses, representations, or promises, any of the money or property owned by, or under the custody or control of, any healthcare benefit program, regardless of the payor (*e.g.*, public or private) and knowingly and willfully falsifying, concealing or covering up by any trick or device a material fact or making any materially false statements in connection with the delivery of or payment for healthcare benefits, items or services relating to healthcare matters;
- HIPAA, as amended by HITECH, and its implementing regulations, which imposes certain obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information;
- the federal Open Payments program under the Physician Payments Sunshine Act, created under Section 6002 of the ACA and its implementing regulations requires certain manufacturers of covered drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program (with certain exceptions) and applicable group purchasing organizations to report annually to CMS information related to "payments or other transfers of value" made to covered recipients, such as physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, and further that such applicable manufacturers and applicable group purchasing organizations to report annually to CMS ownership and investment interests held by physicians (as defined above) and their immediate family members;
- analogous state and foreign laws and regulations, including: state anti-kickback and false claims laws which may apply to our business practices, including, but not limited to, research, distribution, sales and marketing arrangements and claims involving healthcare items or services reimbursed by state governmental and non-governmental third-party payors, including private insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the applicable compliance guidance promulgated by the federal government; state laws that require drug manufacturers to track gifts and other remuneration and items of value provided to healthcare professionals and entities;

state and local laws that require the registration of pharmaceutical sales representatives; and state laws that require drug manufacturers to report information relating to pricing and marketing information; and

- state and foreign laws that govern the privacy and security of health information in specified circumstances, many of which differ from each other in significant ways and often are not pre-empted by HIPAA, thus complicating compliance efforts.

Because of the breadth of these laws and the narrowness of the statutory exceptions and regulatory safe harbors available, it is possible that some of our current and future business activities could be subject to challenge under one or more of such laws. In addition, recent healthcare reform legislation has strengthened these laws. For example, the ACA, among other things, amends the intent requirement of the U.S. federal Anti-Kickback Statute and certain criminal healthcare fraud statutes. A person or entity no longer needs to have actual knowledge of these statutes or specific intent to violate them in order to be in violation. Moreover, the ACA provides that the government may assert that a claim including items or services resulting from a violation of the U.S. federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal False Claims Act.

Efforts to ensure that our business arrangements with third parties will comply with applicable healthcare laws may involve substantial costs. It is possible that governmental authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws. If our operations are found to be in violation of any of these laws or any other laws that may apply to us, we may be subject to significant civil, criminal and administrative penalties, including, without limitation, damages, fines, disgorgement, imprisonment, exclusion from participation in government healthcare programs, such as Medicare and Medicaid, additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws and the curtailment or restructuring of our operations, which could have a material adverse effect on our business. If any of the physicians or other providers or entities with whom we expect to do business, is found not to be in compliance with applicable laws, it may be subject to significant criminal, civil or administrative sanctions, including exclusions from participation in government healthcare programs, which could also materially affect our business.

We are subject to U.S. and certain foreign export and import controls, sanctions, embargoes, anti-corruption laws, and anti-money laundering laws and regulations. Compliance with these legal standards could impair our ability to compete in domestic and international markets. We can face criminal liability and other serious consequences for violations which can harm our business.

We are subject to export control and import laws and regulations, including the U.S. Export Administration Regulations, U.S. Customs regulations, various economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Controls, the U.S. Foreign Corrupt Practices Act of 1977, as amended, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the USA PATRIOT Act, the United Kingdom Bribery Act 2010, the Proceeds of Crime Act 2002, and other state and national anti-bribery and anti-money laundering laws in the countries in which we conduct activities. Anti-corruption laws are interpreted broadly and prohibit companies and their employees, agents, contractors, and other partners from authorizing, promising, offering, or providing, directly or indirectly, improper payments or anything else of value to recipients in the public or private sector. We may engage third parties for clinical trials outside of the United States, to sell our products abroad once we enter a commercialization phase, or to obtain necessary permits, licenses, patent registrations, and other regulatory approvals. We may have direct or indirect interactions with officials and employees of government agencies or government-affiliated hospitals, universities, and other organizations. We can be held liable for the corrupt or other illegal activities of our employees, agents, contractors, and other partners, even if we do not explicitly authorize or have actual knowledge of such activities. Any violation of the laws and regulations described above may result in substantial civil and criminal fines and penalties, imprisonment, the loss of export or import privileges, debarment, tax reassessments, breach of contract and fraud litigation, reputational harm, and other consequences.

Our employees, independent contractors, principal investigators, consultants and vendors may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements.

We are exposed to the risk of employee fraud or other misconduct. Misconduct by employees and independent contractors, such as principal investigators, consultants and vendors, could include intentional failures to comply with FDA regulations, to provide accurate information to the FDA, to comply with federal and state health care fraud

and abuse laws, to report financial information or data accurately or to disclose unauthorized activities to us. In particular, sales, marketing and business arrangements in the health care industry are subject to extensive laws intended to prevent fraud, misconduct, kickbacks, self-dealing and other abusive practices. These laws may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Employee and independent contractor misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. We have adopted a written code of business conduct and ethics which will be effective prior to the consummation of this offering, but it is not always possible to identify and deter employee or independent contractor misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of significant fines or other sanctions.

If we do not comply with laws regulating the protection of the environment and health and human safety, our business could be adversely affected.

We are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. Our research and development involves, and may in the future involve, the use of potentially hazardous materials and chemicals. Our operations may produce hazardous waste products. Although we believe that our safety procedures for handling and disposing of these materials comply with the standards mandated by local, state and federal laws and regulations, the risk of accidental contamination or injury from these materials cannot be eliminated. If an accident occurs, we could be held liable for resulting damages, which could be substantial. We are also subject to numerous environmental, health and workplace safety laws and regulations and fire and building codes, including those governing laboratory procedures, exposure to blood-borne pathogens, use and storage of flammable agents and the handling of biohazardous materials. Although we maintain workers' compensation insurance as prescribed by the State of California to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of these materials, this insurance may not provide adequate coverage against potential liabilities. We do not maintain insurance for environmental liability or toxic tort claims that may be asserted against us. Additional federal, state and local laws and regulations affecting our operations may be adopted in the future. Current or future laws and regulations may impair our research, development or commercialization efforts. We may incur substantial costs to comply with, and substantial fines or penalties if we violate, any of these laws or regulations.

Business disruptions could seriously harm our business and financial condition and increase our costs and expenses.

Our operations, and those of our CROs, suppliers, and other contractors and consultants, could be subject to earthquakes, power shortages, telecommunications failures, failures or breaches of information technology systems, water shortages, floods, hurricanes, typhoons, fires, extreme weather conditions, medical epidemics, and other natural or man-made disasters or business interruptions, for which we are partly uninsured. The occurrence of any of these business disruptions could seriously harm our operations and financial condition and increase our costs and expenses. We currently rely on third party manufacturers to produce and process our product candidates. Our ability to obtain clinical supplies of our product candidates could be disrupted if the operations of these suppliers are affected by a man-made or natural disaster or other business interruption.

All of our operations including our corporate headquarters are located in a single facility in Mountain View, California. Damage or extended periods of interruption to our facilities due to fire, natural disaster, power loss, communications failure, unauthorized entry or other events could cause us to cease or delay development of some or all of our product candidates. We do not carry sufficient insurance to compensate us for actual losses from interruption of our business that may occur, and any losses or damages incurred by us could harm our business.

Risks Related to Our Financial Position and Need for Additional Capital

We have incurred significant losses since inception and anticipate that we will continue to incur losses for the foreseeable future. We have no products approved for commercial sale, and to date we have not generated any revenue or profit from product sales. We may never achieve or sustain profitability.

We have incurred significant losses since our inception. Our net loss for the six months ended June 30, 2019 and the year ended December 31, 2018 was $18.1 million and $22.7 million, respectively. As of June 30, 2019, our

accumulated deficit was approximately $82.2 million. We expect to continue to incur losses for the foreseeable future, and we expect these losses to increase as we continue our research and development of, and seek regulatory approvals for, our product candidates, prepare for and begin to commercialize any approved product candidates and add infrastructure and personnel to support our product development efforts and operations as a public company. The net losses and negative cash flows incurred to date, together with expected future losses, have had, and likely will continue to have, an adverse effect on our shareholders' deficit and working capital. The amount of future net losses will depend, in part, on the rate of future growth of our expenses and our ability to generate revenue. The net losses we incur may fluctuate significantly from quarter-to-quarter such that a period-to-period comparison of our results of operations may not be a good indication of our future performance.

Because of the numerous risks and uncertainties associated with drug development, we are unable to accurately predict the timing or amount of increased expenses or when, or if, we will be able to generate product revenue or achieve profitability. For example, our expenses could increase if we are required by the FDA to perform clinical trials in addition to those that we currently expect to perform, or if there are any delays in completing our currently planned clinical trials or in the development of any of our product candidates.

Drug development is a highly speculative undertaking and involves a substantial degree of uncertainty. We have never generated any revenue from product sales and may never be profitable. Our ability to generate revenue and achieve profitability depends significantly on our ability to achieve a number of objectives.

Since the commencement of our operations, we have focused substantially all of our resources on conducting research and development activities, including drug discovery and preclinical studies, establishing and maintaining our intellectual property portfolio, the manufacturing of clinical and research material, developing our in-house manufacturing capabilities, hiring personnel, raising capital and providing general and administrative support for these operations. Since 2010, such activities have exclusively related to the research, development and manufacture of IgM antibodies and to building our proprietary IgM antibody technology platform. We are still in the early stages of developing our product candidates, and we have not completed development of any product candidate. As a result, we expect that it will be several years, if ever, before we generate revenue from product sales. Our ability to generate revenue and achieve profitability depends in large part on our ability, to successfully complete the development of, obtain the necessary regulatory approvals for, and commercialize, product candidates. We do not anticipate generating revenue from sales of products for the foreseeable future.

To generate product revenue and become and remain profitable, we must succeed in developing and commercializing product candidates with significant market potential. This will require us to be successful in a range of challenging activities for which we are only in the preliminary stages, including:

- successfully completing preclinical and clinical development of our product candidates in a timely manner;
- obtaining regulatory approval for such product candidates in a timely manner;
- satisfying any post-marketing approval commitments required by applicable regulatory authorities;
- developing an efficient, scalable and compliant manufacturing process for such product candidates, including expanding and maintaining manufacturing operations, commercially viable supply and manufacturing relationships with third parties to obtain finished products that are appropriately packaged for sale;
- successfully launching commercial sales following any marketing approval, including the development of a commercial infrastructure, whether in-house or with one or more collaborators;
- maintaining a continued acceptable safety profile following any marketing approval;
- achieving commercial acceptance of such product candidates as viable treatment options by patients, the medical community and third-party payors;
- addressing any competing technological and market developments;
- identifying, assessing, acquiring and developing new product candidates;
- obtaining and maintaining patent protection, trade secret protection and regulatory exclusivity, both in the United States and internationally;
- protecting our rights in our intellectual property portfolio, including our licensed intellectual property;

- negotiating favorable terms in any collaboration, licensing or other arrangements that may be necessary to develop, manufacture or commercialize our product candidates; and
- attracting, hiring and retaining qualified personnel.

We may never succeed in these activities and may never generate revenue from product sales that is significant enough to achieve profitability. Even if we achieve profitability in the future, we may not be able to sustain profitability in subsequent periods. Our failure to become or remain profitable would depress our market value and could impair our ability to raise capital, expand our business, develop other product candidates, or continue our operations. A decline in the value of our company could also cause you to lose all or part of your investment.

Even if this offering is successful, we will require substantial additional funding, which may not be available to us on acceptable terms, or at all, and, if not available, may require us to delay, scale back or cease our product development programs or operations.

All of our product candidates and discovery programs are in preclinical development or early stage clinical development. Developing drug products, including conducting preclinical studies and clinical trials, is expensive. In order to obtain such regulatory approval, we will be required to conduct clinical trials for each indication for each of our product candidates, which will increase our expenses. We will continue to require additional funding beyond this contemplated offering to complete the development and commercialization of our product candidates, to continue to advance our discovery programs, to expand our manufacturing facilities and to satisfy additional costs that we expect to incur in connection with operating as a public company. Such funding may not be available on acceptable terms or at all.

As of June 30, 2019, we had $42.7 million in cash and cash equivalents. Additionally, in July 2019, we received cash of $40.0 million in connection with the issuance of our Series C convertible preferred stock. We estimate that our net proceeds from this offering will be approximately $112.4 million, assuming an initial public offering price of $16.00 per share, which is the midpoint of the estimated offering price range set forth on the cover page of this prospectus, after deducting the underwriting discounts and commissions and estimated offering expenses payable by us. Our estimate as to how long we expect the net proceeds from this offering, together with our existing cash and cash equivalents, to be able to continue to fund our operations is based on assumptions that may prove to be wrong, and we could use our available capital resources sooner than we currently expect. Changing circumstances, some of which may be beyond our control, could cause us to consume capital significantly faster than we currently anticipate, and we may need to seek additional funds sooner than planned. In addition, because successful development of our product candidates is uncertain, we are unable to estimate the actual funds we will require to complete research and development and to commercialize our product candidates.

Our future funding requirements will depend on many factors, including but not limited to:

- the initiation, scope, rate of progress, results and cost of our preclinical studies, clinical trials and other related activities for our product candidates;
- the costs associated with manufacturing our product candidates, including expanding our own manufacturing facilities, and establishing commercial supplies and sales, marketing and distribution capabilities;
- the timing and cost of capital expenditures to support our research, development and manufacturing efforts;
- the number and characteristics of other product candidates that we pursue;
- the costs, timing and outcome of seeking and obtaining FDA and non-U.S. regulatory approvals;
- our ability to maintain, expand and defend the scope of our intellectual property portfolio, including the amount and timing of any payments we may be required to make in connection with the licensing, filing, defense and enforcement of any patents or other intellectual property rights;
- the timing, receipt and amount of sales from our potential products;
- our need and ability to hire additional management, scientific and medical personnel;
- the effect of competing products that may limit market penetration of our product candidates;
- our need to implement additional internal systems and infrastructure, including financial and reporting systems;

- the economic and other terms, timing and success of any collaboration, licensing, or other arrangements into which we may enter in the future, including the timing of receipt of any milestone or royalty payments under these agreements;
- the compliance and administrative costs associated with being a public company; and
- the extent to which we acquire or invest in businesses, products or technologies, although we currently have no commitments or agreements relating to any of these types of transactions.

Until we can generate a sufficient amount of product revenue to finance our cash requirements, which we may never do, we expect to finance future cash needs primarily through a combination of public and private equity offerings, debt financings and strategic partnerships. We do not have any committed external source of funds. If sufficient funds on acceptable terms are not available when needed, or at all, we could be forced to significantly reduce operating expenses and delay, scale back or eliminate one or more of our clinical or discovery programs or our business operations.

Raising additional capital may cause dilution to our stockholders, including purchasers of our common stock in this offering, restrict our operations or require us to relinquish substantial rights.

To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms of these new securities may include liquidation or other preferences that adversely affect your rights as a common stockholder. Debt financing, if available at all, may involve fixed payment obligations or agreements that include covenants limiting or restricting our ability to take specific actions such as incurring additional debt, making capital expenditures, or declaring dividends. If we raise additional funds through partnerships, collaborations, strategic alliances, or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, product candidates, or future revenue streams, or grant licenses on terms that are not favorable to us. We cannot assure you that we will be able to obtain additional funding if and when necessary. If we are unable to obtain adequate financing on a timely basis, we could be required to delay, scale back or eliminate one or more of our clinical or discovery programs or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves. In addition, we may seek additional capital due to favorable market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans.

Unstable market and economic conditions may have serious adverse consequences on our business and financial condition.

Global credit and financial markets have experienced extreme disruptions at various points over the last few decades, characterized by diminished liquidity and credit availability, declines in consumer confidence, declines in economic growth, increases in unemployment rates and uncertainty about economic stability. If another such disruption in credit and financial markets and deterioration of confidence in economic conditions occurs, our business may be adversely affected. If the equity and credit markets were to deteriorate significantly in the future, it may make any necessary debt or equity financing more difficult to complete, more costly, and more dilutive. Failure to secure any necessary financing in a timely manner and on favorable terms could have a material adverse effect on our growth strategy, financial performance and share price and could require us to delay or abandon development or commercialization plans. In addition, there is a risk that one or more of our service providers, manufacturers or other partners would not survive or be able to meet their commitments to us under such circumstances, which could directly affect our ability to attain our operating goals on schedule and on budget.

Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited.

As of December 31, 2018, we had net operating loss (NOL) carryforwards available to reduce future taxable income, if any, for federal and California income tax purposes of approximately $25.8 million and $23.5 million, respectively. At December 31, 2018, we also had federal and California research and development tax credit carryforwards of $2.5 million and $1.9 million, respectively, available to offset future income tax, if any. Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended (the Code), if a corporation undergoes an “ownership change,” the corporation’s ability to use its NOLs and other pre-change tax attributes such as research tax credits to offset its post-change taxable income or taxes may be limited. In general, an “ownership change” occurs if there is a cumulative change in our ownership by “5% shareholders” that exceeds 50 percentage points over a rolling three-year period. Although we have not yet completed a formal Section 382 study, we believe that we may have undergone an “ownership change” in the past and we may undergo one or more ownership changes as a

result of this offering or future transactions in our stock. Consequently, we may be limited in our ability to use our NOL carryforwards and other tax assets to reduce taxes owed on the net taxable income that we earn. As a result, even if we attain profitability, any limitations on the ability to use our NOL carryforwards and other tax assets could adversely affect our future cash flows. In addition, the Tax Cuts and Jobs Act of 2017 (Tax Act) imposes certain limitations on the deduction of NOLs, including a limitation on use of NOLs generated in tax years that began on or after January 1, 2018 to offset 80% of taxable income and disallowance of carryback of post-2017 NOLs.

Changes in the U.S. taxation of international business activities or the adoption of other tax reform policies could materially impact our business, results of operations and financial condition.

Changes to U.S. tax laws that may be enacted in the future could impact the tax treatment of our foreign earnings. If we expand our international business activities, any changes in the U.S. taxation of such activities may increase our worldwide effective tax rate and adversely affect our business, results of operations and financial condition. On December 22, 2017, President Trump signed into law the Tax Act, which significantly revises the Code. The Tax Act, among other things, reduces the corporate tax rate from a top marginal rate of 34% to a flat rate of 21%, repeals the alternative minimum tax for corporations, limits the tax deduction for interest expense to 30% of adjusted taxable income (except for certain small businesses), eliminates U.S. tax on foreign earnings (subject to certain exceptions) and modifies or repeals many business deductions and credits (including reducing the business tax credit for certain clinical testing expenses incurred in the testing of certain drugs for rare diseases or conditions generally referred to as “orphan drugs”).

Risks Related to Our Dependence on Third Parties

We currently rely on third-party manufacturers to produce our product candidates. Any failure by a third-party manufacturer to produce acceptable product candidates for us pursuant to our specifications and regulatory standards may delay or impair our ability to initiate or complete our clinical trials, obtain and maintain regulatory approvals or commercialize approved products.

We currently have limited in-house manufacturing experience and personnel. While we are in the process of designing and developing a cGMP manufacturing facility for the manufacture of clinical trial drug materials, we expect to continue to rely for some time on third parties to manufacture our product candidates for preclinical testing and clinical trials, in compliance with applicable regulatory and quality standards, and may do so for the commercial manufacture of some of our product candidates, if approved. To date, we have obtained bulk drug substance (BDS) for IGM-2323 from a single-source third-party contract manufacturer, and we expect to obtain BDS for our DR5 IgM antibody from a single-source third-party contract manufacturer as well. Any reduction or halt in supply of BDS from either of these contract manufacturers could severely constrain our ability to develop our product candidates until a replacement contract manufacturer is found and qualified. If we are unable to arrange for and maintain such third-party manufacturing sources that are capable of meeting regulatory standards, or fail to do so on commercially reasonable terms, we may not be able to successfully produce sufficient supply of product candidate or we may be delayed in doing so. If we were to experience an unexpected loss of supply of our product candidates, for any reason, whether as a result of manufacturing, supply or storage issues or otherwise, we could experience delays, disruptions, suspensions or terminations of, or be required to restart or repeat, any pending or ongoing clinical trials. Such failure or substantial delay or loss of supply could materially harm our business.

Reliance on third-party manufacturers entails risks to which we may not be subject if we manufactured product candidates ourselves, including:

- the possible failure of the third party to manufacture our product candidates according to our schedule, or at all, including if our third-party contractors give greater priority to the supply of other products over our product candidates or otherwise do not satisfactorily perform according to the terms of the agreements between us and them;
- reliance on the third party for regulatory compliance and quality control and assurance and failure of the third party to comply with regulatory requirements;
- the possibility of breach of the manufacturing agreement by the third party because of factors beyond our control (including a failure to manufacture our product candidates in accordance with our product specifications);

- the possible mislabeling of clinical supplies, potentially resulting in the wrong dose amounts being supplied or active drug or placebo not being properly identified;
- the possibility of clinical supplies not being delivered to clinical sites on time, leading to clinical trial interruptions, or of drug supplies not being distributed to commercial vendors in a timely manner, resulting in lost sales;
- the possible misappropriation of our proprietary information, including our trade secrets and know-how; and
- the possibility of termination or nonrenewal of the agreement by the third-party at a time that is costly or damaging to us.

In addition, the FDA, EMA and other regulatory authorities require that our product candidates be manufactured according to cGMP and similar foreign standards. Pharmaceutical manufacturers and their subcontractors are required to register their facilities or products manufactured at the time of submission of the marketing application and then annually thereafter with the FDA and certain state and foreign agencies. They are also subject to periodic unannounced inspections by the FDA, state and other foreign authorities. If the FDA or a comparable foreign regulatory authority does not approve these facilities for the manufacture of our product candidates or if it withdraws any such approval in the future, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain marketing approval for or market our product candidates, if approved. Any subsequent discovery of problems with a product, or a manufacturing or laboratory facility used by us or our strategic partners, may result in sanctions being imposed on us, including fines, injunctions, civil penalties, restrictions on the product or on the manufacturing or laboratory facility, including license revocation, marketed product recall, suspension of manufacturing, product seizure, voluntary withdrawal of the product from the market, operating restrictions or criminal prosecutions, any of which could significantly and adversely affect supplies of our product candidates and harm our business and results of operations.

We may have little to no control regarding the occurrence of third-party manufacturer incidents. Any failure by our third-party manufacturers to comply with cGMP or failure to scale up manufacturing processes, including any failure to deliver sufficient quantities of product candidates in a timely manner, would lead to a delay in, or failure to seek or obtain, regulatory approval of any of our product candidates. Furthermore, any change in manufacturer of our product candidates or approved products, if any, would require new regulatory approvals, which could delay completion of clinical trials or disrupt commercial supply of approved products.

Our current and anticipated future dependence upon others for the manufacture of our product candidates may adversely affect our future profit margins and our ability to commercialize any product candidates that receive marketing approval on a timely and competitive basis.

In some cases, the technical skills or technology required to manufacture our product candidates may be unique or proprietary to the original manufacturer, we may have difficulty transferring such skills or technology to another third party and a feasible alternative many not exist. These factors would increase our reliance on such manufacturer or require us to obtain a license from such manufacturer in order to have another third party manufacture our product candidates. If we are required to change manufacturers for any reason, we will be required to verify that the new manufacturer maintains facilities and procedures that comply with quality standards and with all applicable regulations and guidelines. The delays associated with the verification of a new manufacturer could negatively affect our ability to develop product candidates in a timely manner or within budget.

We rely on third parties to monitor, support, conduct and oversee clinical trials of the product candidates that we are developing and, in some cases, to maintain regulatory files for those product candidates. We may not be able to obtain regulatory approval for our product candidates or commercialize any products that may result from our development efforts, or may miss expected deadlines, if we are not able to maintain or secure agreements with such third parties on acceptable terms, if these third parties do not perform their services as contractually required, or if these third parties fail to timely transfer any regulatory information held by them to us.

We rely on entities outside of our control, which may include academic institutions, CROs, hospitals, clinics and other third-party strategic partners, to monitor, support, conduct and oversee preclinical studies and clinical trials of our current and future product candidates. As a result, we have less control over the timing and cost of these studies and the ability to recruit trial subjects than if we conducted these trials with our own personnel.

If we are unable to maintain or enter into agreements with these third parties on acceptable terms, or if any such engagement is terminated prematurely, we may be unable to enroll patients on a timely basis or otherwise conduct our trials in the manner we anticipate. In addition, there is no guarantee that these third parties will devote adequate time and resources to our studies or perform as required by our contract or in accordance with regulatory requirements, including maintenance of clinical trial information regarding our product candidates. If these third parties fail to meet expected deadlines, fail to transfer to us any regulatory information in a timely manner, fail to adhere to protocols or fail to act in accordance with regulatory requirements or our agreements with them, or if they otherwise perform in a substandard manner or in a way that compromises the quality or accuracy of their activities or the data they obtain, then clinical trials of our product candidates may be extended or delayed with additional costs incurred, or our data may be rejected by the FDA, EMA or other regulatory agencies.

Ultimately, we are responsible for ensuring that each of our clinical trials is conducted in accordance with the applicable protocol, legal, regulatory and scientific standards, and our reliance on third parties does not relieve us of our regulatory responsibilities.

We and our CROs are required to comply with cGCP regulations and guidelines enforced by the FDA, the competent authorities of the member states of the European Union and comparable foreign regulatory authorities for products in clinical development. Regulatory authorities enforce these cGCP regulations through periodic inspections of clinical trial sponsors, principal investigators and clinical trial sites. If we or any of our CROs fail to comply with applicable cGCP regulations, the clinical data generated in our clinical trials may be deemed unreliable and our submission of marketing applications may be delayed or the FDA may require us to perform additional clinical trials before approving our marketing applications. Upon inspection, the FDA could determine that any of our clinical trials fail or have failed to comply with applicable cGCP regulations. In addition, our clinical trials must be conducted with product produced under the cGMP regulations enforced by the FDA, and our clinical trials may require a large number of test subjects. Our failure to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process and increase our costs. Moreover, our business may be implicated if any of our CROs violates federal or state fraud and abuse or false claims laws and regulations or healthcare privacy and security laws.

If any of our clinical trial sites terminate for any reason, we may experience the loss of follow-up information on patients enrolled in our ongoing clinical trials unless we are able to transfer the care of those patients to another qualified clinical trial site. Further, our CROs are not required to work indefinitely or exclusively with us. Our existing agreements with our CROs may be subject to termination by the counterparty upon the occurrence of certain circumstances. If any CRO terminates its agreement with us, the research and development of the relevant product candidate would be suspended, and our ability to research, develop, and license future product candidates may be impaired. We may be required to devote additional resources to the development of our product candidates or seek a new collaboration partner, and the terms of any additional collaborations or other arrangements that we establish may not be favorable to us.

Switching or adding CROs or other suppliers can involve substantial cost and require extensive management time and focus. In addition, there is a natural transition period when a new CRO or supplier commences work. As a result, delays may occur, which can materially impact our ability to meet our desired clinical development timelines. If we are required to seek alternative supply arrangements, the resulting delays and potential inability to find a suitable replacement could materially and adversely impact our business.

We rely on third parties for various operational and administrative aspects of our business, including for certain cloud-based software platforms, which impact our financial, operational and research activities. If any of these third parties fail to provide timely, accurate and ongoing service or if the technology systems and infrastructure suffer outages that we are unable to mitigate, our business may be adversely affected.

We currently rely upon third party consultants and contractors to provide certain operational and administrative services. These services include tax advice and clinical and research consultation. The failure of any of these third parties to provide accurate and timely service may adversely impact our business operations. In addition, if such third-party service providers were to cease operations, temporarily or permanently, face financial distress or other business disruption, increase their fees or if our relationships with these providers deteriorate, we could suffer increased costs until an equivalent provider could be found, if at all, or we could develop internal capabilities, if

ever. In addition, if we are unsuccessful in choosing or finding high-quality partners, if we fail to negotiate cost-effective relationships with them, or if we ineffectively manage these relationships, it could have an adverse impact on our business and financial performance.

Further, our operations depend on the continuing and efficient operation of our information technology, communications systems and infrastructure, and on "cloud-based" platforms. Any of these systems and infrastructure are vulnerable to damage or interruption from earthquakes, vandalism, sabotage, terrorist attacks, floods, fires, power outages, telecommunications failures, and computer viruses or other deliberate attempts to harm the systems. The occurrence of a natural or intentional disaster, any decision to close a facility we are using without adequate notice, or particularly an unanticipated problem at a cloud-based virtual server facility, could result in harmful interruptions in our service, resulting in adverse effects to our business.

Future strategic partnerships may be important to us. We will face significant competition in seeking new strategic partners.

We have limited capabilities for drug development and manufacturing and do not yet have any capability for sales, marketing or distribution. For some of our product candidates, we may in the future determine to collaborate with pharmaceutical and biotechnology companies for development and potential commercialization of therapeutic products. The competition for strategic partners is intense. Our ability to reach a definitive agreement for collaboration will depend, among other things, upon our assessment of the strategic partner's resources and expertise, the terms and conditions of the proposed collaboration and the proposed strategic partner's evaluation of a number of factors. These factors may include the design or results of clinical trials, the likelihood of approval by the FDA or comparable foreign regulatory authorities, the potential market for the subject product candidate, the costs and complexities of manufacturing and delivering such product candidate to patients, the potential of competing products, the existence of uncertainty with respect to our ownership of technology, which can exist if there is a challenge to such ownership without regard to the merits of the challenge, and industry and market conditions generally. The strategic partner may also consider alternative product candidates or technologies for similar indications that may be available for collaboration and whether such collaboration could be more attractive than the one with us for our product candidate.

Strategic partnerships are complex and time-consuming to negotiate and document. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future strategic partners. Even if we are successful in entering into collaboration, the terms and conditions of that collaboration may restrict us from entering into future agreements with other potential collaborators.

If we are unable to reach agreements with suitable strategic partners on a timely basis, on acceptable terms, or at all, we may have to curtail the development of a product candidate, reduce or delay one or more of our other development programs, delay its potential commercialization or reduce the scope of any sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to fund and undertake development or commercialization activities on our own, we may need to obtain additional expertise and additional capital, which may not be available to us on acceptable terms or at all. If we fail to enter into strategic partnerships and do not have sufficient funds or expertise to undertake the necessary development and commercialization activities, we may not be able to further develop our product candidates or bring them to market or continue to develop our therapeutic platforms and our business may be materially and adversely affected. Any collaboration may be on terms that are not optimal for us, and we may not be able to maintain any new collaboration if, for example, development or approval of a product candidate is delayed, sales of an approved product candidate do not meet expectations or the partner terminates the collaboration. Any such collaboration, or other strategic transaction, may require us to incur non-recurring or other charges, and increase our near- and long-term expenditures and pose significant integration or implementation challenges or disrupt our management or business. Accordingly, although there can be no assurance that we will undertake or successfully complete any transactions of the nature described above, any transactions that we do complete may be subject to the foregoing or other risks and have a material and adverse effect on our business, financial condition, results of operations and prospects. Conversely, any failure to enter any collaboration or other strategic transaction that would be beneficial to us could delay the development and potential commercialization of our product candidates and have a negative impact on the competitiveness of any product candidate that reaches the market.

If we are unable to maintain future strategic partnerships, or if these strategic partnerships are not successful, our business could be adversely affected.

Any future strategic partnerships we enter into may pose a number of risks, including the following:

- we may not be able to enter into critical strategic partnerships or enter them on favorable terms;
- strategic partners have significant discretion in determining the effort and resources that they will apply to such a partnership, and they may not perform their obligations as agreed or expected;
- strategic partners may not pursue development and commercialization of any product candidates that achieve regulatory approval or may elect not to continue or renew development or commercialization programs based on clinical trial results, changes in the partners' strategic focus or available funding, or external factors, such as an acquisition, that divert resources or create competing priorities;
- strategic partners may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a product candidate, repeat or conduct new clinical trials or require a new formulation of a product candidate for clinical testing;
- strategic partners could independently develop, or develop with third parties, products that compete directly or indirectly with our product candidates if the strategic partners believe that competitive products are more likely to be successfully developed or can be commercialized under terms that are more economically attractive than our product candidates;
- product candidates discovered in collaboration with us may be viewed by our strategic partners as competitive with their own product candidates or products, which may cause strategic partners to cease to devote resources to the commercialization of our product candidates;
- a strategic partner with marketing and distribution rights to one or more of our product candidates that achieve regulatory approval may not commit sufficient resources to the marketing and distribution of such product candidates;
- disagreements with strategic partners, including disagreements over proprietary rights, contract interpretation or the preferred course of development, might cause delays or termination of the research, development or commercialization of product candidates, might lead to additional responsibilities for us with respect to product candidates, or might result in litigation or arbitration, any of which would be time-consuming and expensive;
- strategic partners may not properly maintain or defend our intellectual property rights or may use our proprietary information in such a way as to invite litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential litigation;
- strategic partners may infringe the intellectual property rights of third parties, which may expose us to litigation and potential liability; and
- strategic partnerships may be terminated for the convenience of the partner and, if terminated, we could be required to raise additional capital to pursue further development or commercialization of the applicable product candidates.

Risks Related to Our Intellectual Property

Our commercial success depends significantly on our ability to operate without infringing the patents and other proprietary rights of third parties.

Our success will depend in part on our ability to operate without infringing the proprietary rights of third parties. Other entities may have or obtain patents or proprietary rights that could limit our ability to make, use, sell, offer for sale or import our future approved products or impair our competitive position.

Our research, development and commercialization activities may be subject to claims that we infringe or otherwise violate patents or other intellectual property rights owned or controlled by third parties. We are aware of third party patents and patent applications containing claims directed to most of our areas of product development, which patents and applications could potentially be construed to cover our product candidates and the use thereof to treat cancer patients. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that we may be subject to claims of infringement of the patent rights of third parties. There is no assurance that there are not third-party patents or patent applications of which we are aware, but which we do not

believe are relevant to our business, which may, nonetheless, ultimately be found to limit our ability to make, use, sell, offer for sale or import our future approved products or impair our competitive position. Patents that we may ultimately be found to infringe could be issued to third parties. Third parties may have or obtain valid and enforceable patents or proprietary rights that could block us from developing product candidates using our technology. These patents may not expire before we receive marketing authorization for our product candidates, and they could delay the commercial launch of one or more future products. If our products were to be found to infringe any such patents, and we were unable to invalidate those patents, or if licenses for them are not available on commercially reasonable terms, or at all, our business, financial condition and results of operations could be materially harmed. Furthermore, even if a license is available, it may be non-exclusive, which could result in our competitors gaining access to the same intellectual property. Our failure to maintain a license to any technology that we require may also materially harm our business, financial condition and results of operations, and we would be exposed to a threat of litigation.

In the biotechnology industry, significant litigation and other proceedings regarding patents, patent applications, trademarks and other intellectual property rights have become commonplace both within and outside the United States including patent infringement lawsuits, oppositions, *inter partes* review (IPR) and post-grant review (PGR) proceedings before the United States Patent and Trademark Office (USPTO), or the applicable foreign patent counterpart. The types of situations in which we may become a party to such litigation or proceedings include:

- we may initiate litigation or other proceedings against third parties seeking to invalidate the patents held by those third parties, to obtain a judgment that our products or processes do not infringe those third parties' patents or to obtain a judgment that those parties' patents are unenforceable;
- if our competitors file patent applications that claim technology also claimed by us or our licensors, we or our licensors may be required to participate in derivation or opposition proceedings to determine the priority of invention, which could jeopardize our patent rights and potentially provide a third-party with a dominant patent position;
- if third parties initiate litigation claiming that our processes or products infringe their patent or other intellectual property rights or initiate other proceedings, including post-grant proceedings such as oppositions, IPRs or PGRRs, we will need to defend against such proceedings; and
- if a license to necessary technology is terminated, the licensor may initiate litigation claiming that our processes or products infringe or misappropriate their patent or other intellectual property rights and/or that we breached our obligations under the license agreement, and we would need to defend against such proceedings.

These lawsuits would be costly and could affect our results of operations and divert the attention of our management and scientific personnel. Some of our competitors may be able to sustain the cost of such litigation and proceedings more effectively than we can because of their substantially greater resources. There is a risk that a court would decide that we are infringing the third party's patents and would order us to stop the activities covered by the patents. In that event, we may not have a viable alternative to the technology protected by the patent and may need to halt work on the affected product candidate or cease commercialization of an approved product. In addition, there is a risk that a court will order us to pay third party damages or some other monetary award, depending upon the jurisdiction. An adverse outcome in any litigation or other proceeding could subject us to significant liabilities to third parties, potentially including treble damages and attorneys' fees if we are found to have willfully infringed, and we may be required to cease using the technology that is at issue or to license the technology from third parties. We may not be able to obtain any required licenses on commercially acceptable terms or at all. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation or administrative proceedings, there is a risk that some of our confidential information could be compromised by disclosure. In addition, any uncertainties resulting from the initiation and continuation of any litigation could have a material adverse effect on our ability to raise additional funds or on our business, results of operations, financial condition and prospects. Any of these outcomes could have a material adverse effect on our business.

If we are unable to obtain, maintain and enforce patent and trade secret protection for our product candidates and related technology, our business could be materially harmed.

Our strategy depends on our ability to identify, seek, obtain and maintain patent protection for our discoveries. As of August 31, 2019, our patent portfolio included four granted patents, two allowed applications, 127 pending

applications in active prosecution in 16 countries or regions, three pending Patent Cooperation Treaty (PCT) applications, and seven pending unpublished provisional applications. Our patent portfolio is relatively small compared to many large and more established pharmaceutical and biotechnology companies that have patent portfolios consisting of hundreds, and in some case even thousands, of granted patents. As our patent portfolio grows, we expect patent protection will continue to be an important part of our strategy. The patent protection process is expensive and time consuming, and we may not be able to file and prosecute all necessary or desirable patent applications, or maintain and enforce any patents that may issue from such patent applications, at a reasonable cost or in a timely manner or in all jurisdictions where protection may be commercially advantageous. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. Moreover, in some circumstances, we may not have the right to control the preparation, filing and prosecution of patent applications, or to maintain the patents, covering technology that we have licensed from third parties. Therefore, our owned or in-licensed patents and patent applications may not be prosecuted and enforced in a manner consistent with the best interests of our business. Our patent applications cannot be enforced against third parties practicing the technology claimed in such applications unless, and until, patents issues from such applications, and then only to the extent the issued claims cover the technology. The patent applications that we own or in-license may fail to result in issued patents with claims that cover our current and future product candidates in the United States or in other foreign countries or that effectively prevent third parties from commercializing competitive product candidates.

Moreover, the patent position of biotechnology companies generally is highly uncertain, involves complex legal and factual questions and has in recent years been the subject of much litigation. We may be subject to a third-party preissuance submission of prior art to the USPTO or foreign jurisdiction, and such prior art may affect the scope of any claims we ultimately get allowed or it may prevent our patent applications from issuing as patents. Further, the issuance of a patent does not ensure that it is valid or enforceable, nor is the issuance conclusive as to inventorship or the scope of any claims. Third parties may challenge the validity, enforceability or scope of our issued patents or claim that they should be inventors on such patents, and such patents may be narrowed, invalidated, circumvented, or deemed unenforceable and such third parties may gain rights to such patents. We could also become involved in reexamination, *inter partes* review, post-grant review, opposition or derivation proceedings, challenging our patent rights or the patent rights of others. In addition, changes in law may introduce uncertainty in the enforceability or scope of patents owned by biotechnology companies. If, our patents are narrowed, invalidated or held unenforceable, third parties may be able to commercialize our technology or products and compete directly with us without payment to us. There is no assurance that all potentially relevant prior art relating to our patents and patent applications has been found, and such prior art could potentially invalidate one or more of our patents or prevent a patent from issuing from one or more of our pending patent applications. There is also no assurance that there is not prior art of which we are aware, but which we do not believe affects the validity or enforceability of a claim in our patents and patent applications, which may, nonetheless, ultimately be found to affect the validity or enforceability of a claim. Furthermore, even if our patents are unchallenged, they may not adequately protect our intellectual property, provide exclusivity for our product candidates, prevent others from designing around our claims or provide us with a competitive advantage. The legal systems of certain countries do not favor the aggressive enforcement of patents, and the laws of foreign countries may not allow us to protect our inventions with patents to the same extent as the laws of the United States. Because patent applications in the United States and many foreign jurisdictions are typically not published until 18 months after filing, or in some cases not at all, and because publications of discoveries in scientific literature lag behind actual discoveries, we cannot be certain that we were the first to make the inventions claimed in our issued patents or pending patent applications, or that we were the first to file for protection of the inventions set forth in our patents or patent applications. As a result, we may not be able to obtain or maintain protection for certain inventions. Therefore, the issuance, validity, enforceability, scope and commercial value of our patents in the United States and in foreign countries cannot be predicted with certainty and, as a result, any patents that we own or license may not provide sufficient protection against competitors. We may not be able to obtain or maintain patent protection from our pending patent applications, from those we may file in the future, or from those we may license from third parties. Moreover, even if we are able to obtain patent protection, such patent protection may be of insufficient scope to achieve our business objectives. In addition, the issuance of a patent does not give us the right to practice the patented invention. Third parties may have blocking patents that could prevent us from marketing our own patented product and practicing our own patented technology.

Our patents covering one or more of our products or product candidates could be found invalid or unenforceable if challenged.

Any of our intellectual property rights could be challenged or invalidated despite measures we take to obtain patent and other intellectual property protection with respect to our product candidates and proprietary technology. For example, if we were to initiate legal proceedings against a third party to enforce a patent covering one of our product candidates, the defendant could counterclaim that our patent is invalid and/or unenforceable. In patent litigation in the United States and in some other jurisdictions, defendant counterclaims alleging invalidity and/or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, for example, lack of novelty, obviousness or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld material information from the USPTO, or the applicable foreign counterpart, or made a misleading statement, during prosecution. A litigant or the USPTO itself could challenge our patents on this basis even if we believe that we have conducted our patent prosecution in accordance with the duty of candor and in good faith. The outcome following such a challenge is unpredictable.

With respect to challenges to the validity of our patents, for example, there might be invalidating prior art, of which we and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on a product candidate. Even if a defendant does not prevail on a legal assertion of invalidity and/or unenforceability, our patent claims may be construed in a manner that would limit our ability to enforce such claims against the defendant and others. The cost of defending such a challenge, particularly in a foreign jurisdiction, and any resulting loss of patent protection could have a material adverse impact on one or more of our product candidates and our business.

Enforcing our intellectual property rights against third parties may also cause such third parties to file other counterclaims against us, which could be costly to defend, particularly in a foreign jurisdiction, and could require us to pay substantial damages, cease the sale of certain products or enter into a license agreement and pay royalties (which may not be possible on commercially reasonable terms or at all). Any efforts to enforce our intellectual property rights are also likely to be costly and may divert the efforts of our scientific and management personnel.

Our intellectual property rights will not necessarily provide us with competitive advantages.

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations, and may not adequately protect our business, or permit us to maintain our competitive advantage. The following examples are illustrative:

- others may be able to make compounds that are similar to our product candidates but that are not covered by the claims of the patents that we own or have exclusively licensed;
- others may independently develop similar or alternative technologies without infringing our intellectual property rights;
- issued patents that we own or have exclusively licensed may not provide us with any competitive advantages, or may be held invalid or unenforceable, as a result of legal challenges by our competitors;
- we may obtain patents for certain compounds many years before we obtain marketing approval for products containing such compounds, and because patents have a limited life, which may begin to run prior to the commercial sale of the related product, the commercial value of our patents may be limited;
- our competitors might conduct research and development activities in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- we may fail to develop additional proprietary technologies that are patentable;
- the laws of certain foreign countries may not protect our intellectual property rights to the same extent as the laws of the United States, or we may fail to apply for or obtain adequate intellectual property protection in all the jurisdictions in which we operate; and
- the patents of others may have an adverse effect on our business, for example by preventing us from marketing one or more of our product candidates for one or more indications.

Any of the aforementioned threats to our competitive advantage could have a material adverse effect on our business.

We may become involved in lawsuits to protect or enforce our patents and trade secrets, which could be expensive, time consuming and unsuccessful.

Third parties may seek to market biosimilar versions of any approved products. Alternatively, third parties may seek approval to market their own products similar to or otherwise competitive with our product candidates. In these circumstances, we may need to defend or assert our patents, including by filing lawsuits alleging patent infringement. If we were to initiate legal proceedings against a third party to enforce a patent covering our product candidates, the defendant could counterclaim that the patent covering our product candidate is invalid and/or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity and/or unenforceability are commonplace. Grounds for an invalidity challenge could be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness, written description or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO, or made a misleading statement, during prosecution. The outcome following legal assertions of invalidity and unenforceability is unpredictable. In any of these types of proceedings, a court or agency with jurisdiction may find our patents invalid or unenforceable. Even if we have valid and enforceable patents, these patents still may not provide protection against competing products or processes sufficient to achieve our business objectives.

Even after they have issued, our patents and any patents that we license may be challenged, narrowed, invalidated or circumvented. If our patents are invalidated or otherwise limited or will expire prior to the commercialization of our product candidates, other companies may be better able to develop products that compete with ours, which could adversely affect our competitive business position, business prospects and financial condition. In addition, if the breadth or strength of protection provided by our patents and patent applications is threatened, it could dissuade companies from collaborating with us to license, develop or commercialize current or future product candidates.

The following are examples of litigation and other adversarial proceedings or disputes that we could become a party to involving our patents or patents licensed to us:

- we may initiate litigation or other proceedings against third parties to enforce our patent and trade secret rights;
- third parties may initiate litigation or other proceedings seeking to invalidate patents owned by or licensed to us or to obtain a declaratory judgment that their product or technology does not infringe our patents or patents licensed to us;
- third parties may initiate opposition, IPR or PGR proceedings challenging the validity or scope of our patent rights, requiring us and/or licensors to participate in such proceedings to defend the validity and scope of our patents;
- there may be a challenge or dispute regarding inventorship or ownership of patents or trade secrets currently identified as being owned by or licensed to us; or
- third parties may seek approval to market biosimilar versions of our future approved products prior to expiration of relevant patents owned by or licensed to us under the Biologics Price Competition and Innovation Act of 2009, requiring us to defend our patents, including by filing lawsuits alleging patent infringement.

These lawsuits and proceedings would be costly and could affect our results of operations and divert the attention of our managerial and scientific personnel. Adversaries in these proceedings may have the ability to dedicate substantially greater resources to prosecuting these legal actions than we or our licensors can. There is a risk that a court or administrative body would decide that our patents are invalid or not infringed or trade secrets not misappropriated by a third party's activities, or that the scope of certain issued claims must be further limited. An adverse outcome in a litigation or proceeding involving our own patents or trade secrets could limit our ability to assert our patents or trade secrets against these or other competitors, affect our ability to receive royalties or other licensing consideration from our licensees, and may curtail or preclude our ability to exclude third parties from making, using and selling similar or competitive products. Any of these occurrences could adversely affect our competitive business position, business prospects and financial condition.

We may not be able to prevent, alone or with our licensors, infringement or misappropriation of our intellectual property rights, particularly in countries where the laws may not protect those rights as fully as in the United States. Any litigation or other proceedings to enforce our intellectual property rights may fail, and even if successful, may result in substantial costs and distract our management and other employees.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. There could also be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have an adverse effect on the price of our common stock.

The degree of future protection for our proprietary rights is uncertain because legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep our competitive advantage. For example:

- others may be able to develop a platform that is similar to, or better than, ours in a way that is not covered by the claims of our patents;
- others may be able to make compounds that are similar to our product candidates but that are not covered by the claims of our patents;
- we might not have been the first to make the inventions covered by patents or pending patent applications;
- we might not have been the first to file patent applications for these inventions;
- any patents that we obtain may not provide us with any competitive advantages or may ultimately be found invalid or unenforceable; or
- we may not develop additional proprietary technologies that are patentable or that afford meaningful trade secret protection.

Patent terms may be inadequate to protect our competitive position on our product candidates for an adequate amount of time.

Patents have a limited lifespan. In the United States, if all maintenance fees are timely paid, the natural expiration of a patent is generally 20 years from its earliest U.S. non-provisional filing date. Various extensions may be available, but the life of a patent, and the protection it affords, is limited. Even if patents covering our product candidates are obtained, once the patent life has expired, we may be open to competition from competitive products, including biosimilars. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. As a result, our owned and licensed patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours.

If we do not obtain protection under the Hatch-Waxman amendments and similar foreign legislation for extending the term of patents covering each of our product candidates, our business may be materially harmed.

Depending upon the timing, duration and conditions of FDA marketing approval of our product candidates, one or more of our U.S. patents may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984, referred to as the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent term extension of up to five years for a patent covering an approved product as compensation for effective patent term lost during product development and the FDA regulatory review process. The Hatch-Waxman Act allows a maximum of one patent to be extended per FDA approved product as compensation for the patent term lost during the FDA regulatory review process. A patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval and only those claims covering such approved drug product, a method for using it or a method for manufacturing it may be extended. Patent term extension also may be available in certain foreign countries upon regulatory approval of our product candidates. However, we may not receive an extension if we fail to apply within applicable deadlines, fail to apply prior to expiration of relevant patents or otherwise fail to satisfy applicable requirements. Moreover, the length of the extension could be less than we request. If we are unable to obtain patent term extension or the term of any such extension is less than we request, the period during which we can enforce our patent rights for that product will be shortened and our competitors may obtain approval to market competing products sooner. As a result, our revenue

from applicable products could be reduced, possibly materially. Further, if this occurs, our competitors may take advantage of our investment in development and trials by referencing our clinical and preclinical data and launch their product earlier than might otherwise be the case.

If we are unable to protect the confidentiality of our trade secrets and proprietary information, the value of our technology and products could be adversely affected.

In addition to patent protection, we also rely on other proprietary rights, including protection of trade secrets, and other proprietary information. For example, we treat our proprietary computational technologies, including unpatented know-how and other proprietary information, as trade secrets. Trade secrets and know-how can be difficult to protect. Trade secrets and know-how can also in some instances be independently derived or reverse-engineered by a third party. We maintain the confidentiality of trade secrets and proprietary information, in part by entering into confidentiality agreements with our employees, consultants, strategic partners and others upon the commencement of their relationships with us. These agreements require that all confidential information developed by the individual or made known to the individual by us during the course of the individual's relationship with us be kept confidential and not disclosed to third parties. Our agreements with employees and our personnel policies also provide that any inventions conceived by the individual in the course of rendering services to us shall be our exclusive property. However, we may not obtain these agreements in all circumstances, and even when we obtain these agreements, individuals with whom we have these agreements may not comply with their terms. Any of the parties to these agreements may breach such agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. In the event of unauthorized use or disclosure of our trade secrets or proprietary information, these agreements, even if obtained, may not provide meaningful protection, particularly for our trade secrets or other confidential information. We may also become involved in inventorship disputes relating to inventions and patents developed by our employees or consultants under such agreements. To the extent that our employees, consultants or contractors use technology or know-how owned by third parties in their work for us, disputes may arise between us and those third parties as to the rights in related inventions. To the extent that an individual who is not obligated to assign rights in intellectual property to us is rightfully an inventor of intellectual property, we may need to obtain an assignment or a license to that intellectual property from that individual, or a third party or from that individual's assignee. Such assignment or license may not be available on commercially reasonable terms or at all.

Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time-consuming and the outcome is unpredictable. In addition, some courts in the United States and certain foreign jurisdictions are less willing or unwilling to protect trade secrets. The disclosure of our trade secrets would impair our competitive position and may materially harm our business, financial condition and results of operations. Costly and time consuming litigation could be necessary to enforce and determine the scope of our proprietary rights, and failure to maintain trade secret protection could adversely affect our competitive business position. In addition, if any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent such third party, or those to whom they communicate such technology or information, from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor, or if we otherwise lose protection for our trade secrets or proprietary know-how, the value of this information may be greatly reduced and our business and competitive position could be harmed. Adequate remedies may not exist in the event of unauthorized use or disclosure of our proprietary information.

We may be subject to claims that we or our employees or consultants have wrongfully used or disclosed alleged trade secrets or other proprietary information of our employees' or consultants' former employers or their clients.

We employ individuals who were previously or concurrently employed at research institutions and/or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. We may be subject to claims that these employees, or we, have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers, or that patents and applications we have filed to protect inventions of these employees, even those related to one or more of our product candidates, are rightfully owned by their former or concurrent employer. Litigation may be necessary to defend against these claims. If we fail in defending such claims, in addition to paying monetary damages, trade secrets or other proprietary information could be awarded to a third party, and we could be required to obtain a license from such third party to commercialize our technology or products. Such license may not be available on commercially reasonable terms or at all. A loss of key research

personnel or their work product could limit our ability to commercialize, or prevent us from commercializing, our current or future technologies or product candidates, which could materially harm our business. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to management.

Obtaining and maintaining our patent protection depends on compliance with various procedural, documentary, fee payment and other requirements imposed by regulations and governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents or applications will be due to the USPTO and various foreign patent offices at various points over the lifetime of our patents or applications. We have systems in place to remind us to pay these fees, and we rely on our outside patent annuity service to pay these fees automatically when due, but we must notify the provider of any new patents or applications. Additionally, the USPTO and various foreign patent offices require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. We employ reputable law firms and other professionals to help us comply, and in many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with rules applicable to the particular jurisdiction. However, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. If such an event were to occur, it could have a material adverse effect on our business.

We may be subject to claims challenging the inventorship of our patents and other intellectual property.

Although we are not currently experiencing any claims challenging the inventorship or ownership of our patents, we may in the future be subject to claims that former employees, strategic partners or other third parties have an interest in our patents or other intellectual property as an inventor or co-inventor. While it is our policy to require our employees and contractors who may be involved in the conception or development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who, in fact, conceives or develops intellectual property that we regard as our own. For example, the assignment of intellectual property rights may not be self-executing or the assignment agreements may be breached, or we may have inventorship disputes arise from conflicting obligations of consultants or others who are involved in developing our product candidates. Litigation may be necessary to defend against these and other claims challenging inventorship. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, valuable intellectual property. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

Patent protection and patent prosecution for some of our product candidates may be dependent on, and the ability to assert patents and defend them against claims of invalidity may be maintained by, third parties.

There may be times in the future when certain patents that relate to our product candidates or any approved products are controlled by our licensees or licensors. Although we may, under such arrangements, have rights to consult with our strategic partners on actions taken as well as back-up rights of prosecution and enforcement, we have in the past and may in the future relinquish rights to prosecute and maintain patents and patent applications within our portfolio as well as the ability to assert such patents against infringers.

If any current or future licensee or licensor with rights to prosecute, assert or defend patents related to our product candidates fails to appropriately prosecute and maintain patent protection for patents covering any of our product candidates, or if patents covering any of our product candidates are asserted against infringers or defended against claims of invalidity or unenforceability in a manner which adversely affects such coverage, our ability to develop and commercialize any such product candidate may be adversely affected and we may not be able to prevent competitors from making, using and selling competing products.

Changes in patent laws or patent jurisprudence could diminish the value of patents in general, thereby impairing our ability to protect our product candidates.

The patent positions of pharmaceutical and biotechnology companies can be highly uncertain and involve complex legal and factual questions for which important legal principles remain unresolved. Changes in either the patent laws or in the interpretations of patent laws in the United States and other countries may diminish the value of our intellectual property. We cannot predict the breadth of claims that may be allowed or found to be enforceable in our

patents or in third-party patents. The United States has enacted and is currently implementing wide-ranging patent reform legislation. Further, recent U.S. Supreme Court rulings have either narrowed the scope of patent protection available in certain circumstances or weakened the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the validity, scope and value of patents, once obtained.

For our U.S. patent applications containing a priority claim after March 16, 2013, there is a greater level of uncertainty in the patent law. In September 2011, the Leahy-Smith America Invents Act, also known as the America Invents Act (AIA), was signed into law. The AIA includes a number of significant changes to U.S. patent law, including provisions that affect the way patent applications will be prosecuted and may also affect patent litigation. The AIA and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have an adverse effect on our business. An important change introduced by the AIA is that, as of March 16, 2013, the United States transitioned to a “first-to-file” system for deciding which party should be granted a patent when two or more patent applications are filed by different parties disclosing or claiming the same invention. A third party that has filed, or does file a patent application in the USPTO after March 16, 2013 but before us, could be awarded a patent covering a given invention, even if we had made the invention before it was made by the third party. This requires us to be cognizant going forward of the time from invention to filing of a patent application.

Among some of the other changes introduced by the AIA are changes that limit where a patentee may file a patent infringement suit and providing opportunities for third parties to file third party submissions of prior art to the USPTO during patent prosecution and to challenge any issued patent in the USPTO (*e.g.*, via post-grant reviews or *inter partes* reviews). This applies to all of our U.S. patents, even those issued before March 16, 2013. Because of a lower evidentiary standard in USPTO proceedings compared to the evidentiary standard in United States federal court necessary to invalidate a patent claim, a third party could potentially provide evidence in a USPTO proceeding sufficient for the USPTO to hold a claim invalid even though the same evidence would be insufficient to invalidate the claim if first presented in a district court action. Accordingly, a third party may attempt to use the USPTO procedures to invalidate our patent claims that would not have been invalidated if first challenged by the third party as a defendant in a district court action.

Depending on decisions by the U.S. Congress, the U.S. federal courts, the USPTO or similar authorities in foreign jurisdictions, the laws and regulations governing patents could change in unpredictable ways that may weaken our and our licensors’ ability to obtain new patents or to enforce existing patents we and our licensors or partners may obtain in the future.

We may not be able to protect our intellectual property rights throughout the world.

Filing, prosecuting and defending patents on product candidates in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States can be less extensive than those in the United States. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and further, may export otherwise infringing products to territories where we have patent protection, but enforcement is not as strong as that in the United States. These products may compete with our current or future products, if any, and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing. Recent United States Supreme Court cases have narrowed the scope of what is considered patentable subject matter, for example, in the areas of software and diagnostic methods involving the association between treatment outcome and biomarkers. This could impact our ability to patent certain aspects of our technology in the United States.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets and other intellectual property protection, particularly those relating to biotechnology products, which could make it difficult for us to stop the infringement of our patents or marketing of

competing products in violation of our proprietary rights generally. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

Additionally, the requirements for patentability may differ in certain countries, particularly developing countries. For example, unlike other countries, China has a heightened requirement for patentability, and specifically requires a detailed description of medical uses of a claimed drug. In India, unlike the United States, there is no link between regulatory approval of a drug and its patent status, and patenting of medical uses of a claimed drug are prohibited. In addition to India, certain countries in Europe and developing countries, including China, have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In those countries, we and our licensors may have limited remedies if patents are infringed or if we or our licensors are compelled to grant a license to a third party, which could materially diminish the value of those patents. This could limit our potential revenue opportunities. Accordingly, our efforts to enforce intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we own or license.

We will need to obtain FDA approval for any proposed product candidate names, and any failure or delay associated with such approval may adversely affect our business.

Any proprietary name or trademark we intend to use for our product candidates will require approval from the FDA regardless of whether we have secured a formal trademark registration from the USPTO. The FDA typically conducts a review of proposed product candidate names, including an evaluation of the potential for confusion with other product names and potential pharmacy dispensing errors. The FDA may also object to a product name if it believes the name inappropriately implies certain medical claims or contributes to an overstatement of efficacy. If the FDA objects to any product candidate names we propose, we may be required to adopt an alternative name for our product candidates. If we adopt an alternative name, we would lose the benefit of any existing trademark applications for such product candidate and may be required to expend significant additional resources in an effort to identify a suitable product name that would qualify under applicable trademark laws, not infringe the existing rights of third parties and be acceptable to the FDA. We may be unable to build a successful brand identity for a new trademark in a timely manner or at all, which would limit our ability to commercialize our product candidates.

Some of our discovery programs include antibodies that are licensed from third parties pursuant to limited research licenses. If we decide to further develop or commercialize these discovery programs as future product candidates, we may need to exercise our option to enter into a commercial license with one or more of these third parties. If we are unable to successfully enter into those commercial licenses or if we breach the terms of our existing research licenses or future commercial licenses, we would not have the ability to continue the development and potential commercialization of such discovery programs.

We have in-licensed certain antibodies for our discovery programs from third parties. Under these license agreements, we are able to research and initially develop discovery programs and are required to make certain annual payments. We also have the option to negotiate or enter into commercial license agreements with these third parties if we elect to continue development or commercialization of any product candidates incorporating the in-licensed antibodies. If we exercise our option to negotiate or enter into any commercial licenses with these third parties, we will likely be subject to various additional obligations, which may include obligations with respect to funding, development and commercialization activities, and payment obligations upon achievement of certain milestones and royalties on product sales. If any of our existing antibody research licenses or future commercial licenses are terminated or breached, we may:

- lose our rights or options to research, develop or commercialize certain of our future product candidates;
- not be able to secure patent or trade secret protection for certain of our future product candidates;
- experience significant delays in the development or commercialization of certain of our future product candidates;

- not be able to obtain other licenses that may allow us to continue to progress the applicable programs on acceptable terms, if at all; or
- incur liability for damages.

Additionally, even if not terminated or breached, our intellectual property licenses may be subject to disagreements over contract interpretation which could narrow the scope of our rights to the relevant intellectual property or technology or increase our financial or other obligations. If we experience any of the foregoing, it could have a materially adverse effect on our business.

Risks Related to Our Common Stock and this Offering

Our share price is likely to be volatile and the market price of our common stock after this offering may drop below the price you pay.

You should consider an investment in our common stock as risky and invest only if you can withstand a significant loss and wide fluctuations in the market value of your investment. You may be unable to sell your common stock at or above the initial public offering price due to fluctuations in the market price of our common stock arising from changes in our operating performance or prospects. In addition, the stock market has recently experienced significant volatility, particularly with respect to pharmaceutical, biotechnology and other life sciences company stocks. The volatility of pharmaceutical, biotechnology and other life sciences company stocks often does not relate to the operating performance of the companies represented by the stock. Some of the factors that may cause the market price of our common stock to fluctuate or decrease below the price paid in this offering include:

- results and timing of our preclinical studies and clinical trials and studies and trials of our competitors' products;
- failure or discontinuation of any of our development programs;
- issues in manufacturing our product candidates or future approved products;
- regulatory developments or enforcement in the United States and foreign countries with respect to our product candidates or our competitors' products;
- competition from existing products or new products that may emerge;
- actual or anticipated changes in our growth rate relative to our competitors;
- developments or disputes concerning patents or other proprietary rights;
- introduction of technological innovations or new commercial products by us or our competitors;
- announcements by us, our strategic partners or our competitors of significant acquisitions, strategic partnerships, joint ventures, or capital commitments;
- actual or anticipated changes in estimates or recommendations by securities analysts, if any cover our common stock;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- public concern over our product candidates or any future approved products;
- litigation;
- future sales of our common stock by us, our insiders or our other stockholders;
- expiration of market stand-off or lock-up agreements;
- share price and volume fluctuations attributable to inconsistent trading volume levels of our shares;
- additions or departures of key personnel;
- changes in the structure of health care payment systems in the United States or overseas;
- failure of any of our product candidates, if approved, to achieve commercial success;
- economic and other external factors or other disasters or crises;
- period-to-period fluctuations in our financial condition and results of operations, including the timing of receipt of any milestone or other payments under commercialization or licensing agreements;
- announcements or expectations of additional financing efforts;
- general market conditions and market conditions for biotechnology stocks;
- overall fluctuations in U.S. equity markets; and
- other factors that may be unanticipated or out of our control.

In addition, in the past, when the market price of a stock has been volatile, holders of that stock have instituted securities class action litigation against the company that issued the stock. If any of our stockholders brought a lawsuit against us, we could incur substantial costs defending the lawsuit and divert the time and attention of our management, which could seriously harm our business.

An active, liquid and orderly trading market for our common stock may not develop or be sustained. As a result, it may be difficult for you to sell your shares of our common stock.

There is currently no public market for our common stock. An active trading market for our shares may not develop or be sustained. If an active market for our common stock does not continue, it may be difficult for our stockholders to sell their shares without depressing the market price for the shares or sell their shares at or above the prices at which they acquired their shares or sell their shares at the time they would like to sell. The initial public offering price of our common stock will be determined through negotiations between us and the underwriters. The initial public offering price may not be indicative of the market price of our common stock after the offering, and the market value of our common stock may decrease from the initial public offering price. Any inactive trading market for our common stock may also impair our ability to raise capital to continue to fund our operations by selling shares and may impair our ability to acquire other companies or technologies by using our shares as consideration.

We are controlled by Haldor Topsøe Holding A/S and a concentrated group of stockholders, whose interests in our business may conflict with yours.

Upon completion of this offering, Haldor Topsøe Holding A/S (HTH), together with other holders of 5% or more of our outstanding capital stock and their respective affiliates, will beneficially own approximately 15,470,658 shares, or 60.0%, of our outstanding capital stock (of which 9,039,453 shares, or 35.1%, will be voting common stock). Certain of our directors and existing stockholders, including certain stockholders affiliated with our directors and that beneficially own more than 5% of our outstanding capital stock, have indicated an interest in purchasing an aggregate of $50.0 million or more in shares of our common stock in this offering at the initial public offering price and on the same terms as the other purchasers in the offering. If such directors and stockholders were to purchase such $50.0 million in shares in this offering, HTH and other holders of 5% or more of our outstanding capital stock and their respective affiliates, will beneficially own approximately 72.2% of our outstanding capital stock (of which 47.2% will be voting common stock) upon the completion of this offering. The previously discussed ownership percentages upon completion of this offering assume an initial public offering price of $16.00 per share, the midpoint of the estimated price range set forth on the cover page of this prospectus, no exercise of the underwriters' option to purchase additional shares and no exercise of outstanding options. Accordingly, our principal stockholders will be able to control most matters requiring stockholder approval, including the election of directors and approval of significant corporate transactions, including mergers and sales of all or substantially all of our assets. The interests of these principal stockholders may not always coincide with your interests or the interests of other stockholders and they may act in a manner that advances their best interests and not necessarily those of other stockholders. For example, our concentration of ownership could have the effect of delaying or preventing a change in control or otherwise discouraging a potential acquirer from attempting to obtain control of us, which in turn could cause the market price of our common stock to decline or prevent our stockholders from realizing a premium over the market price for their shares of our common stock.

In addition, pursuant to nominating agreements entered into between us and each of (i) HTH, (ii) Baker Brothers Life Sciences L.P. and 667, L.P. (together, Baker Brothers) and (iii) Redmile Biopharma Investments II, L.P., RAF, L.P. and Redmile Strategic Master Fund, LP (together, Redmile), for up to 12 years following the completion of this offering, so long as HTH, Baker Brothers and Redmile, together with their respective affiliates, each beneficially own certain specified amounts of our capital stock, we will have the obligation to support the nomination of, and to cause our board of directors to include in the slate of nominees recommended to our stockholders for election, (i) two individuals designated by HTH, (ii) one individual designated by Baker Brothers and (iii) one individual designated by Redmile, subject to certain customary conditions and exceptions. For more information regarding the nominating agreements, see the section titled "Management—Board Composition." Each of HTH, Baker Brothers and Redmile, and their respective affiliates, may therefore have influence over management and control over matters requiring stockholder approval, including the annual election of directors and significant corporate transactions following the completion of this offering.

The dual class structure of our common stock may limit your ability to influence corporate matters and may limit your visibility with respect to certain transactions.

The dual class structure of our common stock may also limit your ability to influence corporate matters. Holders of our common stock are entitled to one vote per share, while holders of our non-voting common stock are not entitled to any votes. Nonetheless, each share of our non-voting common stock may be converted at any time into one share of our common stock at the option of its holder by providing written notice to us, subject to the limitations provided for in our amended and restated certificate of incorporation to become effective upon the completion of this offering. Consequently, if holders of our non-voting common stock following this offering exercise their option to make this conversion, this will have the effect of increasing the relative voting power of those prior holders of our non-voting common stock, and correspondingly decreasing the voting power of the holders of our common stock, which may limit your ability to influence corporate matters. Additionally, stockholders who hold, in the aggregate, more than 10% of our common stock and non-voting common stock, but 10% or less of our common stock, and are not otherwise a Company insider, may not be required to report changes in their ownership due to transactions in our non-voting common stock pursuant to Section 16(a) of the Securities Exchange Act of 1934, as amended (the Exchange Act), and may not be subject to the short-swing profit provisions of Section 16(b) of the Exchange Act.

A significant portion of our total outstanding common stock is restricted from immediate resale but may be sold into the market in the near future. This could cause the market price of our common stock to drop significantly, even if our business is doing well.

Sales of a substantial number of our common stock in the public market could occur in the future. These sales, or the perception in the market that the holders of a large number of common stock intend to sell shares, could reduce the market price of our common stock and could impair our ability to raise additional capital through the sale of equity securities in the future. Immediately after completing this offering, we will have 25,766,945 outstanding shares of common stock and non-voting common stock based on the number of shares outstanding as of June 30, 2019 (including convertible preferred stock on an as-converted basis as well as 3,026,449 shares of our Series C convertible preferred stock issued after June 30, 2019 and 116,518 shares of restricted common stock subject to forfeiture, and assuming no exercise of the underwriters' option to purchase additional shares). This figure includes the shares sold in this offering, which are eligible to be resold in the public market immediately and the remaining 17,954,445 shares that are currently restricted under securities laws or as a result of lock-up agreements but will be able to be resold as described in the "Shares Eligible for Future Sale" section of this prospectus. Moreover, holders of an aggregate of 17,494,123 shares of common stock (including common stock issuable upon conversion of our non-voting common stock) have rights, subject to certain conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders. Certain of the holders of such registration right may not elect to sell any shares in this offering and therefore those holders could require us to file additional registration statements covering their shares in the future. We also intend to file a registration statement on Form S-8 to register all common stock that we may issue under our stock option plan, and, they therefore can be freely sold in the public market upon issuance and once vested, subject to the lock-up agreements described in the section titled "Underwriting."

Our executive officers, directors and the holders of substantially all of our capital stock and securities convertible into or exchangeable for our capital stock have entered into market stand-off agreements with us and lock-up agreements with the underwriters under which they have agreed, subject to specific exceptions described in the section titled "Underwriting," not to sell, directly or indirectly, any shares of common stock without the permission of the underwriters for a period of 180 days following the date of this prospectus. We refer to such period as the lock-up period. When the lock-up period expires, we and our securityholders subject to a lock-up agreement or market stand-off agreement will be able to sell our shares in the public market. In addition, the representatives of the underwriters may, in their sole discretion, release all or some portion of the shares subject to lock-up agreements at any time and for any reason. See the section titled "Shares Eligible for Future Sale" for more information. Sales of a substantial number of such shares upon expiration of the lock-up and market stand-off agreements, the perception that such sales may occur, or early release of these agreements, could cause our market price to fall or make it more difficult for you to sell your common stock at a time and price that you deem appropriate. Even if a substantial number of sales of our common stock does not occur, the mere perception of the possibility of these sales could depress the market price of our common stock and have a negative effect on our ability to raise capital in the future.

If securities or industry analysts do not publish research or publish inaccurate or unfavorable research about our business, our share price and trading volume could decline.

The trading market for our common stock will depend on the research and reports that securities or industry analysts publish about us or our business. We do not have any control over these analysts. We cannot assure you that analysts will cover us or provide favorable coverage. If no or few securities or industry analysts commence coverage of us, the trading price for our stock would be negatively impacted. If one or more of the analysts who cover us downgrade our stock or change their opinion of our common stock, our share price would likely decline. If one or more of these analysts cease coverage of our company or fail to regularly publish reports on us, we could lose visibility in the financial markets, which could cause our share price or trading volume to decline.

Participation in this offering by certain of our directors and existing stockholders would reduce the available public float of our shares.

Certain of our directors and existing stockholders, including stockholders affiliated with our directors and who own 5% or more of our outstanding capital stock, have indicated an interest in purchasing an aggregate of $50.0 million or more in shares of our common stock in this offering at the initial public offering price. However, because indications of interest are not binding agreements or commitments to purchase, the underwriters may determine to sell more, fewer or no shares in this offering to any of these directors or stockholders, or any of these directors or stockholders may determine to purchase more, fewer or no shares in this offering. To the extent these directors and existing stockholders purchase any shares in this offering, such purchase could reduce the available public float of our shares because such directors and stockholders may be restricted from selling the shares by restrictions under applicable securities laws. As a result, any purchase of shares by such directors and stockholders in this offering may reduce the liquidity of our common stock relative to what it would have been had these shares been purchased by investors that were not directors or existing stockholders.

If we fail to maintain an effective system of internal control over financial reporting, we may not be able to accurately report our financial results or prevent fraud. As a result, stockholders could lose confidence in our financial and other public reporting, which would harm our business and the trading price of our common stock.

Effective internal controls over financial reporting are necessary for us to provide reliable financial reports and, together with adequate disclosure controls and procedures, are designed to prevent fraud. Any failure to implement required new or improved controls, or difficulties encountered in their implementation, could cause us to fail to meet our reporting obligations. In addition, any testing by us conducted in connection with Section 404 of the Sarbanes-Oxley Act of 2002 (the Sarbanes-Oxley Act) or any subsequent testing by our independent registered public accounting firm, may reveal deficiencies in our internal controls over financial reporting that are deemed to be significant deficiencies or material weaknesses or that may require prospective or retroactive changes to our financial statements or identify other areas for further attention or improvement. We have identified deficiencies in the past which we have taken steps to address. However, our efforts to remediate previous deficiencies may not be effective or prevent any future deficiency in our internal control over financial reporting. Inferior internal controls could also cause investors to lose confidence in our reported financial information, which could have a negative effect on the trading price of our common stock.

In connection with our evaluation of our internal controls over financial reporting, we expect to upgrade our finance and accounting systems. If we are unable to accomplish these objectives in a timely and effective manner, our ability to comply with the financial reporting requirements and other rules that apply to reporting companies could be adversely impacted. Any failure to maintain effective internal control over financial reporting could have a material adverse effect on our business, financial condition and results of operations and the trading price of our common stock.

We will be required to disclose material changes made in our internal controls and procedures on a quarterly basis and our management will be required to assess the effectiveness of these controls annually. Beginning with our second annual report on Form 10-K after we become a public company, we will be required to make a formal assessment of the effectiveness of our internal control over financial reporting, and once we cease to be an emerging growth company, we will be required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. However, for as long as we are an “emerging growth company” under the Jumpstart Our Business Startups Act of 2012 (the JOBS Act), our independent registered public accounting firm will not be required to attest to the effectiveness of our internal controls over financial reporting pursuant to Section 404.

To achieve compliance with Section 404 within the prescribed period, we will be engaging in a process to document and evaluate our internal control over financial reporting, which is both costly and challenging. In this regard, we will need to continue to dedicate internal resources, potentially engage outside consultants and adopt a detailed work plan to assess and document the adequacy of our internal control over financial reporting, continue steps to improve control processes as appropriate, validate through testing that controls are designed and operating effectively, and implement a continuous reporting and improvement process for internal control over financial reporting.

We could be an "emerging growth company" for up to five years. An independent assessment of the effectiveness of our internal controls could detect problems that our management's assessment might not. In addition, our management and independent registered public accounting firm did not perform an evaluation of our internal control over financial reporting as of December 31, 2017 or December 31, 2018 in accordance with the provisions of the Sarbanes-Oxley Act. Had we and our independent registered public accounting firm performed such an evaluation, control deficiencies may have been identified by management or our independent registered public accounting firm, and those control deficiencies could have also represented one or more material weaknesses. Undetected material weaknesses in our internal controls could lead to financial statement restatements and require us to incur the expense of remediation.

We will incur significant increased costs as a result of operating as a public company, and our management will be required to devote substantial time to corporate governance standards.

As a public company, we will incur significant legal, accounting and other expenses that we did not incur as a private company, and these expenses may increase even more after we are no longer an "emerging growth company." Our management and other personnel will need to devote a substantial amount of time and incur substantial expense in connection with compliance initiatives. For example, in anticipation of becoming a public company, we will need to adopt additional internal controls and disclosure controls and procedures, retain a transfer agent and adopt an insider trading policy. As a public company, we will bear all of the internal and external costs of preparing and distributing periodic public reports in compliance with our obligations under the securities laws.

In addition, regulations and standards relating to corporate governance and public disclosure, including the Sarbanes-Oxley Act and the related rules and regulations implemented by the SEC, and the Nasdaq Stock Market LLC (Nasdaq), have increased legal and financial compliance costs and will make some compliance activities more time consuming. We are currently evaluating these rules, and cannot predict or estimate the amount of additional costs we may incur or the timing of such costs. We intend to invest resources to comply with evolving laws, regulations and standards, and this investment will result in increased general and administrative expenses and may divert management's time and attention from our other business activities. If our efforts to comply with new laws, regulations and standards differ from the activities intended by regulatory or governing bodies due to ambiguities related to practice, regulatory authorities may initiate legal proceedings against us and our business may be harmed. In connection with this offering, we intend to increase our directors' and officers' insurance coverage which will increase our insurance cost. In the future, it may be more expensive or more difficult for us to obtain director and officer liability insurance, and we may be required to accept reduced coverage or incur substantially higher costs to obtain coverage. These factors could also make it more difficult for us to attract and retain qualified members of our board of directors, particularly to serve on our audit committee and compensation committee, and qualified executive officers.

Under the corporate governance standards of Nasdaq, a majority of our board of directors and each member of our audit committee must be an independent director no later than the first anniversary of the completion of this offering. We may encounter difficulty in attracting qualified persons to serve on our board of directors and the audit committee, and our board of directors and management may be required to divert significant time and attention and resources away from our business to identify qualified directors. If we fail to attract and retain the required number of independent directors, we may be subject to the delisting of our common stock from the Nasdaq Global Select Market.

We are an "emerging growth company," and any decision on our part to comply only with certain reduced reporting and disclosure requirements applicable to emerging growth companies could make our common stock less attractive to investors.

We are an "emerging growth company," as defined in the JOBS Act. For as long as we continue to be an emerging growth company, we may choose to take advantage of exemptions from various reporting requirements applicable to

other public companies that are not emerging growth companies, including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. We could be an "emerging growth company" for up to five years following the completion of this offering, although, if we have more than $1.07 billion in annual revenue, if the market value of our common stock held by non-affiliates exceeds $700 million as of June 30 of any year, or we issue more than $1.0 billion of non-convertible debt over a three-year period before the end of that five-year period, we would cease to be an "emerging growth company" as of the following December 31. Investors could find our common stock less attractive if we choose to rely on these exemptions. In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. We have elected to use this extended transition period until the earlier of the date that we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, our financial statements may not be comparable to companies that comply with the new or revised accounting standards as of public company effective dates. If some investors find our common stock less attractive as a result of any of our reliance on these exemptions, there may be a less active trading market for our common stock and our share price may be more volatile.

We do not anticipate paying cash dividends, and accordingly, stockholders must rely on share appreciation for any return on their investment.

We have never paid any dividends on our capital stock. We currently intend to retain our future earnings, if any, to fund the development and growth of our businesses and do not anticipate that we will declare or pay any cash dividends on our capital stock in the foreseeable future. See the section titled "Dividend Policy." As a result, capital appreciation, if any, of our common stock will be your sole source of gain on your investment for the foreseeable future. Investors seeking cash dividends should not invest in our common stock.

Our management team will have broad discretion to use the net proceeds from this offering and its investment of these proceeds may not yield a favorable return. They may invest the proceeds of this offering in ways with which investors disagree.

Our management team will have broad discretion in the application of the net proceeds from this offering and could spend or invest the proceeds in ways with which our stockholders disagree. Accordingly, investors will need to rely on our management team's judgment with respect to the use of these proceeds. We intend to use the proceeds from this offering in the manner described in the section titled "Use of Proceeds." The failure by management to apply these funds effectively could negatively affect our ability to operate and grow our business.

We cannot specify with certainty all of the particular uses for the net proceeds to be received upon the completion of this offering. In addition, the amount, allocation and timing of our actual expenditures will depend upon numerous factors, including any milestone payments received from any future strategic partnerships and royalties on sales of any future approved product. Accordingly, we will have broad discretion in using these proceeds. Until the net proceeds are used, they may be placed in investments that do not produce significant income or that may lose value.

Investors in this offering will pay a much higher price than the book value of our common stock and therefore you will incur immediate and substantial dilution of your investment.

The initial public offering price will be substantially higher than the net tangible book value per common share based on the total value of our tangible assets less our total liabilities immediately following this offering. Therefore, if you purchase common stock in this offering, you will experience immediate and substantial dilution of approximately $8.43 per share, representing the difference between our pro forma as adjusted net tangible book value per share after giving effect to this offering at an assumed initial public offering price of $16.00 per share, the midpoint of the estimated price range set forth on the cover page of this prospectus. As of June 30, 2019, we have outstanding stock options to purchase 1,929,283 shares of our common stock, certain of which have exercise prices below the assumed initial public offering price. To the extent these outstanding options are ultimately exercised, you will experience further dilution. See the section titled "Dilution."

Delaware law and provisions in our amended and restated certificate of incorporation and bylaws that will become effective upon the completion of this offering might discourage, delay, or prevent a change in control of our company or changes in our management and, therefore, depress the trading price of our common stock.

Provisions in our amended and restated certificate of incorporation and bylaws that will become effective upon the completion of this offering may discourage, delay, or prevent a merger, acquisition, or other change in control that stockholders may consider favorable, including transactions in which you might otherwise receive a premium for your shares of our common stock. These provisions may also prevent or frustrate attempts by our stockholders to replace or remove our management. Therefore, these provisions could adversely affect the price of our common stock. Among other things, our charter documents will:

- establish that our board of directors is divided into three classes, Class I, Class II and Class III, with each class serving staggered three year terms;
- provide that vacancies on our board of directors may be filled only by a majority of directors then in office, even though less than a quorum;
- provide that our directors may only be removed for cause;
- eliminate cumulative voting in the election of directors;
- authorize our board of directors to issue shares of convertible preferred stock and determine the price and other terms of those shares, including preferences and voting rights, without stockholder approval;
- provide our board of directors with the exclusive right to elect a director to fill a vacancy or newly created directorship;
- permit stockholders to only take actions at a duly called annual or special meeting and not by written consent;
- prohibit stockholders from calling a special meeting of stockholders;
- require that stockholders give advance notice to nominate directors or submit proposals for consideration at stockholder meetings;
- authorize our board of directors, by a majority vote, to amend the bylaws; and
- require the affirmative vote of at least 66 2/3% or more of the outstanding shares of common stock to amend many of the provisions described above.

In addition, Section 203 of the General Corporation Law of the State of Delaware (DGCL) prohibits a publicly-held Delaware corporation from engaging in a business combination with an interested stockholder, generally a person which together with its affiliates owns, or within the last three years has owned, 15% of our voting stock, for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner.

Any provision of our amended and restated certificate of incorporation, amended and restated bylaws, or Delaware law that has the effect of delaying or preventing a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our capital stock and could also affect the price that some investors are willing to pay for our common stock.

Our amended and restated bylaws that will become effective upon the completion of this offering provide that the Court of Chancery of the State of Delaware will be the exclusive forum for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our amended and restated bylaws that will become effective upon the completion of this offering provide that the Court of Chancery of the State of Delaware is the exclusive forum for:

- any derivative action or proceeding under Delaware statutory or common law brought on our behalf;
- any action asserting a claim of breach of fiduciary duty owed by any of our directors, officers or other employees to us or our stockholders;
- any action asserting a claim against us arising under the DGCL, our amended and restated certificate of incorporation or our amended and restated bylaws; and
- any action asserting a claim against us that is governed by the internal-affairs doctrine.

This exclusive forum provision will not apply to any causes of action arising under the Securities Act or the Exchange Act or any other claim for which the federal courts have exclusive jurisdiction. This exclusive-forum provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees, which may discourage lawsuits against us and our directors, officers and other employees. Any person or entity purchasing or otherwise acquiring any interest in any of our securities shall be deemed to have notice of and consented to this provision. If a court were to find this exclusive-forum provision in our amended and restated bylaws to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving the dispute in other jurisdictions, which could seriously harm our business. Nothing in our amended and restated bylaws precludes stockholders that assert claims under the Securities Act of 1933, as amended (the Securities Act), or the Exchange Act, from bringing such claims in state or federal court, subject to applicable law.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements that involve risks and uncertainties. All statements other than statements of historical facts contained in this prospectus are forward-looking statements. In some cases, you can identify forward-looking statements by words such as "anticipate," "believe," "contemplate," "continue," "could," "estimate," "expect," "intend," "may," "plan," "potential," "predict," "project," "seek," "should," "target," "will" or "would," or the negative of these words or other comparable terminology. These forward-looking statements include, but are not limited to, statements about:

- the timing of the initiation, progress and potential results of our preclinical studies, clinical trials and our discovery programs;
- our ability to utilize our IgM antibody platform to generate and advance additional product candidates;
- our ability to advance product candidates into, and successfully complete, clinical trials;
- the timing or likelihood of regulatory filings and approvals;
- our estimates of the number of patients who suffer from the diseases we are targeting and the number of patients that may enroll in our clinical trials;
- the commercializing of our product candidates, if approved;
- our ability and the potential to successfully manufacture and supply our product candidates for clinical trials and for commercial use, if approved;
- future strategic arrangements and/or collaborations and the potential benefits of such arrangements;
- our anticipated use of our existing resources and the proceeds from this offering;
- our estimates regarding expenses, future revenue, capital requirements and needs for additional financing and our ability to obtain additional capital;
- the sufficiency of our existing cash and cash equivalents to fund our future operating expenses and capital expenditure requirements;
- our ability to retain the continued service of our key personnel and to identify, hire and retain additional qualified professionals;
- the implementation of our business model, strategic plans for our business and product candidates;
- the scope of protection we are able to establish and maintain for intellectual property rights, including our IgM platform, product candidates and discovery programs;
- our ability to contract with third-party suppliers and manufacturers and their ability to perform adequately;
- the pricing, coverage and reimbursement of our product candidates, if approved; and
- developments relating to our competitors and our industry, including competing product candidates and therapies.

These forward-looking statements are based on our management's current expectations, estimates, forecasts and projections about our business and the industry in which we operate, and management's beliefs and assumptions and are not guarantees of future performance or development. These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described in the section titled "Risk Factors" and elsewhere in this prospectus. Moreover, we operate in a very competitive and rapidly changing environment, and new risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this prospectus may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements.

In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based on information available to us as of the date of this prospectus. While we believe that information provides a reasonable basis for these statements, that information may be limited or incomplete. Our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all relevant information.

You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance, or events and circumstances reflected in the forward-looking statements will be achieved or occur. We undertake no obligation to update publicly any forward-looking statements for any reason after the date of this prospectus to conform these statements to new information, actual results or changes in our expectations, except as required by law.

You should read this prospectus, as well as the documents that we reference in this prospectus and have filed with the SEC as exhibits to the registration statement of which this prospectus is a part, with the understanding that our actual future results, levels of activity, performance, and events and circumstances may be materially different from what we expect.

MARKET, INDUSTRY AND OTHER DATA

This prospectus contains estimates, projections and other information concerning our business, our industry and the markets for our product candidates, including data regarding the estimated size of such markets and the incidence of certain medical conditions. We obtained the industry, market and similar data set forth in this prospectus from our internal estimates and research and from academic and industry research, publications, surveys and studies conducted by third parties, including governmental agencies. In some cases, we do not expressly refer to the sources from which this data is derived. Information that is based on estimates, forecasts, projections, market research or similar methodologies is inherently subject to uncertainties and actual events or circumstances may differ materially from events and circumstances that are assumed in this information. While we believe that the data we use from third parties are reliable, we have not separately verified these data. Further, while we believe our internal research is reliable, such research has not been verified by any third party. You are cautioned not to give undue weight to any such information, projections and estimates.

USE OF PROCEEDS

We estimate that the net proceeds from this offering will be approximately $112.4 million, or $129.8 million if the underwriters exercise their option to purchase additional shares of common stock from us in full, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us, assuming an initial public offering price of $16.00 per share, the midpoint of the price range set forth on the cover page of this prospectus.

Each $1.00 increase (decrease) in the assumed initial public offering price of $16.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) the net proceeds to us from this offering by $7.3 million, assuming the number of shares of common stock offered by us, as set forth on the cover page of this prospectus, remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, each increase (decrease) of 1,000,000 shares in the number of shares of common stock offered by us, as set forth on the cover page of this prospectus, would increase (decrease) our net proceeds from this offering by $14.9 million, assuming the assumed initial public offering price remains the same, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

The principal purposes of this offering are to obtain additional capital to support our operations, establish a public market for our common stock and facilitate our future access to the public capital markets. We expect to use the net proceeds from this offering, together with our existing cash and cash equivalents, as follows:

- approximately $30.0 million to fund the clinical development of IGM-2323 for the treatment of relapsed/refractory B cell NHL patients through the dose escalation portion and into expansion of our Phase 1 clinical trial;
- approximately $15.0 million to fund IND-enabling studies and the clinical development of our DR5 IgM antibody through the dose escalation portion of a Phase 1 clinical trial;
- approximately $35.0 million to fund our ongoing efforts to develop additional clinical candidates from our IgM platform;
- approximately $15.0 million to fund the buildout and expansion of our manufacturing facilities; and
- the remaining proceeds for working capital and other general corporate purposes.

This expected use of the net proceeds from this offering represents our intentions based upon our current plans and prevailing business conditions, which could change in the future as such plans and conditions evolve. As of the date of this prospectus, we cannot predict with certainty all of the particular uses for the net proceeds to be received upon the completion of this offering or the amounts that we will actually spend on the uses set forth above. We may also use a portion of the net proceeds to acquire, license or invest in complementary products, technologies, intellectual property or businesses, although we have no present commitments or agreements to do so. As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering.

Based on our current business plans, we believe that the net proceeds from this offering, together with our existing cash and cash equivalents, will be sufficient to fund our planned operations into early 2022. The expected net proceeds from this offering will not be sufficient for us to fund any of our product candidates through regulatory approval, and we will need to raise substantial additional capital to complete the development and commercialization of our product candidates. The amounts and timing of our actual expenditures may vary significantly depending on numerous factors, including the progress of our development efforts, the status of and results from preclinical studies and clinical trials, our ability to take advantage of expedited programs or to obtain regulatory approvals and the timing and costs associated with the manufacture and supply of our current or any future product candidates, any collaborations that we may enter into with third parties and any unforeseen cash needs. For additional information regarding our potential capital requirements, including factors that could cause actual costs to vary from the estimates set forth above, see the section titled “Risk Factors.”

Pending our use of the net proceeds from this offering, we plan to invest the net proceeds in a variety of interest-bearing instruments, including money market funds, U.S. Treasury securities, corporate debt, U.S. Government agency securities and commercial paper.

DIVIDEND POLICY

We have never declared or paid cash dividends on our capital stock to investors. We currently intend to retain all available funds and any future earnings to support operations and to finance the growth and development of our business. We do not intend to declare or pay any cash dividends on our capital stock in the foreseeable future. Any future determination to pay dividends will be made at the discretion of our board of directors, subject to applicable laws, and will depend upon, among other factors, our results of operations, financial condition, contractual restrictions and capital requirements. Our future ability to pay cash dividends on our capital stock may be limited by the terms of any future debt or preferred securities.

CAPITALIZATION

The following table sets forth our cash and cash equivalents and capitalization as of June 30, 2019:

- on an actual basis;
- on a pro forma basis to reflect (i) the issuance of 3,026,449 shares of our Series C convertible preferred stock and related gross proceeds of $40.0 million subsequent to June 30, 2019 and (ii) the automatic conversion of all outstanding shares of our convertible preferred stock, (including the shares referenced in (i)) into an aggregate of 10,787,861 shares of common stock and 6,431,205 shares of non-voting common stock as if such conversion had occurred on June 30, 2019; and
- on a pro forma as adjusted basis to reflect (i) the pro forma items described immediately above and (ii) the issuance and sale of 7,812,500 shares of common stock in this offering at an assumed initial public offering price of $16.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

You should read this table together with the sections titled “Selected Financial Data” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our financial statements and related notes included elsewhere in this prospectus.

	AS OF JUNE 30, 2019		
	ACTUAL	PRO FORMA	PRO FORMA AS ADJUSTED(1)
		(unaudited) (in thousands, except share and per share amounts)	
Cash and cash equivalents	$ 42,672	$ 82,672	$ 195,144
Convertible preferred stock, par value $0.01 per share; 17,219,074 shares authorized and 14,192,617 shares issued and outstanding, actual; 0 shares authorized, issued and outstanding, pro forma and pro forma as adjusted	$122,785	$ —	$ —
Stockholders’ (deficit) equity:			
Preferred stock, par value $0.01 per share; 0 shares authorized, issued and outstanding, actual; 200,000,000 shares authorized, 0 shares issued and outstanding, pro forma and pro forma as adjusted	—	—	—
Common stock, par value $0.01 per share; 33,669,269 shares authorized, 618,861 shares issued and outstanding, actual; 33,669,269 shares authorized, 11,406,722 shares issued and outstanding, pro forma; 1,000,000,000 shares authorized, 19,219,222 shares issued and outstanding, pro forma as adjusted	6	114	192
Non-voting common stock, par value $0.01 per share; 4,161,370 shares authorized, 0 shares issued and outstanding, actual; 6,431,208 shares authorized, 6,431,205 shares issued and outstanding, pro forma and pro forma as adjusted	—	64	64
Additional paid-in capital	1,243	163,770	276,042
Due from related party	—	—	—
Accumulated deficit	(82,218)	(82,218)	(82,218)
Total stockholders’ (deficit) equity	(80,969)	81,730	194,080
Total capitalization	$ 41,816	$ 81,730	$ 194,080

(1) The pro forma as adjusted information above is illustrative only and may change based on the actual initial public offering price and other terms of this offering. Each $1.00 increase (decrease) in the assumed initial public offering price of $16.00 per share, the

midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) each of our pro forma as adjusted cash and cash equivalents, additional paid-in capital, total stockholders' (deficit) equity and total capitalization by approximately $7.3 million, assuming the number of shares of common stock offered by us, as set forth on the cover page of this prospectus, remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, each increase (decrease) of 1,000,000 shares in the number of shares of common stock offered by us would increase (decrease) each of our pro forma as adjusted cash and cash equivalents, additional paid-in capital, total stockholders' (deficit) equity and total capitalization by approximately $14.9 million, assuming the assumed initial public offering price remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

For purposes of this section, the number of shares of common stock and non-voting common stock that will be outstanding following this offering is based on 11,406,722 shares of common stock outstanding and 6,431,205 shares of non-voting common stock outstanding as of June 30, 2019 (including convertible preferred stock on an as-converted basis, as well as 3,026,449 shares of our Series C convertible preferred stock issued after June 30, 2019), and excludes:

- 595,832 shares of common stock issuable upon the exercise of outstanding stock options granted under our 2010 Plan as of June 30, 2019, with a weighted-average exercise price of $0.94 per share;
- 1,333,451 shares of common stock issuable upon the exercise of outstanding stock options granted under our 2018 Plan as of June 30, 2019, with a weighted-average exercise price of $1.39 per share;
- 116,518 shares of restricted common stock granted during 2018, none of which are vested as of June 30, 2019;
- 185,063 shares of common stock issuable upon the exercise of outstanding stock options granted under our 2018 Plan after June 30, 2019, with a weighted-average exercise price of $10.24 per share;
- 2,854,293 shares of common stock reserved for future issuance under our 2018 Plan (which does not include an aggregate of 118,361 shares of common stock issuable upon the exercise of stock options that have been approved to be granted, as of the effective date of the registration statement of which this prospectus forms a part, at an exercise price equal to the initial public offering price of our common stock), including the amendment thereto that will become effective in connection with this offering, and any additional shares that become available under our 2018 Plan pursuant to provisions thereof that automatically increase the share reserve under the plan each year; and
- 280,000 shares of common stock reserved for future issuance under our ESPP, which will become effective in connection with this offering, and any additional shares that become available under our ESPP pursuant to provisions thereof that automatically increase the share reserve under the plan each year.

DILUTION

If you invest in our common stock in this offering, your interest will be diluted to the extent of the difference between the initial public offering price per share and the pro forma as adjusted net tangible book value per share immediately following the completion of this offering.

Our historical net tangible book value (deficit) as of June 30, 2019, was $(83.1) million, or $(134.21) per share of common stock, based on 618,861 shares of common stock and no shares of non-voting common stock outstanding as of June 30, 2019. Our net tangible book value (deficit) per share represents total tangible assets, excluding deferred offering costs, less total liabilities and our convertible preferred stock, all divided by the number of shares of common stock and non-voting common stock outstanding on June 30, 2019.

Our pro forma net tangible book value as of June 30, 2019 was $79.7 million, or $4.47 per share of common stock. Pro forma net tangible book value per share represents our net tangible book value per share on a pro forma basis, to reflect (i) the issuance of 3,026,449 shares of our Series C convertible preferred stock and related gross proceeds of $40.0 million subsequent to June 30, 2019 and (ii) the automatic conversion of all outstanding shares of our convertible preferred stock, (including the shares referenced in (i)) into an aggregate of 10,787,861 shares of common stock and 6,431,205 shares of non-voting common stock as if such conversion had occurred on June 30, 2019.

After giving effect to the sale by us of 7,812,500 shares of common stock in this offering at an assumed initial public offering price of $16.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us, our pro forma as adjusted net tangible book value as of June 30, 2019 would have been $194.1 million, or $7.57 per share. This amount represents an immediate increase in pro forma as adjusted net tangible book value of $3.10 per share to our existing stockholders and an immediate dilution in pro forma as adjusted net tangible book value of $8.43 per share to new investors participating in this offering. We determine dilution per share to investors participating in this offering by subtracting the pro forma as adjusted net tangible book value per share after this offering from the initial public offering price per share paid by investors participating in this offering. The following table illustrates this dilution on a per share basis.

Assumed initial public offering price per share		$16.00
Historical net tangible book value (deficit) per share as of June 30, 2019	$(134.21)	
Pro forma change in net tangible book value (deficit) per share	138.68	
Pro forma net tangible book value per share as of June 30, 2019	4.47	
Increase in pro forma net tangible book value per share attributable to new investors purchasing shares of our common stock in this offering	3.10	
Pro forma as adjusted net tangible book value per share following this offering		7.57
Dilution in net tangible book value per share to new investors in this offering		$ 8.43

The dilution information discussed above is illustrative only and may change based on the actual initial public offering price and other terms of this offering. Each $1.00 increase (decrease) in the assumed initial public offering price of $16.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) our pro forma as adjusted net tangible book value per share after this offering by $0.28 per share and increase (decrease) the dilution to new investors by $0.72 per share, in each case assuming the number of shares of common stock offered by us, as set forth on the cover page of this prospectus, remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, each increase of 1,000,000 shares in the number of shares of common stock offered by us, as set forth on the cover page of this prospectus, would increase our pro forma as adjusted net tangible book value after this offering by approximately $0.28 per share and decrease the dilution to new investors purchasing common stock in this offering by approximately $0.28 per share, in each case assuming the assumed initial public offering price per

share remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. Each decrease of 1,000,000 shares in the number of shares of common stock offered by us, as set forth on the cover page of this prospectus, would decrease our pro forma as adjusted net tangible book value after this offering by approximately $0.30 per share and increase the dilution to new investors purchasing common stock in this offering by approximately $0.30 per share, in each case assuming the assumed initial public offering price per share remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

If the underwriters exercise their option to purchase additional shares of common stock in full, our pro forma net tangible book value per share, as adjusted to give effect to this offering, would be $7.89 per share, and the dilution in pro forma net tangible book value per share to investors in this offering would be $8.11 per share.

The following table summarizes, as of June 30, 2019, on a pro forma as adjusted basis as described above, the number of shares of our common stock and non-voting common stock (including 3,026,449 shares issuable upon conversion of our Series C convertible preferred stock issued after June 30, 2019), the total consideration and the average price per share (i) paid to us by existing stockholders and (ii) to be paid by new investors purchasing common stock in this offering at an assumed initial public offering price of $16.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, before deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us:

	SHARES PURCHASED		TOTAL CONSIDERATION		WEIGHTED-AVERAGE PRICE PER SHARE
	NUMBER	PERCENT	AMOUNT	PERCENT	
Existing stockholders before this offering	17,837,927	69.5%	$165,104,728	56.9%	$ 9.26
New investors participating in this offering	7,812,500	30.5	125,000,000	43.1	$ 16.00
Total	25,650,427	100.0%	$290,104,728	100.0%	

If the underwriters exercise their option to purchase additional shares of common stock in full, existing stockholders after this offering would own 66.5% of the total number of shares of common stock outstanding following this offering, and new investors would own 33.5% of the total number of shares of common stock outstanding after this offering.

For purposes of this section, the number of shares of common stock and non-voting common stock that will be outstanding following this offering is based on 11,406,722 shares of common stock outstanding and 6,431,205 shares of non-voting common stock outstanding as of June 30, 2019 (including convertible preferred stock on an as-converted basis, as well as 3,026,449 shares of our Series C convertible preferred stock issued after June 30, 2019), and excludes:

- 595,832 shares of common stock issuable upon the exercise of outstanding stock options granted under our 2010 Plan as of June 30, 2019, with a weighted-average exercise price of $0.94 per share;
- 1,333,451 shares of common stock issuable upon the exercise of outstanding stock options granted under our 2018 Plan as of June 30, 2019, with a weighted-average exercise price of $1.39 per share;
- 116,518 shares of restricted common stock granted during 2018, none of which are vested as of June 30, 2019;
- 185,063 shares of common stock issuable upon the exercise of outstanding stock options granted under our 2018 Plan after June 30, 2019, with a weighted-average exercise price of $10.24 per share;
- 2,854,293 shares of common stock reserved for future issuance under our 2018 Plan (which does not include an aggregate of 118,361 shares of common stock issuable upon the exercise of stock options that have been approved to be granted, as of the effective date of the registration statement of which this prospectus forms a part, at an exercise price equal to the initial public offering price of our common stock), including the amendment thereto that will become effective in connection with this offering, and any additional shares that become available under our 2018 Plan pursuant to provisions thereof that automatically increase the share reserve under the plan each year; and

- 280,000 shares of common stock reserved for future issuance under our ESPP, which will become effective in connection with this offering, and any additional shares that become available under our ESPP pursuant to provisions thereof that automatically increase the share reserve under the plan each year.

Certain of our directors and existing stockholders, including certain stockholders affiliated with our directors and that beneficially own more that 5% of our outstanding capital stock, have indicated an interest in purchasing an aggregate of $50.0 million or more in shares of our common stock in this offering at the initial public offering price. The foregoing discussion does not reflect the potential purchase of any shares in this offering by these directors and stockholders.

To the extent that any outstanding stock options are exercised, or new stock options are issued under our equity incentive plans, or we issue additional equity or convertible debt securities in the future, there will be further dilution to investors participating in this offering. In addition, we may choose to raise additional capital because of market conditions or strategic considerations, even if we believe that we have sufficient funds for our current or future operating plans. If we raise additional capital through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

SELECTED FINANCIAL DATA

The following tables set forth our selected financial data as of and for the periods ended on the dates indicated. We have derived the selected statements of operations data for the years ended December 31, 2017 and 2018 and the selected balance sheet data as of December 31, 2017 and 2018 from our audited financial statements included elsewhere in this prospectus. The selected statements of operations data for the six months ended June 30, 2018 and 2019, and the balance sheet data as of June 30, 2019, have been derived from our unaudited interim condensed financial statements included elsewhere in this prospectus. The unaudited interim condensed financial statements were prepared on the same basis as our audited financial statements and reflect, in the opinion of management, all adjustments, which include only normal, recurring adjustments that are necessary to present fairly the unaudited interim condensed financial statements. Our historical results are not necessarily indicative of the results that may be expected in any future period. You should read this data together with the information in the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and related notes included elsewhere in this prospectus. The selected financial data in this section are not intended to replace the financial statements and are qualified in their entirety by the financial statements and related notes appearing at the end of this prospectus.

	YEAR ENDED DECEMBER 31,		SIX MONTHS ENDED JUNE 30,	
	2017	2018	2018	2019
	(in thousands, except share and per share amounts)		(Unaudited)	
Statements of Operations Data:				
Operating expenses:				
Research and development	$ 8,639	$ 18,962	$ 5,976	$ 14,215
General and administrative	2,508	3,829	1,224	3,673
Total operating expenses	11,147	22,791	7,200	17,888
Loss from operations	(11,147)	(22,791)	(7,200)	(17,888)
Other income (expense), net	93	80	59	(258)
Net loss	$ (11,054)	$ (22,711)	$ (7,141)	$ (18,146)
Net loss per share, basic and diluted (1)	$ (25.24)	$ (51.84)	$ (16.30)	$ (36.17)
Weighted-average common shares outstanding, basic and diluted (1)	437,942	438,074	438,074	501,716
Pro forma net loss per share, basic and diluted (unaudited) (1)		$ (3.07)		$ (1.80)
Pro forma weighted-average common and non-voting common shares outstanding, basic and diluted (unaudited) (1)		7,395,000		10,081,088

(1) See Note 10 to our financial statements and Note 9 to our unaudited condensed financial statements included elsewhere in this prospectus for an explanation of the method used to calculate historical and pro forma net loss per share, basic and diluted, and the weighted-average number of shares used in the computation of the per share amounts.

	AS OF DECEMBER 31,		AS OF JUNE 30,
	2017	2018	2019
		(in thousands)	
Balance Sheet Data:			
Cash and cash equivalents(1)	$ 432	$ 1,887	$ 42,672
Total assets	1,390	3,979	48,517
Accrued liabilities	507	3,582	4,048
Total liabilities	1,110	8,890	6,701
Convertible preferred stock	40,783	60,917	122,785
Accumulated deficit	(41,361)	(64,072)	(82,218)
Total stockholders' (deficit) equity	(40,503)	(65,828)	(80,969)

(1) The cash and cash equivalents balance as of June 30, 2019 does not include the $40.0 million received by us in July 2019 for the sale of 3,026,449 shares of our Series C convertible preferred stock.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion and analysis of our financial condition and results of operations together with the section titled "Selected Financial Data" and our financial statements and related notes included elsewhere in this prospectus. Some of the information contained in this discussion and analysis or set forth elsewhere in this prospectus, including information with respect to our plans and strategy for our business, include forward-looking statements that involve risks and uncertainties. You should review the section titled "Risk Factors" for a discussion of important factors that could cause our actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

Overview

We are a biotechnology company pioneering the development of engineered IgM antibodies for the treatment of cancer patients. IgM antibodies have inherent properties that we believe may enable them to bind more strongly to cancer cells than comparable IgG antibodies. We have created a proprietary IgM antibody technology platform that we believe is particularly well suited for developing T cell engagers, receptor cross-linking agonists and targeted cytokines. Our lead product candidate, IGM-2323, is a bispecific T cell engaging IgM antibody targeting CD20 and CD3 proteins, and we intend to dose the first patient in a Phase 1 clinical trial for the treatment of relapsed/refractory B cell Non-Hodgkin's lymphoma (NHL) patients in 2019. Our second product candidate will be an IgM antibody targeting Death Receptor 5 (DR5) proteins, and we plan to file an investigational new drug application (IND) for the treatment of patients with solid and hematologic malignancies in 2020. We believe that we have the most advanced research and development program focused on engineered therapeutic IgM antibodies. We have created a portfolio of patents and patent applications, know-how and trade secrets directed to our platform technology, product candidates and manufacturing capabilities, and we retain worldwide commercial rights to all of our product candidates and the intellectual property related thereto.

Since the commencement of our operations, we have focused substantially all of our resources on conducting research and development activities, including drug discovery and preclinical studies, establishing and maintaining our intellectual property portfolio, the manufacturing of clinical and research material, developing our in-house manufacturing capabilities, hiring personnel, raising capital and providing general and administrative support for these operations. Since 2010, such activities have exclusively related to the research, development and manufacture of IgM antibodies and to building our proprietary IgM antibody technology platform. We do not have any products approved for sale, and we have not generated any revenue from product sales.

We have incurred significant net losses to date. Our ability to generate product revenue sufficient to achieve profitability will depend on the successful development and eventual commercialization of one or more of our current or future product candidates. Our net losses were $11.1 million and $22.7 million in 2017 and 2018, respectively, and $7.1 million and $18.1 million for the six months ended June 30, 2018 and June 30, 2019, respectively. As of June 30, 2019, we had an accumulated deficit of $82.2 million. These losses have resulted primarily from costs incurred in connection with research and development activities and general and administrative costs associated with our operations. We expect to continue to incur significant expenses and increasing operating losses for the foreseeable future, and our net losses may fluctuate significantly from period to period, depending on the timing of and expenditures on our planned research and development activities.

We expect our expenses and capital requirements will increase substantially in connection with our ongoing activities as we:

- advance the development of IGM-2323;
- advance the development of our DR5 IgM antibody;
- expand our pipeline of IgM antibody product candidates;
- continue to invest in our IgM antibody technology platform;
- build out and expand our in-house manufacturing capabilities;
- maintain, protect and expand our intellectual property portfolio, including patents, trade secrets and know-how;

- seek marketing approvals for any product candidates that successfully complete clinical trials;
- establish a sales, marketing, and distribution infrastructure to commercialize any product candidate for which we may obtain marketing approval and related commercial manufacturing build-out;
- implement operational, financial and management information systems; and
- attract, hire and retain additional clinical, scientific, management and administrative personnel.

Furthermore, following the completion of this offering, we expect to incur additional costs associated with operating as a public company, including significant legal, accounting, insurance, investor relations and other administrative and professional services expenses that we did not incur as a private company.

As a result, we will require substantial additional capital to develop our product candidates and fund operations for the foreseeable future. Until such time as we can generate significant revenue from product sales, if ever, we expect to finance our operations through a combination of public or private equity offerings, debt financings, collaborations, strategic alliances, licensing arrangements and other marketing and distribution arrangements. The amount and timing of our future funding requirements will depend on many factors, including the pace and results of our development efforts. We cannot assure you that we will ever be profitable or generate positive cash flow from operating activities.

From 2010 through December 31, 2018, we raised aggregate gross proceeds of approximately $65.0 million from the sale of $60.0 million of shares of our convertible preferred stock and $5.0 million from the issuance of an unsecured promissory note. As of December 31, 2018, we had cash and cash equivalents of $1.9 million and $5.0 million in debt outstanding under our promissory note. From January through June 2019, we raised an additional $15.0 million under our promissory note. In June 2019, we entered into an agreement to issue and sell $102.0 million of shares of our Series C convertible preferred stock, which includes $20.0 million in settlement of all of the principal amounts outstanding under our promissory note. As of June 30, 2019, $62.0 million of gross proceeds were received, which includes $20.0 million in settlement of all of the principal amounts outstanding under a promissory note held by Haldor Topsøe Holding A/S (HTH). In July 2019, we received the remaining gross proceeds of $40.0 million.

We were incorporated in Delaware in 1993 under the name Palingen, Inc. From 1993 to 2010, we were principally engaged in research related to naturally occurring IgM antibodies. In 2010, we received an initial equity investment from HTH, our current majority stockholder, changed our name to IGM Biosciences, Inc. and refocused our research and development efforts toward developing our IgM platform and engineering new IgM antibodies. In December 2017, we established a Danish holding company—IGM Biosciences A/S (Holdco); in April 2019, we dissolved Holdco. The capitalization information included in this prospectus is consistently presented as that of IGM Biosciences, Inc. even during the interim period when we had a holding company structure and our investors held their equity interests in Holdco.

Components of Results of Operations

Revenue

To date, we have not generated any revenue and do not expect to generate any revenue from the sale of products in the near future.

Operating expenses

Research and development

Research and development expenses consist primarily of costs incurred for the discovery and development of product candidates, which include:

- Direct expenses consisting of:
  - Fees paid to third parties such as consultants, contractors and contract research organizations (CROs), for animal studies and other costs related to preclinical and planned clinical studies;
  - Costs related to acquiring and manufacturing research and clinical trial materials, including under agreements with third parties such as contract manufacturing organizations (CMOs), and other vendors;
  - Costs related to the preparation of regulatory submissions; and
  - Expenses related to laboratory supplies and services;

- Indirect expenses consisting of:
  - Personnel-related expenses, including salaries, benefits and stock-based compensation expense, for personnel in our research and development functions; and
  - Depreciation of equipment and facilities expenses.

We expense research and development costs in the periods in which they are incurred. Nonrefundable advance payments for goods or services to be received in future periods for use in research and development activities are deferred and capitalized. The capitalized amounts are then expensed as the related goods are delivered and as services are performed. All direct research and development expenses are tracked by stage of development. We do not track our indirect research and development costs by product candidate or program.

We expect our research and development expenses to increase substantially for the foreseeable future as we continue to invest in research and development activities to advance our product candidates and our clinical programs, expand our product candidate pipeline and continue to build out and expand our in-house manufacturing capabilities. The process of conducting the necessary preclinical and clinical research to obtain regulatory approval is costly and time-consuming. To the extent that our product candidates continue to advance into clinical trials, as well as advance into larger and later stage clinical trials, our expenses will increase substantially and may become more variable. The actual probability of success for our product candidates may be affected by a variety of factors, including the safety and efficacy of our product candidates, investment in our clinical programs, manufacturing capability and competition with other products. As a result of these variables, we are unable to determine the duration and completion costs of our research and development projects or when and to what extent we will generate revenue from the commercialization and sale of our product candidates. We may never succeed in achieving regulatory approval for any of our product candidates.

General and administrative

Our general and administrative expenses consist primarily of personnel-related expenses for personnel in our executive, finance, corporate and other administrative functions, intellectual property, facilities and other allocated expenses, other expenses for outside professional services, including legal, human resources, audit and accounting services, and insurance costs. Personnel-related expenses consist of salaries, benefits and stock-based compensation. We expect our general and administrative expenses to increase for the foreseeable future as we increase our headcount to support our continued research activities and development of product candidates and as a result of operating as a public company, including compliance with the rules and regulations of the SEC and those of any national securities exchange on which our securities are traded, legal, auditing, additional insurance expenses, investor relations activities and other administrative and professional services. We also expect our intellectual property expenses to increase as we expand our intellectual property portfolio.

Other income (expense), net

Other income (expense), net includes sublease income, interest income earned on our cash, cash equivalents and restricted cash balances and interest expense incurred on unsecured promissory notes.

Results of Operations

Comparison of the Six Months Ended June 30, 2018 and 2019

	SIX MONTHS ENDED JUNE 30,		CHANGE
	2018	2019	
	(in thousands)		
Operating expenses:			
Research and development	$ 5,976	$ 14,215	$ 8,239
General and administrative	1,224	3,673	2,449
Total operating expenses	7,200	17,888	10,688
Loss from operations	(7,200)	(17,888)	(10,688)
Other income (expense), net	59	(258)	(317)
Net loss	$ (7,141)	$ (18,146)	$ (11,005)

Research and development expenses

The following table summarizes our research and development expenses incurred during the periods indicated:

	SIX MONTHS ENDED JUNE 30,		
	2018	2019	CHANGE
	(in thousands)		
Direct expenses			
Clinical stage program (1)	$ 1,134	$ 5,330	$ 4,196
Preclinical stage programs	2,085	3,721	1,636
Indirect expenses			
Personnel-related	2,096	3,932	1,836
Depreciation and facilities	661	1,232	571
Total research and development expenses	$ 5,976	$ 14,215	$ 8,239

(1) Includes direct expenses related to our lead product candidate, IGM-2323, for which we intend to dose the first patient in a Phase 1 clinical trial in 2019.

Research and development expenses were $6.0 million for the six months ended June 30, 2018, compared to $14.2 million for the six months ended June 30, 2019. The increase of $8.2 million was driven by an increase in expenses to advance our product candidates, including $4.2 million of expenses related to our clinical stage program, which consisted of preclinical and manufacturing expenses incurred in the development of our lead product candidate, IGM-2323, and start-up expenses for its Phase 1 clinical trial for which we intend to dose the first patient in 2019, and $1.6 million related to our preclinical stage programs. Personnel-related expenses, including stock-based compensation, increased by $1.8 million due to an increase in headcount.

General and administrative expenses

General and administrative expenses were $1.2 million for the six months ended June 30, 2018 compared to $3.7 million for the six months ended June 30, 2019. The increase of $2.4 million was primarily due to a $1.2 million increase in accounting and consulting services related to our financial statement audit, a $0.4 million increase in personnel-related expenses, a $0.3 million increase in recruitment expenses and a $0.2 million increase in legal and advisory fees.

Other income (expense), net

Other income, net was $0.1 million for the six months ended June 30, 2018 compared to other expense, net of $0.3 million for the six months ended June 30, 2019. The decrease of $0.3 million was primarily due to an increase in interest expense resulting from an interest-bearing unsecured promissory note.

Comparison of the Years Ended December 31, 2017 and 2018

	YEAR ENDED DECEMBER 31,		
	2017	2018	CHANGE
	(in thousands)		
Operating expenses:			
Research and development	$ 8,639	$ 18,962	$ 10,323
General and administrative	2,508	3,829	1,321
Total operating expenses	11,147	22,791	11,644
Loss from operations	(11,147)	(22,791)	(11,644)
Other income, net	93	80	(13)
Net loss	$ (11,054)	$ (22,711)	$(11,657)

Research and development expenses

The following table summarizes our research and development expenses incurred during the periods indicated:

	YEAR ENDED DECEMBER 31,		
	2017	2018	CHANGE
	(in thousands)		
Direct expenses			
Clinical stage program (1)	$ 1,168	$ 7,359	$ 6,191
Preclinical stage programs	3,229	5,394	2,165
Indirect expenses			
Personnel-related	2,889	4,743	1,854
Depreciation and facilities	1,353	1,466	113
Total research and development expenses	$ 8,639	$ 18,962	$ 10,323

(1) Includes direct expenses related to our lead product candidate, IGM-2323, for which we intend to dose the first patient in Phase 1 clinical trial in 2019.

Research and development expenses were $8.6 million in 2017 compared to $19.0 million in 2018. The increase of $10.3 million was driven by an increase in expenses to advance our product candidates, including $6.2 million of expenses related to our clinical stage program, which consisted of preclinical and clinical expenses and expenses incurred in the development of our lead product candidate, IGM-2323 and the preparation for its Phase 1 clinical trial, and $2.2 million related to our preclinical stage programs. Personnel-related expenses, including stock-based compensation, increased by $1.9 million due to an increase in headcount.

General and administrative expenses

General and administrative expenses were $2.5 million in 2017 compared to $3.8 million in 2018. The increase of $1.3 million was primarily due to a $0.7 million increase in legal and advisory fees, a $0.3 million increase in recruitment expenses and a $0.2 million increase in personnel-related expenses.

Other income, net

Other income, net was $93,000 in 2017 compared to $80,000 in 2018. The decrease of $13,000 was primarily due to an increase in interest expense resulting from an interest-bearing unsecured promissory note.

Liquidity and Capital Resources

Liquidity

Due to our significant research and development expenditures, we have generated operating losses since our inception. We have funded our operations primarily through the sale of convertible preferred stock and the issuance of unsecured promissory notes. As of June 30, 2019, we had cash and cash equivalents of $42.7 million. Additionally, in July 2019, we received cash of $40.0 million in connection with the issuance of our Series C convertible preferred stock. As of June 30, 2019, we had an accumulated deficit of $82.2 million.

Future Funding Requirements

Our primary uses of cash are to fund operating expenses, which consist primarily of research and development expenditures related to our programs and related personnel costs. The timing and amount of our future funding requirements depends on many factors, including the following:

- the initiation, scope, rate of progress, results and cost of our preclinical studies, clinical trials and other related activities for our product candidates;
- the costs associated with manufacturing our product candidates, including building out and expanding our own manufacturing facilities, and establishing commercial supplies and sales, marketing and distribution capabilities;
- the timing and cost of capital expenditures to support our research, development and manufacturing efforts;
- the number and characteristics of other product candidates that we pursue;
- the costs, timing and outcome of seeking and obtaining FDA and non-U.S. regulatory approvals;

- our ability to maintain, expand and defend the scope of our intellectual property portfolio, including the amount and timing of any payments we may be required to make in connection with the licensing, filing, defense and enforcement of any patents or other intellectual property rights;
- the timing, receipt and amount of sales from our potential products;
- our need and ability to hire additional management, scientific and medical personnel;
- the effect of competing products that may limit market penetration of our product candidates;
- our need to implement additional internal systems and infrastructure, including financial and reporting systems;
- the economic and other terms, timing and success of any collaboration, licensing, or other arrangements into which we may enter in the future, including the timing of receipt of any milestone or royalty payments under these agreements;
- the compliance and administrative costs associated with being a public company; and
- the extent to which we acquire or invest in businesses, products or technologies, although we currently have no commitments or agreements relating to any of these types of transactions.

Based on our current operating plan, our current cash and cash equivalents, together with the proceeds from the sale and issuance of our Series C preferred stock, are expected to be sufficient to fund our ongoing operations for at least the following 12 months, without giving effect to any anticipated proceeds from this offering. However, we have based this estimate on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we currently expect.

In addition, we will require additional funding in order to complete development of our product candidates and commercialize our products, if approved. We may seek to raise any necessary additional capital through a combination of public or private equity offerings, debt financings, collaborations, strategic alliances, licensing arrangements and other marketing and distribution arrangements. There can be no assurance that, in the event we require additional financing, such financing will be available at terms acceptable to us, if at all. Failure to generate sufficient cash flows from operations, raise additional capital, and reduce discretionary spending should additional capital not become available could have a material adverse effect on our ability to achieve our intended business objectives. Because of the numerous risks and uncertainties associated with the development and commercialization of our product candidates we are unable to estimate the amounts of increased capital outlays and operating expenditures associated with our current and anticipated preclinical studies and clinical trials. To the extent that we raise additional capital through collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our product candidates, future revenue streams or research programs at an earlier stage of development or on less favorable terms than we would otherwise choose or to grant licenses on terms that may not be favorable to us. If we do raise additional capital through public or private equity or convertible debt offerings, the ownership interest of our existing stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect our stockholders' rights. If we raise additional capital through debt financing, we may be subject to covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we are unable to obtain additional funding from these or other sources, it may be necessary to significantly reduce our rate of spending through reductions in staff and delaying, scaling back, or stopping certain research and development programs.

Cash Flows

The following summarizes our cash flows for the periods indicated:

	YEAR ENDED DECEMBER 31,		SIX MONTHS ENDED JUNE 30,	
	2017	2018	2018	2019
	(in thousands)		(in thousands)	
Cash used in operating activities	$ (10,357)	$ (20,044)	$ (7,962)	$ (17,669)
Cash used in investing activities	(385)	(788)	(321)	(1,148)
Cash provided by financing activities	8,068	22,337	8,876	59,602
Net increase (decrease) in cash and cash equivalents and restricted cash	$ (2,674)	$ 1,505	$ 593	$ 40,785

Cash used in operating activities

For the six months ended June 30, 2019, cash used in operating activities was $17.7 million, which consisted of a net loss of $18.1 million and a net change of $0.3 million in our net operating assets and liabilities, partially offset by $0.8 million in non-cash charges. The net change in our operating assets and liabilities was primarily due to a decrease of accrued liabilities of $1.1 million and an increase of prepaid expenses of $0.8 million, partially offset by an increase in accounts payable of $1.4 million. The non-cash charges primarily consisted of stock-based compensation of $0.3 million and accrued interest on related party loan of $0.3 million.

For the six months ended June 30, 2018, cash used in operating activities was $8.0 million, which consisted of a net loss of $7.1 million and a net change of $1.0 million in our net operating assets and liabilities, partially offset by $0.2 million in non-cash charges. The net change in our operating assets and liabilities was primarily due to an increase in prepaid expenses of $0.6 million and a decrease in accounts payable of $0.2 million, and a decrease in income tax payable of $0.1 million. The non-cash charges primarily consisted of depreciation of $0.1 million.

In 2018, cash used in operating activities was $20.0 million, which consisted of a net loss of $22.7 million, partially offset by a net change of $2.2 million in our net operating assets and liabilities and $0.5 million in non-cash charges. The net change in our operating assets and liabilities was primarily due to an increase in accrued liabilities of $2.8 million resulting from an increase in research and development activities. This was partially offset by an increase in prepaid expenses of $0.3 million primarily associated with prepayments made for ongoing research and development activities conducted by third-party service providers. The non-cash charges primarily consisted of depreciation of $0.3 million and stock-based compensation of $0.2 million.

In 2017, cash used in operating activities was $10.4 million, which consisted of a net loss of $11.1 million, partially offset by a net change of $0.4 million in our net operating assets and liabilities and $0.3 million in non-cash charges. The net change in our operating assets and liabilities was primarily due to an increase in accrued liabilities of $0.3 million resulting from an increase in research and development activities. The non-cash charges primarily consisted of depreciation of $0.2 million and stock-based compensation of $0.1 million.

Cash used in investing activities

Cash used in investing activities was $1.1 million and $0.3 million for the six months ended June 30, 2019 and 2018, respectively, related to the purchases of lab equipment for research and development activities.

Cash used in investing activities was $0.8 million and $0.4 million in 2018 and 2017, respectively, related to the purchase of property and equipment.

Cash provided by financing activities

For the six months ended June 30, 2019, cash provided by financing activities was $59.6 million, which consisted primarily of $42.0 million of proceeds from the issuance of shares of our Series C convertible preferred stock $15.0 million of proceeds from the issuance of an unsecured promissory note to a related party which was subsequently settled as Series C convertible preferred stock in June 2019, and the receipt of a $2.5 million receivable that was due from a related party.

For the six months ended June 30, 2018, cash provided by financing activities was $8.9 million, which consisted of a loan from a related party of $5.0 million and proceeds from related party capital contribution of $3.9 million.

In 2018, cash provided by financing activities was $22.3 million, which consisted primarily of $17.3 million in proceeds from the issuance of shares of our Series B convertible preferred stock and $5.0 million from the issuance of an unsecured promissory note.

In 2017, cash provided by financing activities was $8.1 million, which consisted of proceeds from the issuance of shares of our Series B convertible preferred stock.

Contractual Obligations and Other Commitments

The following table summarizes our contractual obligations and other commitments as of June 30, 2019:

	PAYMENTS DUE BY PERIOD				
	LESS THAN 1 YEAR	1 TO 3 YEARS	3 TO 5 YEARS	MORE THAN 5 YEARS	TOTAL
	(in thousands)				
Contractual obligations:					
Operating lease obligations (1)	$ 1,785	$3,871	$4,107	$ 1,780	$11,543

(1) Payments due for our lease of office, laboratory and manufacturing space in Mountain View, California. The payments represent gross operating lease obligations and exclude sublease income.

In addition, we enter into agreements in the normal course of business with CROs, CMOs and other vendors for research and development services for operating purposes, which are generally cancelable upon written notice. These payments are not included in this table of contractual obligations.

We have not included milestone or royalty payments or other contractual payment obligations in the table above as the timing and amount of such obligations are unknown or uncertain. See Note 4 to our financial statements and our unaudited condensed financial statements included elsewhere in this prospectus.

Off-Balance Sheet Arrangements

We have not entered into any off-balance sheet arrangements, as defined in the rules and regulations of the SEC.

Critical Accounting Polices and Estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our financial statements, which have been prepared in accordance with U.S. GAAP. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported revenue generated, and reported expenses incurred during the reporting periods. Our estimates are based on our historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

While our significant accounting policies are described in the Note 2 to our financial statements and our unaudited condensed financial statements included elsewhere in this prospectus, we believe that the following critical accounting policies are most important to understanding and evaluating our reported financial results.

Accrued Research and Development Expenses

We record accruals for estimated costs of research, preclinical, clinical and manufacturing development, which are significant components of research and development expenses. A substantial portion of our ongoing research and development activities is conducted by third-party service providers, CROs and CMOs. Our contracts with the CROs and CMOs generally include fees such as initiation fees, reservation fees, costs related to animal studies and safety

tests, verification run costs, materials and reagents expenses, taxes, etc. The financial terms of these contracts are subject to negotiations, which vary from contract to contract and may result in payment flows that do not match the periods over which materials or services are provided to us under such contracts. We accrue the costs incurred under agreements with these third parties based on estimates of actual work completed in accordance with the respective agreements. We determine the estimated costs through discussions with internal personnel and external service providers as to the progress, or stage of completion or actual timeline (start-date and end-date) of the services and the agreed-upon fees to be paid for such services. For the periods presented, there have been no material differences from our estimated accrued research and development expenses to actual expenses.

Stock-based Compensation

We account for stock-based compensation by measuring and recognizing compensation expense for all share-based awards made to employees and directors based on estimated grant-date fair values. We use the straight-line method to allocate compensation cost to reporting periods over the requisite service period, which is generally the vesting period, and estimates the fair value of share-based awards to employees and directors using the Black-Scholes option-pricing valuation model. The Black-Scholes model requires the input of subjective assumptions, including fair value of common stock, expected term, expected volatility, risk-free interest rate and expected dividends, which are described in greater detail below. We account for forfeitures as they occur. Stock-based compensation awarded to non-employees for the years ended December 31, 2017 and 2018, and the six months ended June 30, 2019, was not material. Disclosures related to stock-based compensation have been included for employee stock-based compensation only. As a result of the adoption of ASU No. 2018-07, *Improvements to Nonemployee Share-Based Payment Accounting*, effective January 1, 2019, there is no change in the measurement and recognition of the compensation expense between employee and non-employee during the six months ended June 30, 2019.

Fair Value of Common Stock—Historically, as there has been no public market for our common stock, the fair value of our common stock was determined by our board of directors based in part on valuations of our common stock prepared by a third-party valuation firm. See the subsection titled “Fair Value of Common Stock” below.

Expected Term—The expected term of the options represents the average period the stock options are expected to remain outstanding. As we do not have sufficient historical information to develop reasonable expectations about future exercise patterns and post-vesting employment termination behavior, the expected term of options granted is derived from the average midpoint between the weighted average vesting and the contractual term, also known as the simplified method.

Expected Volatility—Since we are not yet a public company and do not have any trading history for our common stock, the expected volatility is based on the historical volatilities of the common stock of comparable publicly traded companies. We selected companies with comparable characteristics, including enterprise value, risk profiles, position within the industry, and, where applicable, with historical share price information sufficient to meet the expected life of our stock-based awards. We will continue to apply this process until enough historical information regarding the volatility of our own stock price becomes available.

Risk-Free Interest Rate—The risk-free interest rate is based on the yield of zero-coupon U.S. Treasury notes as of the grant date with maturities commensurate with the expected term of the awards.

Expected Dividends—The expected dividends assumption is based on our expectation of not paying dividends in the foreseeable future; therefore, we used an expected dividend yield of zero.

Assumptions we used in applying the Black-Scholes option-pricing model to determine the estimated fair value of our stock options granted involve inherent uncertainties and the application of significant judgment. As a result, if factors or expected outcomes change and we use significantly different assumptions or estimates, our equity-based compensation could be materially different.

Fair Value of Common Stock

Historically, for all periods prior to this initial public offering, the fair values of the shares of common stock underlying our share-based awards were estimated on each grant date by our board of directors or a committee thereof. Given the absence of a public trading market for our common stock, our board of directors and committee exercised reasonable judgment and considered a number of objective and subjective factors to determine the best

estimate of the fair value of our common stock, including our stage of development; our actual operating results and financial performance; progress of our research and development efforts; conditions in the industry and economy in general; the rights, preferences and privileges of our convertible preferred stock relative to those of our common stock; the likelihood of achieving a liquidity event for the holders of our common stock, such as an initial public offering or a sale of our company, given prevailing market conditions; equity market conditions affecting comparable public companies; the lack of marketability of our common stock and the results of independent third-party valuations prepared in accordance with the guidance provided by the American Institute of Certified Public Accountants 2013 Practice Aid, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation* (Guide). The Guide identifies various available methods for allocating enterprise value across classes and series of capital stock to determine the estimated fair value of common stock at each valuation date.

For valuations prior to December 31, 2018, we used the option-pricing method (OPM). Under the OPM, shares are valued by creating a series of call options with exercise prices based on the liquidation preferences and conversion terms of each equity class. The estimated fair values of the preferred and common stock are inferred by analyzing these options. Specifically, we use the OPM backsolve method to estimate the fair value of our common stock, which derives the implied equity value for one type of equity security from a contemporaneous transaction involving another type of security, shares of our Series B convertible preferred stock in this instance. We used the OPM backsolve method because we were at an early stage of development and future liquidity events were difficult to forecast. We applied a discount for lack of marketability to account for a lack of access to an active public market.

For our valuation as of June 30, 2019, we used a combination of the OPM and the probability weighted expected return method (PWERM) and considered two types of future event scenarios: an initial public offering and remaining private. PWERM is a scenario-based analysis that estimates value per share based on the probability weighted present value of expected future investment returns, considering each of the possible outcomes available to us, as well as the economic and control rights of each share class. This method is generally considered appropriate to use when there are several distinct scenarios to be considered. We determined the relative probability of each type of future event scenario based on an analysis of market conditions at the time, including then-current initial public offering valuations of similarly situated companies, and expectations as to the timing and likely prospects of the future-event scenarios.

To derive the fair value of the common stock for each scenario using the hybrid PWERM and OPM, we calculated the proceeds to the common stockholders based on the preferences and priorities of the preferred and common stock. We then applied a discount for lack of marketability to the common stock to account for the lack of access to an active public market.

Application of these approaches involves the use of estimates, judgment, and assumptions that are highly complex and subjective, such as those regarding our expected future revenue, expenses, and cash flows, discount rates, market multiples, the selection of comparable companies, and the probability of future events. Changes in any or all of these estimates and assumptions, or the relationships between those assumptions, impact our valuations as of each valuation date and may have a material impact on the valuation of common stock.

The assumptions underlying these valuations represent our management's best estimate, which involve inherent uncertainties and the application of management judgment. As a result, if factors or expected outcomes change and we use significantly different assumptions or estimates, our stock-based compensation expense could be materially different. Following the completion of the offering, the fair value of our common stock will be determined based on the quoted market price of our common stock.

The intrinsic value of all outstanding options as of June 30, 2019 was $201.6 million, $127.7 million of which related to unvested options as of such date, based on the estimated fair value of our common stock of $16.00 per share, the midpoint of the price range set forth on the cover page of this prospectus.

Quantitative and Qualitative Disclosures about Market Risk

The primary objectives of our investment activities are to ensure liquidity and to preserve capital. We are exposed to market risks in the ordinary course of our business. These risks primarily include interest rate sensitivities. There was no material foreign currency risk for the six months ended June 30, 2019 or the years ended December 31, 2017

and 2018. We held cash and cash equivalents of $1.9 million and $42.7 million as of December 31, 2018 and June 30, 2019, respectively. We generally hold our cash in interest-bearing money market accounts. We held interest-bearing liabilities of $5.0 million as of December 31, 2018 in the form of an unsecured promissory note, which bore interest at a rate of 3.6% per year, and held no interest-bearing liabilities as of June 30, 2019. Historical fluctuations in interest rates have not been significant for us. Due to the short-term maturities of our cash equivalents, an immediate 10% relative change in interest rates would not have a material effect on the fair market value of our cash equivalents.

Recent Accounting Pronouncements

See Note 2 to our financial statements and our unaudited condensed financial statements included elsewhere in this prospectus for more information about recent accounting pronouncements, the timing of their adoption, and our assessment, to the extent we have made one yet, of their potential impact on our financial condition of results of operations.

Emerging Growth Company Status

We are an emerging growth company (EGC), as defined in the Jumpstart Our Business Startups Act of 2012 (JOBS Act). We will remain an EGC until the earliest of: (i) the last day of the fiscal year in which we have total annual gross revenues of $1.07 billion or more; (ii) the last day of the fiscal year following the fifth anniversary of the completion of our IPO; (iii) the date on which we have issued more than $1.0 billion in nonconvertible debt during the previous three years; or (iv) the date on which we are deemed to be a large accelerated filer under the rules of the SEC, which generally is when a company has more than $700 million in market value of its stock held by non-affiliates, has been a public company for at least 12 months and has filed one annual report on Form 10-K. Under the JOBS Act, emerging growth companies may delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act until such time as those standards apply to private companies. We have elected to avail ourselves of this exemption from new or revised accounting standards and, therefore, will not be subject to the same new or revised accounting standards as other public companies that are not EGCs. As a result, our financial statements may not be comparable to companies that comply with the new or revised accounting pronouncements as of public company effective dates.

In addition, we intend to rely on the other exemptions and reduced reporting requirements provided by the JOBS Act. Subject to certain conditions set forth in the JOBS Act, if as an EGC we intend to rely on such exemptions, we are not required to, among other things: (i) provide an auditor's attestation report on our system of internal controls over financial reporting pursuant to Section 404(b) of the Sarbanes-Oxley Act of 2002; (ii) provide all of the compensation disclosure that may be required of non-emerging growth public companies under the Dodd-Frank Wall Street Reform and Consumer Protection Act; (iii) comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements (auditor discussion and analysis); and (iv) disclose certain executive compensation-related items such as the correlation between executive compensation and performance and comparisons of the Chief Executive Officer's compensation to median employee compensation.

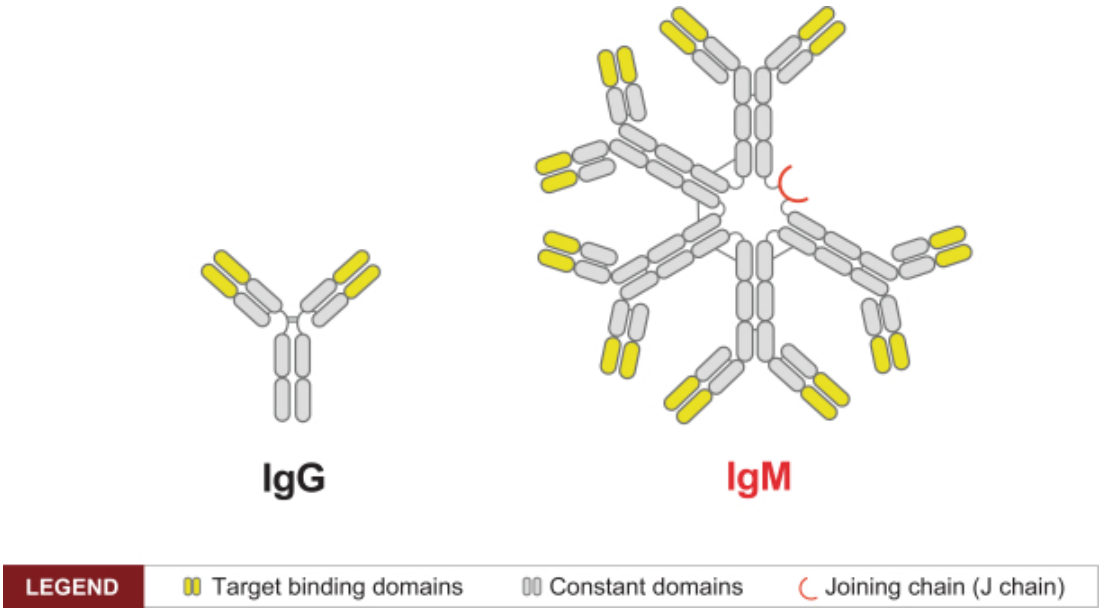
BUSINESS

Overview

We are a biotechnology company pioneering the development of engineered IgM antibodies for the treatment of cancer patients. IgM antibodies have inherent properties that we believe may enable them to bind more strongly to cancer cells than comparable IgG antibodies. We have created a proprietary IgM antibody technology platform that we believe is particularly well suited for developing T cell engagers, receptor cross-linking agonists and targeted cytokines. Our lead product candidate, IGM-2323, is a bispecific T cell engaging IgM antibody targeting CD20 and CD3 proteins, and we intend to dose the first patient in a Phase 1 clinical trial for the treatment of relapsed/refractory B cell Non-Hodgkin's lymphoma (NHL) patients in 2019. Our second product candidate will be an IgM antibody targeting Death Receptor 5 (DR5) proteins, and we plan to file an investigational new drug application (IND) for the treatment of patients with solid and hematologic malignancies in 2020. We believe that we have the most advanced research and development program focused on engineered therapeutic IgM antibodies. We have created a portfolio of patents and patent applications, know-how and trade secrets directed to our platform technology, product candidates and manufacturing capabilities, and we retain worldwide commercial rights to all of our product candidates and the intellectual property related thereto.

Immunoglobulin G (IgG) and Immunoglobulin M (IgM) are classes of antibodies that are naturally produced by the human immune system and are distinguishable by their structural properties.

Structural Comparison of IgG and IgM Antibodies



IgM antibodies have 10 binding domains compared to 2 for IgG antibodies. This inherent biological advantage enables:

- Stronger binding to cell surface targets, including those with low expression levels, which may result in better and more complete targeting of cancer cells;
- Stronger binding to difficult targets, such as tumor associated carbohydrates and glycosylated proteins, which has the potential to expand the range of addressable cancer targets;
- Greater ability to cross-link cell surface receptors, which may significantly enhance cellular signaling for killing cancer cells or stimulating T cells, which are a type of white blood cell that are an essential part of the immune system; and

- Substantially greater ability to utilize the complement dependent cytotoxicity (CDC) mechanism of killing targeted cells, which kills cancer cells without requiring the presence of immune cells.

Despite these inherent biological advantages, while IgG antibodies have been broadly developed as therapeutics for cancer, we believe the therapeutic potential of engineered IgM antibodies has remained largely unexplored.

Our Platform

We created our IgM platform to expand upon the inherent properties of IgM antibodies and to allow for the rapid development of engineered therapeutic antibodies. Significantly, our IgM platform allows us to create IgM antibodies with higher affinity and avidity than naturally occurring IgM antibodies. We believe our platform also allows us to utilize the strong and durable binding of IgM antibodies to kill cancer cells with T cells, induce programmed death of cancer cells or deliver immune stimulating cytokines to the region of the bound cell.

The versatility of our IgM platform positions us to evaluate multiple approaches to treat patients with solid and hematologic malignancies. Our ability to develop engineered IgM antibodies against various targets allows for the creation of a broad and differentiated product pipeline. Our initial efforts are focused on three broad applications of IgM antibodies:

- **T cell engagers:** T cell to cancer cell engagement, including CD20 x CD3, CD123 x CD3, CD38 x CD3 and solid tumor target x CD3 programs, which we believe may have the potential to kill cancer cells through T cell directed cellular cytotoxicity (TDCC) and CDC while maintaining a favorable tolerability profile.
- **Receptor cross-linking agonists:** Tumor Necrosis Factor receptor Superfamily (TNFrSF) agonists, including DR5, which induces programmed death of cancer cells, as well as OX40, glucocorticoid-induced TNFr-related protein (GITR) and other TNFrSF members, which we believe may enhance the ability of the immune system to fight cancer.
- **Targeted cytokines:** Targeted cytokine delivery, including interleukin-15 (IL-15), which we believe may be helpful in inducing and maintaining immune responses to cancer.

Our Pipeline

Our lead product candidate, IGM-2323, is a CD20 x CD3 bispecific IgM antibody for the treatment of patients with CD20-positive cancer. CD20 is a protein commonly expressed on the surface of NHL cells and chronic lymphocytic leukemia (CLL) cells, while CD3 is a protein expressed on the surface of T cells. IGM-2323 contains 10 binding domains for CD20 and one binding domain for CD3. In our preclinical studies, IGM-2323 strongly bound to CD20-positive cancer cells and induced potent T cell dependent and complement dependent cancer cell death, including those cells with low levels of CD20. In addition, we observed lower cytokine release with IGM-2323 relative to comparable IgG bispecific T cell engaging antibodies in our preclinical studies, which may result in reduced risk of the serious adverse effects of cytokine release syndrome (CRS). We plan to begin evaluating IGM-2323 in a Phase 1 clinical trial in relapsed/refractory B cell NHL patients, which is B cell NHL that has either not responded to initial treatment or responded to treatment but then returns, in 2019. Treatment with combination chemo-immunotherapy, such as with rituximab-based regimens, or high dose chemotherapy and bone marrow transplant, is generally effective and may cure approximately 50-70% of patients with aggressive B cell NHL. Indolent B cell NHL, which represents approximately 40% of B cell NHL cases, remains mostly incurable at advanced stages with current therapies.

Our second product candidate will be an IgM antibody targeting DR5 for the treatment of patients with solid and hematologic malignancies. DR5 receptors are expressed on a broad range of solid tumors as well as leukemias and lymphomas, but their intracellular apoptotic signaling requires efficient cross-linking of at least three DR5 receptors. Our DR5 IgM antibodies demonstrated significantly enhanced apoptotic signaling compared to an IgG antibody with the same binding domains, resulting in >1,000 fold increased potency in killing cancer cells from multiple cancer cell types in our studies outside of living organisms (*in vitro*) studies. In our preliminary studies in living organisms (*in vivo*), specifically cynomolgus monkeys, no untoward toxicity was observed with our DR5 IgM antibodies. We expect to file an IND for a DR5 IgM antibody in 2020.

The following table highlights our lead programs:

Mode	Target	Indication	Phase of Development					Worldwide Commercial Rights	Anticipated Milestone
			Discovery	Preclinical	Phase 1	Phase 2	Phase 3		
T cell Engager	IGM-2323 (CD20x CD3)	NHL and CLL						IGM	Initial Phase 1 data for r/r B cell NHL: 2020
Receptor Cross-linking Agonist	IgM Antibody (DR5)	Solid and Hematologic Malignancies						IGM	IND filing: 2020

The following table highlights discovery programs that we are prioritizing:

Mode	Target	Indication	Worldwide Commercial Rights
T cell Engagers	CD123 x CD3	Acute Myeloid Leukemia	IGM
	CD38 x CD3	Multiple Myeloma	
	Multiple Targets x CD3	Multiple Solid Tumors	
Receptor Cross-linking Agonists	OX40	Solid and Hematologic Malignancies	IGM
	GITR		
Targeted Cytokines	Multiple Targets x IL-15	Solid and Hematologic Malignancies	IGM

We estimate that these discovery programs are at least two years away from clinical studies, assuming they meet our requirements for advancement. We do not anticipate advancing all of these programs into clinical testing, and some of these programs may be supplanted by other IgM discovery programs.

Our Team

Our management team and board of directors have decades of biotechnology experience and perspective in areas such as cancer biology, immunotherapy, immunology, antibody discovery, protein engineering and clinical development. They bring a strong history of leadership, innovation and research and development experience at leading companies, including Roche/Genentech, Amgen, Gilead Sciences, Celgene, Millennium Pharmaceuticals, Shire, Kite Pharma, Bavarian Nordic, Sutro Biopharma and Northern Biologics. Members of our team were involved in the discovery, development or commercialization of multiple therapeutics, including Tecentriq, Yescarta, Zydelig, Avastin, Lucentis, Vectibix, Activase, TNKase and Kogenate. Our team is further supported by a strong group of investors that share our commitment to developing IgM antibodies for the treatment of cancer patients. Since 2010, we have raised approximately $162.0 million through convertible preferred stock financings. Our key investors include Haldor Topsøe Holding A/S (HTH), a global leader in catalysis and chemical process technology, and leading institutional investors, Baker Brothers, Redmile Group, Janus Henderson Investors and Vivo Capital.

Our Strategy

Our strategy is to sustain and extend our global leadership in the development of engineered IgM antibodies for therapeutic use. We plan to achieve this by utilizing our proprietary IgM technology to develop antibodies with differentiated product profiles and the ability to address difficult to treat patients with cancers and other serious diseases. This strategy encompasses the following key elements:

- ***Advance IGM-2323 through clinical development in B cell NHL to establish our IgM platform as the leading CD3 T cell engaging technology.*** IGM-2323 will be our first clinical stage product candidate developed using our IgM platform and we believe it will be the only engineered therapeutic IgM antibody in active

clinical development at that time. The FDA has accepted our IND for IGM-2323 and we intend to dose the first patient in a Phase 1 clinical trial as a monotherapy for the treatment of relapsed/refractory B cell NHL patients in 2019. We plan on initially developing IGM-2323 for both aggressive and indolent lymphomas as a single agent in relapsed/refractory patients. Further development may include other CD20 expressing hematologic malignancies, such as CLL, and combination therapy in treatment-naïve lymphoma.

- ***Progress a DR5 IgM antibody into clinical trials to establish the efficacy of our IgM antibodies in targeting members of the TNFrSF.*** We plan to file an IND for our second product candidate in 2020 and, if accepted, to advance it into clinical trials in solid and hematologic malignancies. We plan on initially developing our DR5 IgM antibody as a single agent in solid and hematologic malignancies that have failed standard treatment. Further development will include combination with other therapies, which may include a broad range of treatment-resistant solid and hematologic malignancies.
- ***Utilize our proprietary T cell engaging and immune stimulating technologies to expand our pipeline of IgM antibody product candidates.*** Our IgM platform enables us to rapidly create a broad pipeline of product candidates. We are currently prioritizing: CD3 T cell engaging antibodies; T cell stimulating antibodies, including antibodies that target T cell stimulatory members of the TNFrSF; and antibodies that are intended to deliver IL-15 to a target to enhance cancer immune responses while limiting systemic toxicity. We will prioritize product candidates based on a range of factors, including strength of preclinical data, single agent clinical benefit, efficiency of clinical development paths and market opportunities.
- ***Build antibody manufacturing capabilities to support our future clinical trials and provide commercial supply for any approved product candidates.*** Manufacturing IgM antibodies is a complex process and represents a critical component to our long-term success. We have invested significant resources developing our manufacturing processes and know-how to enable us to manufacture our IgM antibodies at scale. We believe developing our internal manufacturing capacity is important to enable further process improvements, maintain quality control, limit our reliance on contract manufacturers and protect our trade secrets and other intellectual property. We plan to build out and expand our own manufacturing facilities to produce our product candidates in sufficient quantities to conduct clinical trials and manufacture commercial supply for approved products.
- ***Directly commercialize any approved product candidates in key markets alone or with strategic partners.*** We retain exclusive worldwide commercial rights to all of our product candidates and intend to pursue clinical development programs with the goal of obtaining regulatory approval in the United States and internationally. We intend to directly commercialize our product candidates in key markets either alone or with partners and may enter into strategic collaborations or other partnerships to accelerate our development timelines and maximize the worldwide commercial potential of any approved product candidates.
- ***Continue to expand our intellectual property portfolio to further protect our IgM platform and our product candidates.*** We believe we are the global leader in the development of engineered IgM antibodies for therapeutic use, and we have created an extensive intellectual property portfolio to protect our leadership and novel approaches in this field. The intellectual property surrounding our IgM platform consists of patents and patent applications, trade secrets and know-how, and we plan to expand this portfolio as we continue to develop our IgM platform.

We believe that if we are successful in bringing an IgM antibody to market, particularly one that is more effective and safer than comparable IgG antibodies, we will significantly alter the course of future therapeutic antibody development.

Our Differentiated Approach and Proprietary Platform

We are developing IgM antibodies that have properties which we believe may enable them to bind more strongly to cancer cells than comparable IgG antibodies in many therapeutic applications. IgM antibodies have 10 binding domains compared to 2 for IgG antibodies, which results in far greater binding power to a cell surface target.

Over the past 40 years, the biotechnology industry's development of antibodies has yielded effective therapeutic drugs for the treatment of patients with a variety of diseases including cancer, autoimmune diseases and infectious diseases. According to market research, there were over 70 approved antibody related therapies generating over

$120 billion in reported worldwide sales in 2018. All of these antibodies are members of the IgG class. We are pioneering the development of new therapies based on the IgM class of antibodies. Our near and medium term efforts are focused on oncology, but we believe our IgM antibodies could have therapeutic applications across a wide range of diseases.

There are two measures of target binding strength that are generally used in connection with antibodies:

- Affinity—the binding strength of each individual binding domain of the antibody bound to the target; and
- Avidity—the combined binding strength of all of the binding domains of the antibody bound to the target.

The greater number of binding domains of an IgM antibody results in far greater avidity to a cell surface target compared with an IgG antibody with the same affinity per binding domain. The greater number of binding domains also allows IgM antibodies to bind more cell surface targets in close proximity with a single antibody. The inherent biological advantages of IgM antibodies enable:

- Stronger binding to cell surface targets, including those with low expression levels, which may result in better and more complete targeting of cancer cells;
- Stronger binding to difficult targets, such as tumor associated carbohydrates and glycosylated proteins, which has the potential to expand the range of addressable cancer targets;
- Greater ability to cross-link cell surface receptors, which may significantly enhance cellular signaling for killing cancer cells or stimulating T cells; and
- Substantially greater ability to utilize the complement dependent cytotoxicity (CDC) mechanism of killing targeted cells, which kills cancer cells without requiring the presence of immune cells.

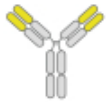
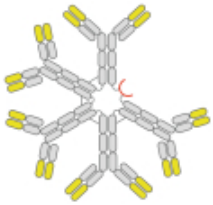
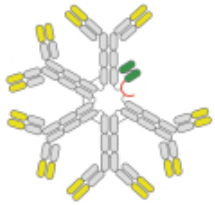
Development of IgM antibodies has been historically limited by difficulties encountered in the recombinant expression and manufacture of these antibodies. Through our focused efforts over the last eight years, we have developed a broad range of skills, knowledge and trade secrets that have allowed us to successfully express and manufacture a wide range of IgM antibodies.

We created our IgM platform to expand upon the inherent qualities of IgM antibodies and to allow for the rapid development of engineered therapeutic antibodies. Through our efforts, we have developed a wide variety of proprietary methods and techniques designed to achieve the following goals:

- **Expression and manufacture:** Overcome the traditional difficulties the pharmaceutical industry has experienced in recombinantly expressing and manufacturing IgM antibodies;
- **Engineered IgM antibodies:** Create IgM antibodies recombinantly, by transferring IgG binding domains to IgMs, to include the benefits of high affinity and high specificity IgG variable regions;
- **Bispecific platform:** Create bispecific antibodies with the benefits of the high avidity of 10 binding domains to one target combined with one binding domain to a second target;
- **Improved half-life:** Extend the serum half-life of recombinantly generated IgM antibodies; and
- **Complement modulation:** Modulate the CDC mechanism of IgM antibodies.

We believe that our IgM platform creates significant competitive advantages and can serve as the foundation for the development of a broad range of IgM based therapeutic drugs. The following table compares the key properties of IgG antibodies to those of naturally occurring IgM antibodies, as well as to our engineered IgM antibodies:

Properties of IgG vs IgM Antibodies

Structure	 **IgG**	 **Naturally Occurring IgM**	 **Engineered IgM**
Binding domains	2	10	10
Binding valency	Bivalent	Multivalent	Multivalent
Affinity	High	Low to Medium	High
Avidity	Low	Medium	High
Binding to low expression targets	Low	Medium	High
Binding to carbohydrate antigens	Low	Medium	High
Mechanism of cell killing	ADCC + CDC	CDC	TDCC + CDC
Antibody construct	Heavy chains Light chains	Heavy chains Light chains Jchain	Heavy chains Light chains Modified Jchain
Molecular weight	150kDa	960kDa	≥960kDa

LEGEND — Target binding domains; CD3 binding domain; Constant domains; J chain

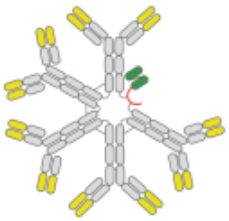
Our Antibodies

T cell Engagers

We have been able to utilize the natural features of IgM antibodies to create unique and patent protected bispecific T cell engagers, which we believe may have the potential to kill cancer cells through TDCC and CDC while maintaining a favorable tolerability profile. Bispecific T cell engagers are designed to simultaneously target a desired tumor associated antigen on a cancer cell and CD3 (a protein that is expressed on the surface of T cells) and redirect the T cells to kill the cancer cells. In contrast to other bispecific antibody formats that bind to one or two target molecules on the surface of the cancer cell and to one CD3 molecule on the surface of the T cell, our IgM bispecific format provides 10 binding domains to the cancer cell and one binding domain to CD3. We believe that our IgM bispecific antibodies may successfully bind to cancer cells for longer periods and with more avidity compared to IgG bispecific antibodies, which may prove to be particularly advantageous for those cancer cells that express relatively lower amounts of the targeted protein on their surface.

Illustrated in the table below are several classes of bispecific T cell engaging antibodies currently in development: (i) single chain antibodies being developed by third parties that have one target binding domain and one CD3 binding domain that are small in size; (ii) antibodies being developed by third parties using IgG formats that have one or two target binding domains for the cancer cell (two binding domains increases target binding avidity) and one CD3 binding domain; and (iii) our IgM antibody with 10 target binding domains for the cancer cell (10 binding domains produces higher target binding avidity) and one CD3 binding domain.

Properties of Cancer Cell Target x CD3 T Cell Engager Antibodies

Structure (Cancer cell targets x CD3)	 **Bispecific T cell/Target Engager Single Chain Binding Units**	 **Bispecific T cell/Target Engager IgG**	 **Bispecific T cell/Target Engager IgM**
Mechanism of cell killing	TDCC	TDCC	TDCC + CDC
Binding sites to cancer cell targets	1	1 or 2	10
Binding sites to CD3	1	1	1
Dosing	Continuous infusion	Weekly to every other week	Planned weekly
Cytokine Release Syndrome (CRS)	Observed CRS in non-human primates; observed CRS in clinic	Observed CRS in non-human primates; observed CRS in clinic	No CRS observed in non-human primates

In our *in vitro* studies, IgM antibodies bind antigens with high avidity that results in the IgM antibody remaining attached to the target for longer periods of time than an IgG antibody. We believe that this durable binding property will translate to an increased residence time on cancer cells and will increase the chance that a T cell will find and kill the cancer cell while the T cell engager is bound to the cancer cell.

While IgG bispecific T cell engaging antibodies have demonstrated evidence of clinical benefit across several cancer types, serious adverse events and tolerability issues have been reported, including cytokine release syndrome (CRS). CRS is characterized by fever, hypotension, blood coagulation abnormalities and capillary leak. Potentially life threatening effects of CRS include cardiac dysfunction, organ failure, respiratory distress syndrome and neurologic toxicity. Such findings have also been associated with other T cell engaging approaches, including Chimeric Antigen Receptor-T cell therapies (CAR-T). Patient deaths have resulted from CRS in the clinical testing of IgG bispecific T cell engaging antibodies and CAR-T. These serious adverse events can also result in dose limiting toxicities of IgG bispecific T cell engaging antibodies and potentially limit the optimal efficacy of these therapeutic agents. The potential for CRS can also result in the need for high levels of patient monitoring, expense and inconvenience.

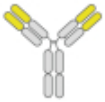
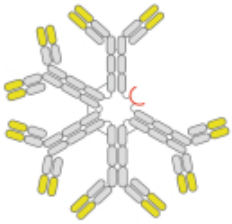
Our IgM based CD20 x CD3 bispecific antibody has shown no apparent CRS symptoms in our non-human primate studies at tested doses significantly higher than doses currently safely achievable with IgG bispecific antibodies. In addition, in human blood cell *ex vivo* studies, we observed a much lower cytokine release profile for our IgM based CD20 x CD3 bispecific antibody compared to an IgG bispecific antibody with the same CD20 and CD3 binding domains. We believe that the density of the immune synapses, the interfaces joining T cells and cancer cells, formed by our CD20 x CD3 IgM bispecific antibody between a T cell and CD20 positive target cell may be lower than the density of the immune synapses formed by bispecific IgG antibodies and CAR-T. The larger size of our bispecific

IgM, we believe, may result in fewer CD3 molecules and T cell receptors being bound per immune synapse, similar to the natural interaction of T cell receptors and tumor peptide MHC (major histocompatibility complex), a set of cell surface proteins that recognize foreign molecules as part of the immune system, as compared to higher density CD3 binding in the case of CAR-T and other bispecific T cell and target engager formats. As a consequence, we believe this may result in reduced cytokine release with our IgM bispecific antibody than with CAR-T and bispecific T cell and target engagers.

Receptor Cross-linking Agonists

We are also using our IgM platform to develop IgM antibodies that bind to members of the TNFrSF. Members of the TNFrSF must be bound in clusters of at least three in order to send a strong biological signal to the cell. This family includes targets that will cause the death of cancer cells, such as DR5, and targets that will cause the proliferation of T cells, such as OX40 and GITR.

Receptor Cross-linking Agonist IgG vs IgM Antibodies

Structure	 IgG	 IgM
Binding sites	2	10
Ability to cross-link and cluster	Limited	Strong
Functional properties	Weak agonist	Strong agonist
Molecular weight	150kDa	960kDa

LEGEND — Target binding domains — Constant domains — J chain

There have been multiple attempts to create IgG based therapeutic antibodies directed at DR5, OX40 and GITR. However, since IgG antibodies naturally bind only two DR5, OX40 or GITR cell surface proteins, their bivalent nature inherently limits their signaling efficacy. In contrast, we are utilizing the 10 binding domains of IgM antibodies to more efficiently cross-link these molecules on the cell surface. In multiple *in vitro* cell studies, we have observed that IgM antibodies have much greater potency than IgG antibodies with the same binding domains.

Targeted Cytokines

We are leveraging our IgM platform to create bispecific IgM antibodies with high avidity to selected cell surface targets to deliver potent, immune stimulating cytokines. These IgM antibodies will initially target the delivery of IL-15 to induce immune cell stimulation and proliferation. Targeted delivery of cytokines is designed to reduce systemic toxicities of cytokine therapy while enhancing immune system activity in the tumor microenvironment. Stimulation of the IL-15 pathway may be important in strengthening and maintaining both the endogenous and the synthetic T cell immune responses.

We believe that our IgM platform has certain inherent advantages for this application. Importantly, we believe that the high avidity and long-lasting binding of our IgM antibodies may help to effectively bind and deliver the cytokine to the target cell for an extended period. We also believe that the high avidity of the IgM antibodies may allow binding and delivery of the cytokine to cells that have relatively low density of the surface target. Also, the ability of IgM antibodies to cross-link T cell stimulating targets such as OX40 and GITR may provide very potent T cell stimulation when combined with IL-15 delivery. Targeted IL-15 may also provide complementary effects when combined in a treatment regimen with our T cell engaging antibodies, such as CD20 x CD3 or our solid tumor T cell engagers.

Our Product Candidates

We are leveraging our IgM platform to discover and develop product candidates for the treatment of cancer patients. Our lead product candidate, IGM-2323, is a CD20 x CD3 bispecific IgM antibody designed to treat patients with B cell NHL and other B cell malignancies. Our second product candidate will be an IgM antibody targeting DR5 for the treatment of patients with solid and hematologic malignancies.

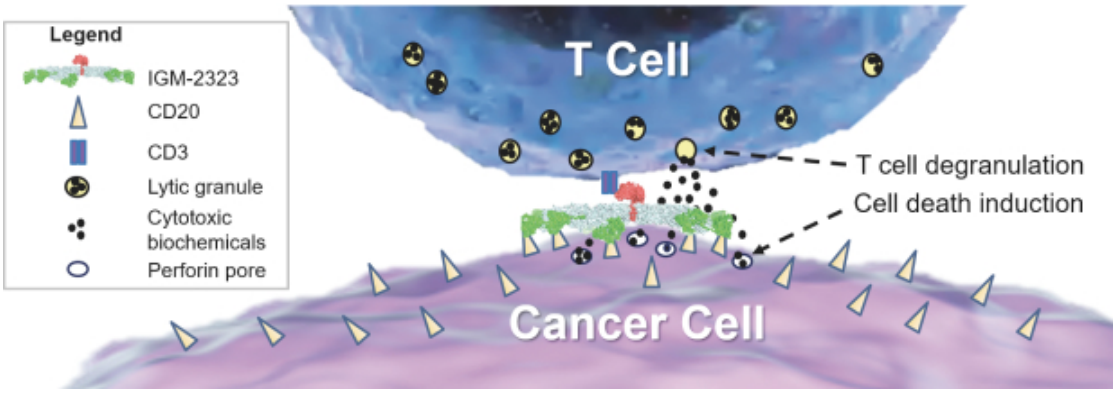
Mode	Target	Indication	Phase of Development					Worldwide Commercial Rights	Anticipated Milestone
			Discovery	Preclinical	Phase 1	Phase 2	Phase 3		
T cell Engager	IGM-2323 (CD20x CD3)	NHL and CLL						igm	Initial Phase 1 data for r/r B cell NHL: 2020
Receptor Cross-linking Agonist	IgM Antibody (DR5)	Solid and Hematologic Malignancies						igm	IND filing: 2020

IGM-2323: CD20 x CD3 Bispecific IgM Antibody

Our lead product candidate, IGM-2323, is a CD20 x CD3 bispecific IgM antibody designed to treat patients with B cell NHL and other B cell malignancies. Our initial therapeutic goal with IGM-2323 is to safely and effectively treat relapsed/refractory B cell NHL patients. CD20 is a protein that is frequently expressed on the surface of malignant B cells, while CD3 is a protein that is expressed on the surface of T cells and is an essential activating molecule of the T cell. IGM-2323 has 10 binding domains to CD20 and a single binding domain to CD3 (specifically CD3ε). In addition, IGM-2323 contains a human serum albumin molecule attached to the Joining chain (J chain) to enhance its pharmacokinetic properties. The J chain naturally occurs in IgM antibodies and joins the IgM subunits into pentameric antibodies.

IGM-2323 is designed to simultaneously and stably bind a CD20 expressing cancer cell as well as CD3 on a cytotoxic T cell, bringing both cells into close proximity. This interaction mimics the normal T cell activation pathway leading the T cell to recognize and kill the cancer cell by releasing cytotoxic biochemicals (perforins and granzymes) that penetrate and perforate the cancer cell. The TDCC mediated killing mechanism of IGM-2323 on CD20 expressing cancer cells is shown in the diagram below.

IGM-2323 Binding to a CD20 Positive Cancer Cell and Inducing TDCC

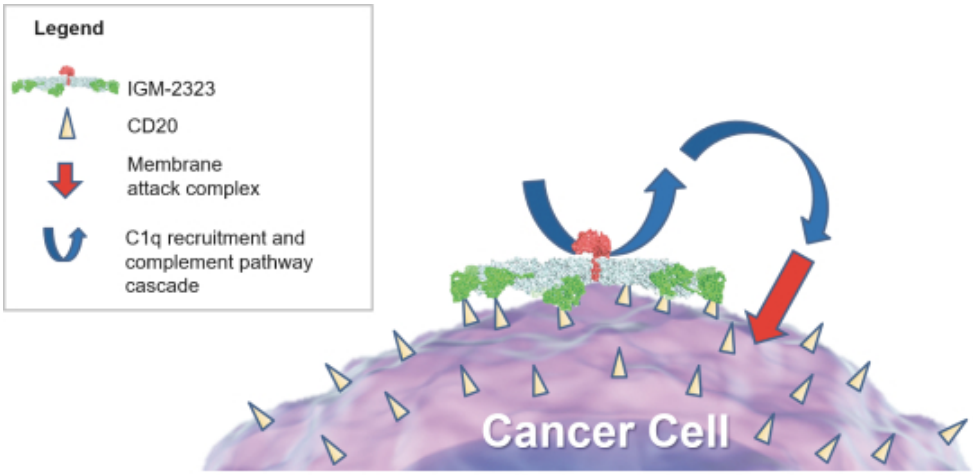


Schematic diagram of IGM-2323 binding a CD20 expressing B cancer cell and a CD3 expressing T cell for T cell directed cellular cytotoxicity (TDCC). Shown is the IGM-2323 induced T cell release (degranulation) of cytotoxic biochemicals from T cell lytic granules in close proximity to the cancer cell to induce perforin pore formation in the cell membrane, allowing cell entry of the cytotoxic biochemicals and induction of cancer cell death.

IGM-2323 also employs an additional mechanism to kill CD20 expressing cancer cells, known as complement dependent cytotoxicity (CDC). CDC is a mechanism by which antibodies can mediate specific targeted cell killing by

activating the complement system. Components of the complement system are naturally present in humans, and IgM antibodies are the most efficient antibodies at engaging the complement system for CDC, with an approximately 100 fold increase in CDC relative to comparable IgG CD20 antibodies. The CDC mediated killing mechanism of CD20 expressing cancer cells by IGM-2323 is shown in the diagram below.

IGM-2323 Binding to a CD20 Positive Cancer Cell and Inducing CDC



Schematic diagram of IGM-2323 binding a CD20 expressing B cancer cell and recruiting components of the complement system from the serum to induce complement dependent cytotoxicity (CDC) through formation of a membrane attack complex.

We believe the dual mechanisms of action of IGM-2323, both TDCC and CDC, may further enhance its efficiency in eliminating CD20 expressing cancer cells and may decrease the likelihood of cancer escape or resistance.

Non-Hodgkin's Lymphoma

B cell NHL is a group of blood cell cancers that affect the lymphatic system. NHL is among the most common cancers in the United States and Europe with more than an estimated 74,000 and 115,000 new cases diagnosed in 2018, respectively. In the United States, NHL is expected to cause approximately 20,000 cancer-related deaths in 2019. CD20 expressing B cell derived lymphomas constitute approximately 85% of NHL cases. The natural progression of NHL varies widely across multiple forms, including aggressive forms, such as diffuse large B cell lymphoma, and more slowly growing indolent forms, such as follicular lymphoma.

Systemic chemo-immunotherapy (alkylator based chemotherapy plus monoclonal antibody (mAb) therapy directed at the B cell antigen CD20) is the current standard of care of treatment for advanced stage disease in most NHL patients. This standard of care for B cell NHL generally includes treatment with the CD20 IgG antibody rituximab. While this treatment is generally effective, a significant percentage of patients are either initially refractory to rituximab treatment or eventually relapse following rituximab treatment. For instance, some patients may enter treatment with relatively low CD20 expression on their cancer cells and present with refractory disease. Other patients may have early success with rituximab treatment, yet eventually develop resistance to rituximab treatment due to selection pressure towards the survival of relatively lower CD20 expressing cancer cells resulting from the rituximab therapy. Treatment with combination chemo-immunotherapy, such as with rituximab, or high dose chemotherapy and bone marrow transplant, is generally effective and may cure approximately 50-70% of patients with aggressive B cell NHL. Indolent B cell NHL, which represents approximately 40% of cases, remains mostly incurable at advanced stages with current therapies.

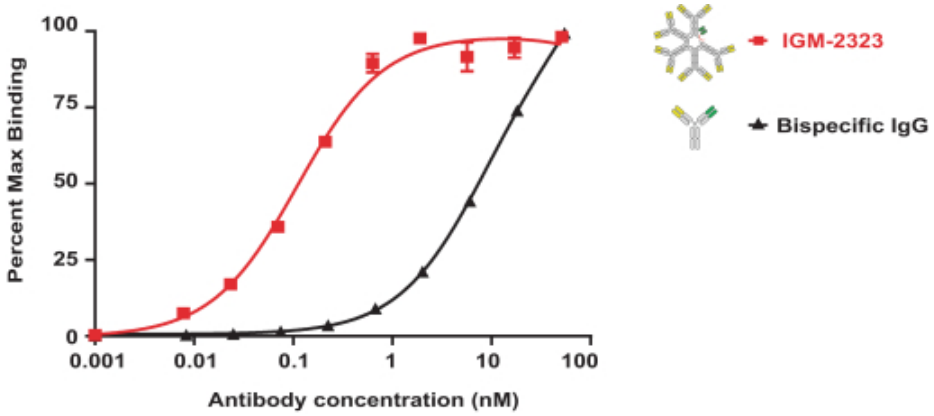
For patients with B cell NHL that is relapsed/refractory to CD20 therapy, additional therapeutic options are used and include synthetic immune approaches, such as CAR-T. While these approaches have been demonstrated to lead to

high response rates, they have also been associated with life-threatening and sometimes fatal toxicities, including severe CRS and severe neurotoxicity. Additionally, the number of weeks required to produce the CAR-T treatment product and the high cost of treatment limit access to such treatment. Other therapeutic options generally do not improve survival outcomes, and the majority of relapsed/refractory patients succumb to their disease. As a result, there is an acute need for therapeutic advances that are able to target the lower levels of CD20 expressed on the surface of relapsed/refractory B cell NHL. Additionally, drugs that are well tolerated and effective enough to be utilized as initial therapy of B cell NHL, where the opportunity to achieve cures is highest, are also needed.

Preclinical Data

In contrast to other bispecific antibody formats that bind to one or two cell CD20 molecules on the surface of the cancer cell and to one CD3 molecule on the surface of the T cell, IGM-2323 has 10 binding domains to CD20 and one binding domain to CD3. The figure below shows the results of our *in vitro* studies that demonstrate the enhanced binding power of IGM-2323 to a CD20 expressing B cell cancer line compared to a bispecific IgG antibody. As shown in the figure below, IGM-2323 was able to achieve approximately 70x stronger binding as compared to a bispecific IgG antibody with the same CD20 and CD3 binding domains at equal concentrations. We believe that IGM-2323 with its 10 binding domains for CD20 may successfully bind to CD20 expressing cancer cells with more avidity compared to an IgG bispecific antibody with only one binding domain for CD20, which may prove to be particularly advantageous for those cancer cells that express relatively lower amounts of CD20 on the cancer cell surface.

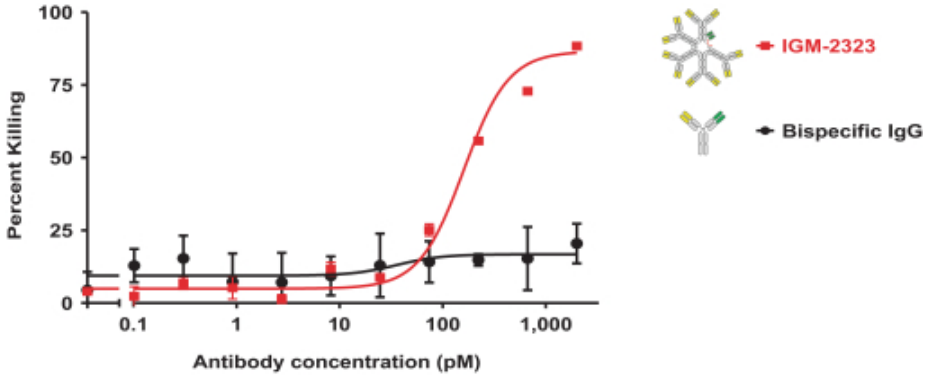
Relative Binding Strength of IGM-2323 and an IgG Version of IGM-2323 to CD20 Expressing Cells



Human CD20 expressing B cells (Ramos cell line) was incubated for 30 minutes with increasing concentrations of either IGM-2323 or a bispecific IgG version with the same CD20 and CD3 binding domains and antibody binding was determined by flow cytometry. Shown are the means ± 1 standard deviation values of the maximum value obtained in the assay (100%). Similar results were obtained in three repeat assays.

In our *in vitro* studies, IgM antibodies bind antigens with high avidity that results in the IgM antibody remaining attached to the target for longer periods of time than an IgG antibody. We believe that this durable binding property will translate to an increased residence time on cancer cells and will increase the chance that a T cell will find and kill the cancer cell while the T cell engager is bound to the cancer cell. This is exemplified in the figure below, where it was observed that IGM-2323 killed approximately 68% more cancer cells than the bispecific IgG antibody administered at equal concentrations with a ratio of one T cell to five cancer cells. This *in vitro* study demonstrates that a B cell cancer line is killed more efficiently by IGM-2323 than a bispecific IgG antibody under conditions where T cells are limited in number.

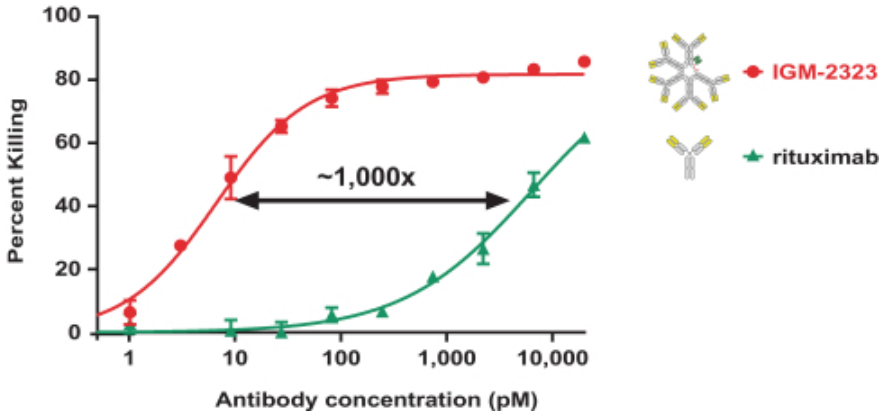
Relative Killing of a B cell Cancer Line by IGM-2323 vs an IgG Bispecific Antibody



A mixture of lymphoma cells (Ramos cell line) and human T cells were incubated with either IGM-2323 or a bispecific CD20 x CD3 IgG antibody at a ratio of one T cell to five cancer cells for 48 hours. Cell killing was evaluated by flow cytometry and means ± 1 standard deviations are shown and is representative of two repeat studies.

Also due to the 10 binding domains to CD20, we believe that IGM-2323 may perform well in those clinical circumstances in which CD20 expression has been reduced due to prior treatment with rituximab. This performance has been modeled by laboratory studies which were designed to mimic the clinical situation in which CD20 target expression on cancer cells is reduced, such as in cancers that have relapsed or are resistant to the standard of care therapy rituximab. As shown in the figure below, in our laboratory studies with these rituximab resistant cells, IGM-2323 had up to 1,000 fold increased potency in killing resistant cancer cells compared to rituximab.

Relative Killing Activity of IGM-2323 and Rituximab Using a Rituximab Resistant B cell Cancer Line



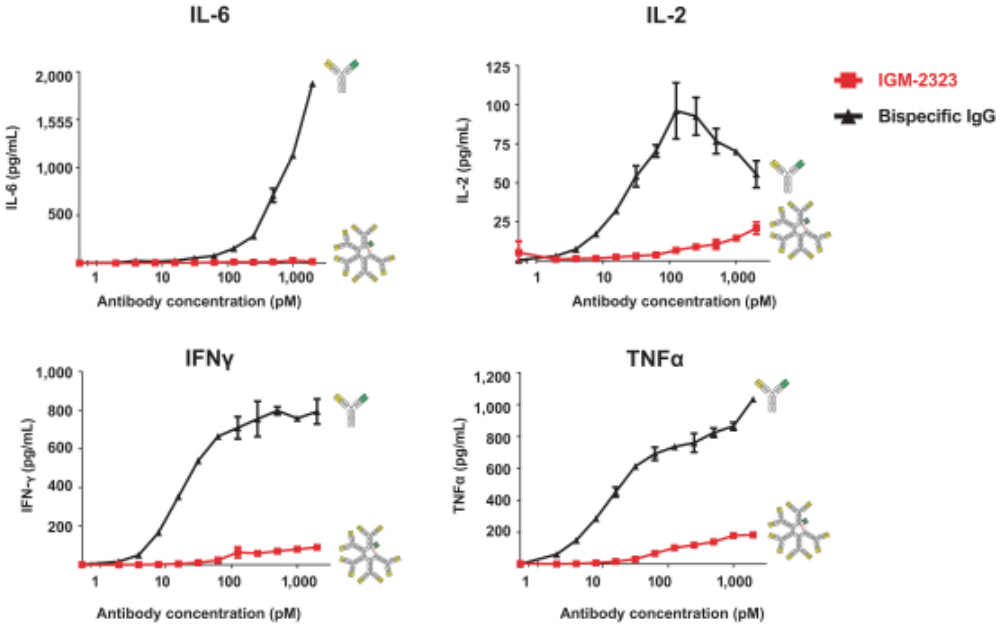
A rituximab resistant Ramos B cell cancer line was incubated with increasing concentrations of IGM-2323 or rituximab in the presence of human complement, T cells and natural killer (NK) cells from human peripheral blood mononuclear cell preparations for 48 hours and cell killing was evaluated by flow cytometry. Shown are the means ± 1 standard deviations of a representative study from three repeat studies.

While IgG bispecific T cell engaging antibodies have demonstrated evidence of clinical benefit across several tumor types, serious adverse events and tolerability issues have been reported, including CRS. CRS is characterized by fever, hypotension, blood coagulation abnormalities and capillary leak. Potentially life threatening effects of CRS include cardiac dysfunction, organ failure, respiratory distress syndrome and neurologic toxicity. Such findings have also been associated with other T cell engaging approaches, including CAR-T. Patient deaths have also resulted from

CRS in the clinical testing of IgG bispecific T cell engaging antibodies and CAR-T. These serious adverse events can also result in dose limiting toxicities of IgG bispecific T cell engaging antibodies and potentially limit the optimal efficacy of these therapeutic agents. The potential for CRS can also result in the need for high levels of patient monitoring, expense and inconvenience.

In addition to enhanced binding to low CD20 expressing tumors, IGM-2323 has been shown to have a lower cytokine release profile associated with the TDCC mechanism of action compared to an IgG based CD20 x CD3 antibody with the same CD20 and CD3 binding domains, when tested *in vitro* with human T cells and human B cells. Shown in the figure below is the expression of inflammatory cytokines interferon gamma (IFNg), tumor necrosis factor alpha (TNFa), IL-6 and IL-2 released after incubation of CD20 expressing B cells, T cells and IGM-2323 or a comparable bispecific IgG antibody.

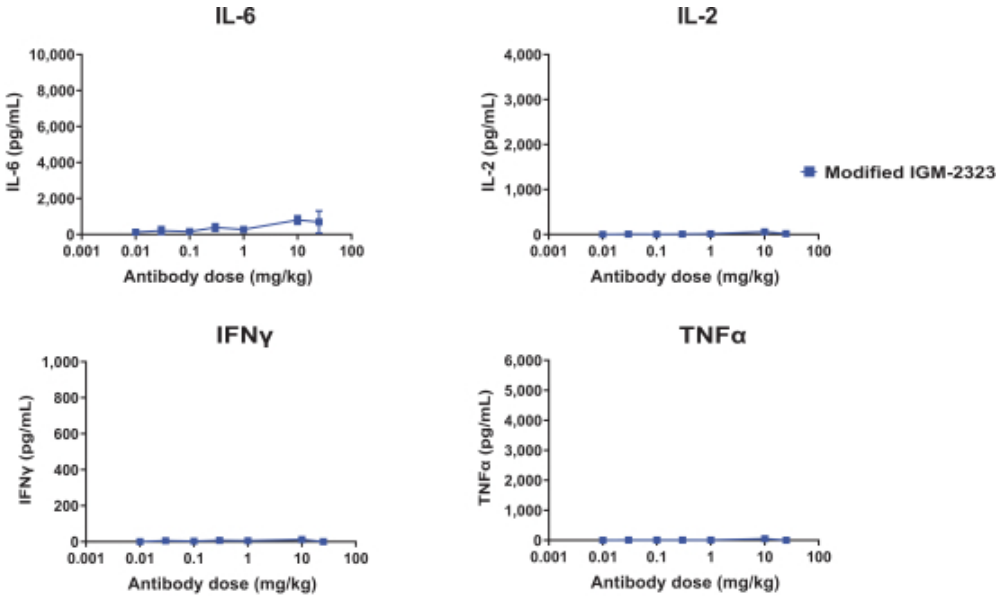
Comparison of Cytokine Release from IgM Bispecific IGM-2323 and an IgG Version of IGM-2323 *in vitro*



Human peripheral blood cells containing CD20 expressing B cells, T cells and NK cells were incubated for approximately 24 hours with increasing concentrations of IgM bispecific IGM-2323 and an IgG version with the same CD20 and CD3 binding domains in vitro. Shown are the means ± 1 standard deviation levels of cytokines released into the culture medium from a representative study from two repeat studies.

We have also evaluated inflammatory cytokine release in non-human primate studies using a modified version of IGM-2323 that interacts with cynomolgus monkey T cells (TDCC and CDC mechanisms). As shown below, a dose dependent evaluation of the modified version of IGM-2323 resulted in minimal increases in expression of inflammatory cytokines interferon gamma (IFNg), tumor necrosis factor alpha (TNFa), IL-6 and IL-2 in plasma.

Peak plasma inflammatory cytokine levels in non-human primates following treatment with a modified version of IGM-2323

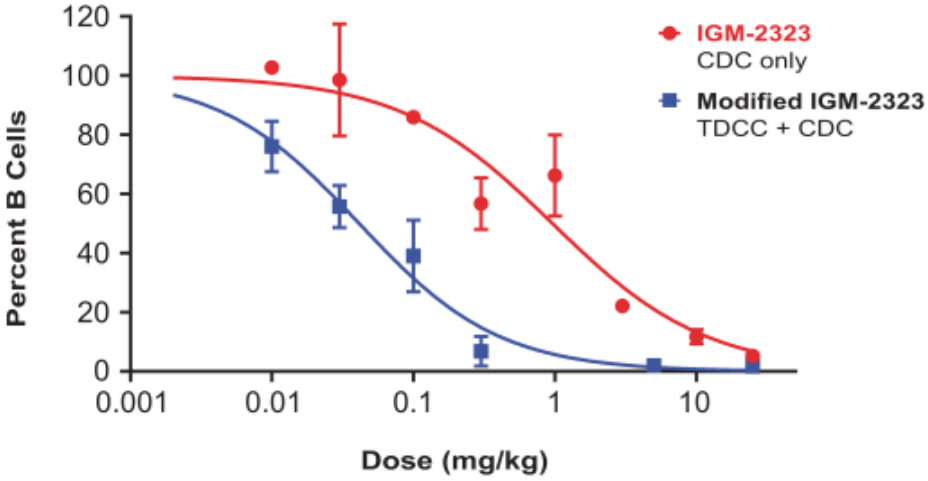


Non-human primates were treated intravenously with single doses of a slightly modified version of IGM-2323 that interacts with monkey CD3, at doses ranging from 0.01 to 25 mg/kg. Peak plasma inflammatory cytokine levels were measured at various time points between 1 and 48 hrs after intravenous administration of the modified IGM-2323. There were one to four data points per dose, and either single data points or mean values ± 1 standard deviation are shown when two or more data points were obtained.

We have evaluated the potential of the IGM-2323 bispecific format to kill CD20 expressing B cells in mouse studies. In a disseminated lymphoma mouse study using human B cell line Raji with human peripheral blood T cells, IGM-2323 dosed at 0.5 mg/kg improved survival in mice with 90% surviving to 46 days whereas no mice survived beyond day 25 when treated with vehicle.

We have also evaluated IGM-2323 in non-human primate studies. As shown below, a dose dependent depletion of B cells from blood was observed with IGM-2323 (CDC mechanism only) and a modified version of IGM-2323 that interacts with monkey T cells (TDCC and CDC mechanisms). These studies established (i) that IGM-2323 can mediate CDC-dependent depletion of CD20 positive B cells in vivo, and (ii) that the addition of TDCC to CDC, as mediated by the modified version of IGM-2323 in monkeys, improves the potency of B cell depletion by roughly 20 fold.

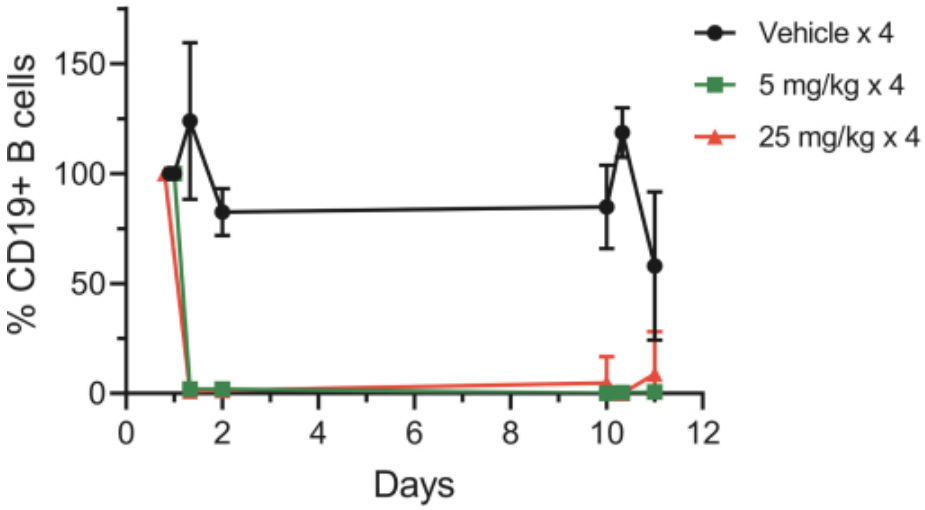
Dose-dependent B cell depletion (CD19+) in non-human primates



Non-human primates were treated with single doses of IGM-2323 or a slightly modified version of IGM-2323 that interacts with monkey CD3, at doses ranging from 0.01 to 25 mg/kg. Depletion of B cells was analyzed by flow cytometry at 24 hours post dose using the B cell marker CD19. There were two animals per group, and mean values ± 1 standard deviation are shown compared to baseline values prior to treatment (100%). Data from three studies were compiled and fitted to a four parameter curve. This data indicates an approximately 20-fold enhanced potency with combined TDCC and CDC mechanisms.

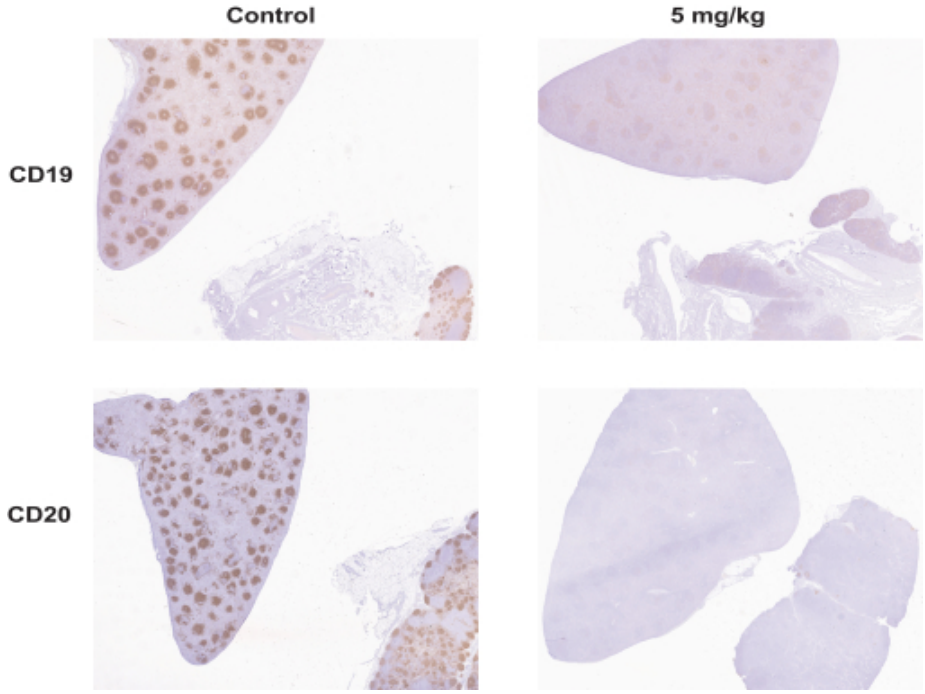
Repeated dosing of the modified version of IGM-2323 has also been evaluated in non-human primate GLP studies. Data from these studies, shown below, demonstrated that the modified version of IGM-2323 could efficiently eliminate B cells in the blood, as well as in secondary B cell tissues such as spleen and lymph nodes. An alternative marker of B cells, CD19, was used in these studies to prevent potential interference in B cell detection by the IgM binding to CD20. We observed no evidence of toxicity up to the maximum studied repeat dose of 25 mg/kg, which is two-fold greater than the intended maximal clinical dose of IGM-2323. We believe these data support clinical development of IGM-2323 as a potential treatment for CD20 expressing B cell malignancies while maintaining limited toxicity.

B cell Depletion (CD19+) in Non-human Primates



Cynomolgus monkeys were treated every three days with either vehicle or a slightly modified version of IGM-2323 that interacts with non-human primate CD3 at 5 mg/kg or 25 mg/kg. Peripheral blood was analyzed by flow cytometry for CD19 expressing B cells and the mean values ± 1 standard deviation are shown compared to baseline values prior to treatment. The number of animals per group was: vehicle n=10; 5 mg/kg, n=6; and 25 mg/kg, n=10.

Histologic Images of B cell Killing (CD19 and CD20) in Non-human Primates



Cynomolgus monkeys were injected every three days with either vehicle or a slightly modified version of IGM-2323 that interacts with non-human primate CD3 at 5 mg/kg. Immunohistochemistry was used to detect CD19 and CD20 positive B cells in non-human primate spleen and mesenteric lymph nodes from a control animal or an animal that received four doses at 5 mg/kg of the modified version of IGM-2323 is shown at day 11 post treatment initiation and is representative data from six animals evaluated per group.

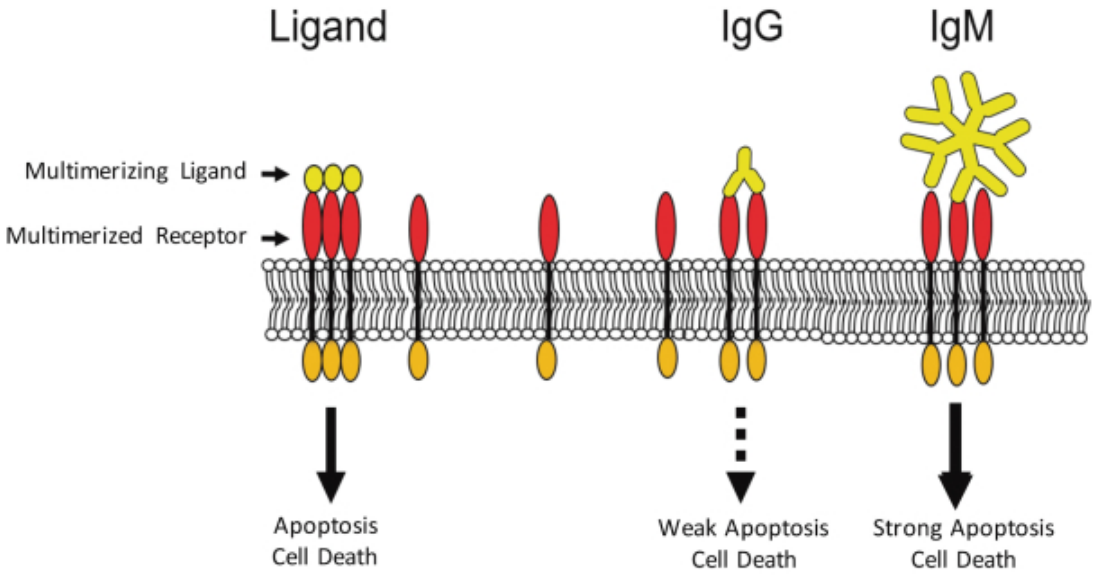
Clinical Development Plan

We plan to develop IGM-2323 as a treatment for patients diagnosed with CD20-expressing malignancies. We intend to dose the first patient in a Phase 1 clinical trial to evaluate IGM-2323 in relapsed/refractory B cell NHL patients in 2019. In this planned multi-center open label trial, we expect to study IGM-2323 initially as a single agent, where it will be administered intravenously at a planned fixed-dose, as part of a dose escalation in single patient cohorts followed by 3+3-based protocol, up to a planned dose of 1000 mg, in patients with relapsed/refractory B cell NHL. IGM-2323 will be administered three times per cycle (each cycle is 21 days) for a period of four cycles. The dose limiting toxicity window will be evaluated in the first cycle. The objective of this Phase 1 study is to provide an initial assessment of the safety, pharmacokinetics and preliminary efficacy of IGM-2323 in relapsed/refractory B cell NHL patients. If the therapy appears to be safe and tolerable and significant evidence of efficacy, such as durable complete responses, is observed, we will expand the clinical testing of IGM-2323 in additional relapsed/refractory patients expected to express CD20 on their cancer cells, including diffuse large B cell lymphoma and/or relapsed/refractory follicular lymphoma, and potentially further to relapsed/refractory chronic lymphocytic leukemia. Additional combination studies adding IGM-2323 to standard of care regimens in earlier lines of treatment may be developed based upon initial results from this planned Phase 1 study.

Death Receptor 5 Agonist IgM Antibody

Our second product candidate will be an IgM antibody targeting DR5 for the treatment of patients with solid and hematologic malignancies. DR5 is a member of the TNFrSF and is often expressed on the surface of cancer cells. Similar to other members of the TNFrSF, strong signaling to effect a biological response requires that three or more DR5 receptor proteins be cross-linked together on the surface of a cancer cell through the binding of either the natural DR5 ligand (TRAIL) or an antibody or other therapeutic drug that can efficiently cross-link the DR5 receptors. Binding and cross-linking of DR5 receptors sends a signal to the cancer cell to induce programmed death of cancer cells, also known as apoptosis.

DR5 Signaling to Induce Programmed Death of Cancer Cells



Solid and Hematologic Malignancies

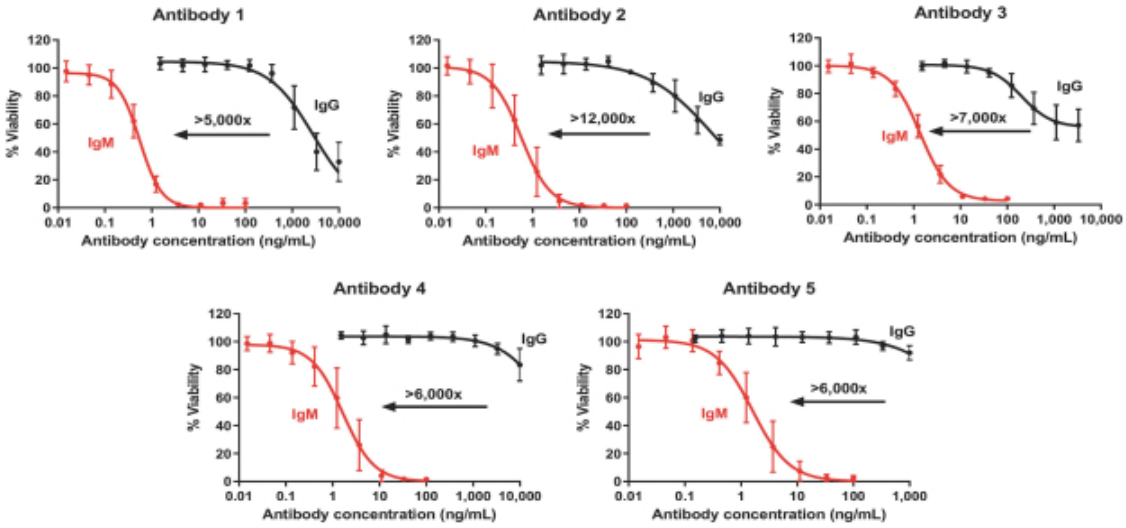
DR5 is expressed in a broad range of solid tumors (*e.g.*, colon, gastric, pancreatic, lung, breast and prostate tumors) as well as leukemias and lymphomas. Although DR5 is expressed on some normal cells in the body, cancer cells have been shown to be more sensitive to DR5 signaling compared to cells of healthy tissues. Various IgG DR5 antibodies have been tested in early stage clinical trials by other companies, but these IgG antibodies failed to demonstrate adequate efficacy. As IgG DR5 antibodies only bind to two DR5 receptors, these IgG antibodies may not have created sufficient cross-linking of DR5 to send an efficient apoptotic signal to the cancer cells, which may account for the

relatively small number of monotherapy responses observed in the clinical trials of these IgG antibodies. In contrast, DR5 IgM antibodies have the capacity for multivalent binding of DR5, which results in cross-linked DR5 receptors on the cell surface.

Preclinical Data

In our laboratory studies, shown in the figure below, multiple DR5 IgM antibodies showed significantly enhanced *in vitro* efficacy compared to an IgG antibody with the same binding domains, often resulting in at least >1,000 fold increased potency in killing cancer cells from multiple cancer cell types with encouraging *in vitro* toxicity data. As shown in the figures below, we observed that multiple different engineered DR5 IgM antibodies were able to kill cancer cells at concentrations of 5,000-12,000 fold less than DR5 IgG antibodies with the same binding domains at equal concentrations.

Cell Line Killing Comparison of DR5 IgG and IgM Antibodies with Five Different Binding Domains



Human colon cancer cell line Colo205 was incubated in vitro with either DR5 IgG antibodies or IgM antibodies with the same binding domains at increasing concentrations. The ability of the antibodies to kill the cancer cells was tested after 24 hours of incubation. Shown are means ± 1 standard deviations of the percent viable (surviving cancer cells) cells at each antibody concentration tested. Studies were repeated between 2-6 times with similar results.

We have also demonstrated superior cancer cell killing by DR5 IgM antibodies in multiple *in vivo* tumor models compared with IgG antibodies. In these *in vivo* studies of human colorectal tumors, we observed that engineered DR5 IgM antibodies were able to significantly improve the killing of colorectal tumors resulting in at least a 2-3 fold delay in tumor growth, with some mice being tumor-free, as compared to DR5 IgG antibodies at equal concentrations. This ability to kill cancer cells was significantly enhanced when IgM antibodies were tested in combination with common chemotherapeutic drugs. In multiple *in vitro* studies on human hepatocytes, our DR5 IgM antibody did not induce toxicity at doses that are expected to be therapeutically active. In preliminary studies in cynomolgus monkeys, our DR5 IgM antibody did not induce toxicities when tested at doses up to 10 mg/kg.

Clinical Development Plan

Based on the encouraging activity observed in multiple *in vitro* and *in vivo* studies, we believe that our DR5 IgM antibodies may produce effective apoptotic signaling in cancer cells and have the potential to treat patients with solid and hematological malignancies, either as a stand-alone agent or in combination with chemotherapeutic drugs or other apoptotic pathway agents. We plan to file an IND for a DR5 IgM antibody in 2020 in order to begin clinical testing in solid and hematologic malignancies. The proposed multi-center open label Phase 1 clinical trial would study our DR5 IgM antibody intravenously administered as part of a staggered monotherapy and in combination with

chemotherapy 3+3 dose escalation in Phase 1 patients with solid tumor and hematologic malignancies. The objective of this Phase 1 clinical trial would be to provide an initial assessment of pharmacokinetics, safety, biomarker evaluation and preliminary efficacy of our DR5 IgM antibody both as a single agent and in combination with a defined chemotherapy regimen, based on standard cancer response criteria. Additional combination studies in different indications with different combination regimens expected to act synergistically with our DR5 IgM antibody may be developed based upon initial results from this planned Phase 1 clinical trial. We may also decide to enter more than one DR5 antibody into initial clinical trials.

Research and Discovery Programs

The following table highlights discovery programs that we are prioritizing:

Mode	Target	Indication	Worldwide Commercial Rights
T cell Engagers	CD123 x CD3	Acute Myeloid Leukemia	IGM
	CD38 x CD3	Multiple Myeloma	
	Multiple Targets x CD3	Multiple Solid Tumors	
Receptor Cross-linking Agonists	OX40	Solid and Hematologic Malignancies	IGM
	GITR		
Targeted Cytokines	Multiple Targets x IL-15	Solid and Hematologic Malignancies	IGM

We estimate that these discovery programs are at least two years away from clinical studies, assuming they meet our requirements for advancement. We do not anticipate advancing all of these programs into clinical testing, and some of these programs may be supplanted by other IgM discovery programs.

T cell Engaging Antibodies

We have begun conducting research on a broad range of cancer cell targets with our proprietary bispecific T cell engaging IgM antibodies. We believe that our IgM platform will allow for treatment with a relatively favorable cytokine release profile with respect to a variety of cancer cell targets, including those targets which are expressed at a relatively low level on the surface of cancer cells.

Our initial T cell engaging research and development efforts are focused on the following targets:

CD123 x CD3

Acute myeloid leukemia (AML) is the leading cause of leukemia mortality in the United States, with more than 20,000 new patients diagnosed per year and a five-year survival of less than 30%. This five-year survival rate further decreases to approximately 10% in patients over 60 years old. Few advances have been made in the treatment of AML patients within the last 40 years, and current treatment options primarily consist of intense chemotherapy and stem cell transplantation.

Several different approaches have been taken to target cell surface molecules on AML cells to utilize T cells to kill AML cells. One such surface molecule, CD123 (also known as IL-3 receptor alpha chain), is expressed on the cancer cells of more than 90% of AML patients. In addition, CD123 is often highly expressed on the cancer cells of patients who have genetic mutations associated with a very poor prognosis. CD123 is also a clinically validated target for certain hematological malignancies. In 2018, a CD123 targeting therapeutic tagraxofusp (IL-3 recombinantly fused to a truncated diphtheria toxin) was approved by the FDA for blastic plasmacytoid dendritic cell neoplasms and is in clinical trials for additional hematological malignancies.

Phase 1 clinical studies have been conducted with CD123 x CD3 bispecific antibodies by other companies. Although early signs of clinical efficacy have been reported in some patients, severe CRS and some patient deaths have also been observed with these T cell engaging antibodies directed at CD123. We believe that the cytokine release profile of our IgM platform may allow us to effectively treat these patients with an acceptable tolerability profile. *In vitro* TDCC assays using CD123 expressing AML cell lines have demonstrated that a CD123 x CD3 IgM

antibody can induce potent T cell redirected killing of AML cancer cell lines. Studies are currently underway to examine if this bispecific antibody also exhibits low levels of cytokine release, similar to IGM-2323.

CD38 x CD3

Multiple myeloma (MM) is a malignant disease caused by mature antibody producing B cells hyper-proliferating in the bone marrow. In the United States in 2019, an estimated 32,000 new cases of MM are expected to be diagnosed and approximately 13,000 deaths are expected to be associated with the disease. Although advances have been made in the treatment of MM, most patients eventually relapse after treatment, and the five-year survival rate is approximately 50%.

CD38 is a cell surface protein that has been shown to be effective and important in the treatment of MM patients. It can be expressed at high levels on the surface of MM cells, and it is the target of the monospecific IgG based antibody daratumumab, which has been approved for the treatment of patients with relapsed or refractory MM. Although most patients initially respond to CD38 monospecific IgG antibodies, either as monotherapies or in combination with other drugs, a significant number of these patients eventually develop progressive disease. As with CD20, we believe that bispecific T cell engagers directed at CD38 may be able to effectively treat some of these relapsed/refractory patients. *In vitro* studies with CD38 expressing MM cell lines have demonstrated that CD38 x CD3 IgM antibodies can induce potent TDCC killing of MM cancer cell lines, and these IgM bispecific antibodies were shown to be more potent *in vitro* than an IgG antibody that uses the antibody-dependent cellular cytotoxicity (ADCC) mechanism of killing.

Other Cancer Cell Targets x CD3

The high avidity provided by the 10 binding domains of our IgM platform may also provide significant advantages in the treatment of patients with solid tumors compared with IgG based bispecific formats. For example, our high avidity format may allow us to target cancer cells that express relatively low cell surface levels of the targeted tumor associated antigen. It may also allow us to target difficult solid tumor targets such as carbohydrates and glycosylated proteins that are challenging to bind with low affinity IgG antibodies. Our candidate selection strategy is to prioritize well characterized tumor targets where we believe an IgM bispecific antibody may have significant advantages over standard IgG bispecific approaches.

Receptor Cross-linking Agonists

We are also conducting research on additional TNFrSF agonist targets with the goal of enhancing the activity and proliferation of T cells in order to improve immune system responses to cancer. T cells express certain activation molecules on their surface, and stimulation of these activation targets can enhance T cell activation and proliferation, which can be helpful in inducing stronger immune responses to cancer. The TNFrSF includes several of these T cell activator proteins, including OX40 and GITR. As with DR5, these members of the TNFrSF must be bound in clusters of at least three in order to send a strong biological signal to enhance immune responses.

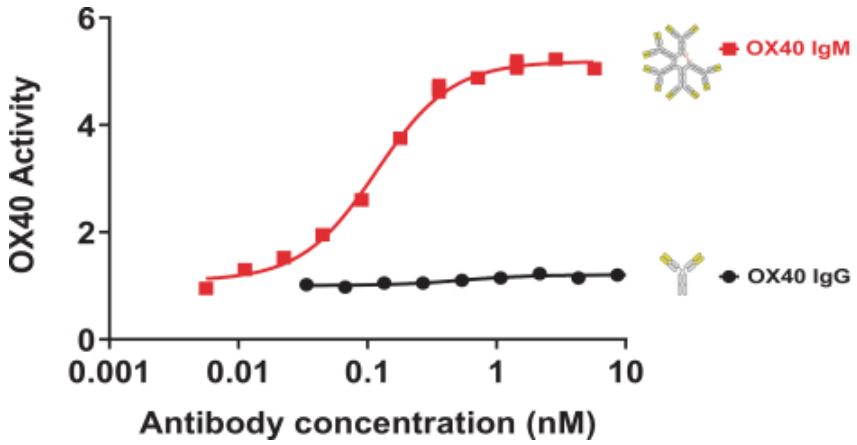
As with DR5, there have been multiple attempts to create IgG-based therapeutic antibodies directed at OX40 and GITR. However, since bivalent IgG antibodies naturally bind only two OX40 or GITR cell surface proteins, their bivalent nature inherently limits their signaling efficacy. In contrast, we are utilizing the 10 binding domains of IgM antibodies to efficiently cross-link these molecules on the T cell surface. Using *in vitro* testing systems, we have observed that IgM antibodies have much greater potency than IgG antibodies with the same binding domains.

OX40

OX40 is a stimulatory molecule expressed on T cells shortly after the initiation of T cell activation. When OX40 is bound by its natural ligand, OX40L, which is expressed on antigen presenting cells such as dendritic cells or macrophages, it results in a signal to the T cell that stimulates proliferation, cytokine production and memory T cell generation.

As with other members of the TNFrSF, at least three OX40 molecules must be bound and efficiently cross-linked on the cell surface to produce a productive signal in the T cell. Shown below is an *in vitro* study demonstrating the greater ability of an IgM antibody in producing a functional signal in an OX40 activity reporter cell line assay compared to an IgG antibody.

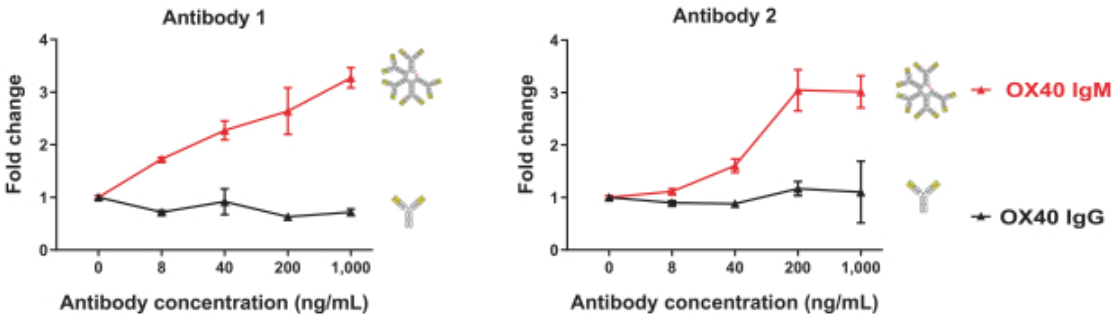
Comparative Signaling Potential of IgM and IgG Antibodies Targeting OX40 in an Activity Reporter Cell Line



A human reporter cell line, U2OS, expressing OX40 and a luciferase reporter gene activated by a downstream signaling component of OX40, NFkB, was used to measure OX40 activity. The reporter cell line was incubated with increasing concentrations of OX40 IgM or IgG antibodies with the same binding domains. OX40 activity, as indicated by increasing levels of NFkB-induced luciferase gene expression that produced luminescence, was evaluated after approximately 16 hours. Shown are mean ± standard error of the mean OX40 activity, as measured by relative luminescence units x 10⁵, and is a representative study from three repeat studies.

Furthermore, as shown below, when tested *in vitro*, the IgM OX40 antibodies increased cytokine production by human T cells (shown is cytokine TNFa) beyond that of IgG antibodies with the same binding domains.

An OX40 IgM Antibody Enhances TNFa Secretion above that of an IgG Antibody with Human T cells



Human T cells in peripheral blood mononuclear preparations were stimulated with CD3 antibodies and a co-stimulatory agonist (TLR9 agonist) and were incubated with increasing concentrations of OX40 IgG or IgM antibodies with the same binding domains. Two separate antibody sequences were tested in IgG and IgM formats. Cytokine tumor necrosis factor alpha (TNFa) levels were measured after three days. Shown are means ± standard error of mean fold change in TNFa secretion in one donor, which are representative of 4 individual donors studied.

GITR

Glucocorticoid-induced TNFr-related protein (GITR) is a cell surface molecule expressed on both activated T cells and immunosuppressive regulatory T cells (T-regs). T-regs are a subset of T cells which block other T cells from seeking out and killing tumors. The natural ligand of GITR, GITRL, is expressed on antigen presenting cells such as dendritic cells and macrophages, and it is able to create the dual benefit of causing effector T cells to proliferate and produce immunostimulatory cytokines and inhibiting the effect of immunosuppressive T-regs.

Similar to DR5 and other members of the TNFrSF, cross-linking of GITR receptors is required for effective biological signaling. As GITR is also expressed on immunosuppressive T-regs, we compared a GITR IgM antibody to a comparable IgG antibody in the presence of these immunosuppressive T-regs. In our *in vitro* tests, as shown below, a GITR IgM antibody significantly increased the immune stimulatory cytokine production (shown as IFNg production below) and proliferation of the CD4+ T cells compared to an IgG antibody with the same binding domain.

Human CD4+ T cell Proliferation and IFNg Secretion are Significantly Enhanced by GITR IgM Antibodies

In vitro differentiated T-regs were incubated with human CD4+ T cells in the ratio of 1:4 in the presence of CD3 antibodies. GITR IgM or IgG antibodies at 40 ng/mL were incubated with the co-culture and effects on CD4 proliferation or IFNg secretion into the media were evaluated after four days. Shown are mean values ± standard error of the mean from a representative study from 3 donors.

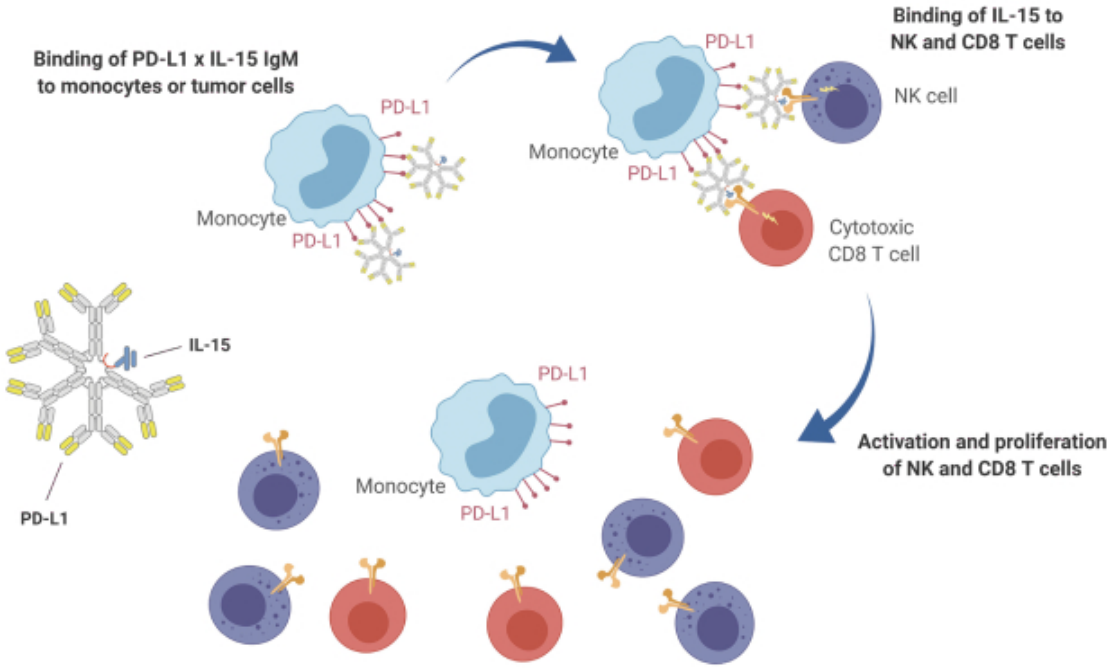
Targeted Cytokines

Our IgM platform also allows us to deliver payloads, including immune system stimulating cytokines, which are targeted with the strong and durable binding power of the 10 binding domains of an IgM antibody.

IL-15

Our first targeted cytokine is expected to be IL-15. In nature, IL-15 stimulates T cells and NK cells to proliferate and maintain their long-term survival. Our IgM platform allows us to attach IL-15 to the J chain of a targeting IgM antibody. We believe that this targeted delivery system for IL-15 will lead to the proliferation of T cells and NK cells in the area of the cells targeted by the IgM antibody.

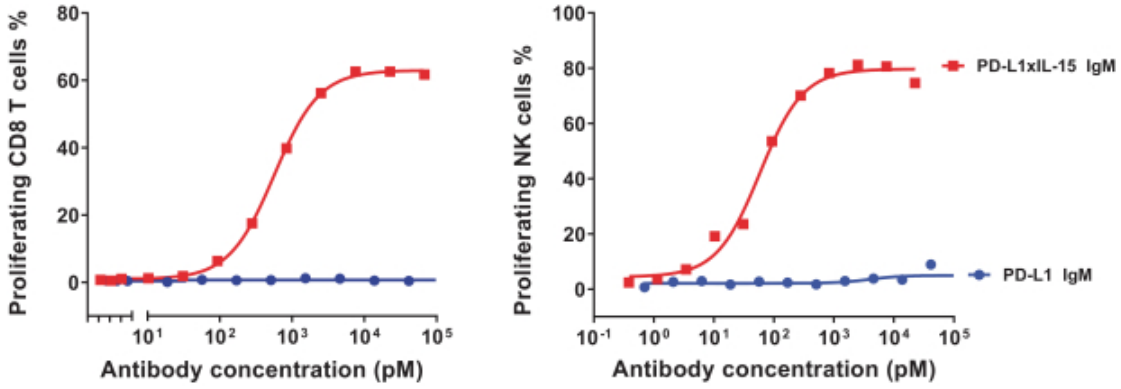
PD-L1 Targeting IgM Antibody with IL-15



Schematic diagram of a PD-L1 IgM antibody (green binding domains) with IL-15 (red oval) attached to the J chain and subsequent binding to PD-L1 expressing cells and activation of CD8 T cells and NK cell proliferation with IL-15.

As a proof of concept IL-15 delivery molecule, we created a PD-L1 IgM antibody with IL-15 attached to the J chain. This PD-L1 x IL-15 bispecific antibody dramatically enhanced the proliferation of CD8 T cells and NK cells in our *in vitro* testing. As shown in the figures below, we observed that a PD-L1 IgM antibody with IL-15 attached to the joining chain increased proliferation in approximately 60% of CD8 T cells and 80% of NK cells, while a PD-L1 IgM antibody without IL-15 attached to the joining chain did not increase proliferation in CD8 T cells and NK cells.

Comparative Activity of the PD-L1 IgM Antibody with and without IL-15 Fused to the J Chain



The PD-L1 IgM antibody with and without IL-15 fused to the J chain was incubated at increasing concentrations with human peripheral blood mononuclear cells in vitro and the proliferation of CD8+ effector T cell and NK cells was evaluated after three to four days. Shown is a representative study from >10 repeat studies.

Third-Party Agreements

We have entered into agreements pursuant to which we are evaluating antibody sequences from third parties. Under these agreements, we are able to research and initially develop some of our discovery programs and are required to make certain annual payments. These payments are not expected to exceed $500,000 in the aggregate in 2019. We also have the option to negotiate or enter into commercial license agreements with these third parties if we elect to continue development or commercialization of any product candidates resulting from these agreements. If we exercise our option to negotiate or enter into any commercial licenses with these third parties, we will be subject to additional payment obligations upon achievement of certain development, regulatory, commercialization and other milestones and low single digit royalty payments on product sales.

Manufacturing and Supply

We do not currently operate a current good manufacturing practice (cGMP) manufacturing facility. We rely, and expect to continue to rely for some time, on third parties for the manufacture of our product candidates for preclinical and clinical testing. We also rely, and expect to continue to rely, on third parties to package, label, store and distribute our investigational product candidates.

We have spent significant resources developing our current manufacturing processes and know-how to produce sufficient yields and optimize functionality in conjunction with our contract manufacturing partners. Typically, we use Chinese hamster ovary (CHO) cells to produce IgM and bispecific IgM antibodies by transfecting those cells with plasmid genes for heavy chain (HC), light chain (LC) and J chain (JC) domains. To construct a bispecific IgM we use a modified JC plasmid gene that includes a single chain fragment variable (scFv) domain. The IgM pentamers, containing HC, LC and JC in an appropriate ratio (10:10:1), are assembled within the CHO cells, and secreted into the cell supernatant, all of which are contained in a large single-use bioreactor. The product IgM is harvested and purified to homogeneity using methods and processes developed by us. Our processes provide for cost-effective purification and formulation stability in the manufacturing of IgM antibodies.

We are in the process of designing and building a cGMP manufacturing facility expected to be adequate for the manufacture of clinical trial drug materials. Once this facility becomes operational, we expect to manufacture future clinical product candidates primarily using our facility. We expect to continue to manufacture clinical materials for our first two product candidates, IGM-2323 and our DR5 IgM antibody, at outside partners for some extended period of time.

Subject to the clinical trial success of our product candidates, we plan to design and build a commercial manufacturing facility for the future commercial manufacturing of some or all of our commercial products.

To date, we have obtained bulk drug substance (BDS) for IGM-2323 from a single-source third-party contract manufacturer. While any reduction or halt in supply of BDS from this contract manufacturer could limit our ability to develop our product candidates until a replacement contract manufacturer is found and qualified, we believe that we have sufficient BDS to support our current clinical trial programs. Filling and finishing of the BDS for IGM-2323 has been completed at another third-party contract manufacturer.

We also expect to obtain BDS for our DR5 IgM antibody from a single-source third-party contract manufacturer, and we expect that filling and finishing of the BDS for our DR5 IgM antibody will be completed at a third-party contract manufacturer.

All of our product candidates are manufactured from of a master cell bank of that antibody's production cell line. We have or intend to have one master cell bank for each product candidate that was or will be produced and tested in accordance with cGMP and applicable regulations. Each master cell bank is or will be stored in two independent locations, and we intend to produce working cell banks for each product candidate later in product development. It is possible that we could lose multiple cell banks from multiple locations and have our manufacturing severely impacted by the need to replace the cell banks. However, we believe we have adequate backup should any particular cell bank be lost in a catastrophic event.

Competition

The pharmaceutical and biotechnology industries are characterized by rapidly advancing technologies, intense competition and a strong emphasis on proprietary products. We face potential competition from many different sources, including major multinational pharmaceutical companies, established biotechnology companies, speciality pharmaceutical companies, universities, academic institutions, government agencies and other public and private research organizations that conduct research, seek patent protection and establish collaborative arrangements for the research, development, manufacturing and commercialization of cancer immunotherapies. Any product candidates that we successfully develop and commercialize will compete with new immunotherapies and other drug products that may become available in the future.

We compete in the segments of the pharmaceutical, biotechnology and other related markets that develop cancer treatments. There are many other companies that have commercialized and/or are developing immuno-oncology treatments for cancer, including large pharmaceutical and biotechnology companies, such as AbbVie, Amgen, AstraZeneca/MedImmune, Bristol-Myers Squibb, Merck, Novartis, Pfizer and Roche/Genentech.

We face significant competition from pharmaceutical and biotechnology companies that target specific tumor-associated antigens using immune cells or other cytotoxic modalities. These generally include immune cell redirecting therapeutics (*e.g.*, T cell engagers), adoptive cellular therapies (*e.g.*, CAR-T), antibody drug conjugates, targeted radiopharmaceuticals, targeted immunotoxin and targeted cancer vaccines.

With respect to our lead product candidate, IGM-2323, we are aware of other companies with competing clinical stage therapeutics that target CD20, which include, but are not limited to, Roche/Genentech, Regeneron, Xencor and Genmab.

With respect to our second product candidate, our DR5 IgM antibody, we are aware of other companies with competing clinical stage therapeutics that target DR5, which include, but are not limited to, AbbVie, InhibRx, Genmab and Boehringer Ingelheim.

Many of the companies against which we are competing or against which we may compete in the future have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing approved drugs than we do. Mergers and acquisitions in the pharmaceutical, biotechnology and diagnostic industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and enrolling subjects for our clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

We could see a reduction or elimination of our commercial opportunity if our competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than any products that we or our collaborators may develop. Our competitors also may obtain FDA or foreign regulatory approval for their products more rapidly than we may obtain approval for product candidates, which could result in our competitors establishing a strong market position before we or our collaborators are able to enter the market. The key competitive factors affecting the success of all our product candidates, if approved, are likely to be their efficacy, safety, convenience, price, the effectiveness of companion diagnostics, if required, the level of biosimilar or generic competition and the availability of reimbursement from government and other third-party payors.

Intellectual Property

The proprietary nature and protection of our platforms, product candidates and discovery programs, as well as our processes and know-how, are important to our business. We have sought patent protection in the United States and internationally for our platform technologies, research discoveries and product candidates. For our product candidates, we seek to pursue patent protection covering compositions of matter, methods of use including various treatment indications and methods of creation and manufacture. Throughout the innovation process, and continuing into the product development process, we also plan to seek to identify additional means of obtaining patent

protection that would potentially enhance our commercial success, including obtaining patent protection for additional methods of use, such as additional medical indications, for our product candidates, treatment methods for specific patient populations using our product candidates and methods and tests to identify those patient populations, and the manufacture of our product candidates. We also seek to obtain patent protection for refinements and enhancements to our platform technologies. Our policy is to pursue, maintain and defend patent rights in strategic areas and to protect the technology, inventions, and improvements that are commercially important to the development of our business. We may also rely on trade secrets that may be important to the development of our business, and we may seek to protect and maintain the confidentiality of proprietary information to protect aspects of our business that are not amenable to, or that we do not consider appropriate for, patent protection.

To date, we have spent considerable effort securing intellectual property rights, including rights related to our platform technology and product candidates. Our patent portfolios covering our platform technology, product candidates, and related discovery programs, are summarized below.

Proprietary Technologies

As of August 31, 2019, our patent portfolio related to our proprietary technologies includes nine patent families directed to our multivalent antibody platform, and includes issued U.S. and European patents directed to our modified J chain technology. The platform portfolio includes three granted patents, two allowed applications, 45 pending applications in active prosecution in 15 countries or regions, two pending Patent Cooperation Treaty (PCT) applications, and two pending unpublished provisional applications. These patent families are projected to expire between 2034 and 2040, absent any patent term adjustments or extensions. We wholly own the rights to these patent families. Summaries of relevant published patent families are provided below.

The “Modified J Chain” family includes disclosure and claims related to IgM, IgA, and hybrid multimeric antibodies that include a J chain, where the J chain has been modified to include a binding moiety, *e.g.*, an antibody or antibody fragment, or any other protein or non-protein moiety that can bind to a cognate binding partner (including antibody drug conjugates). The application family also includes disclosure and claims related to methods of making and using multimeric antibody molecules comprising a modified J chain, *e.g.*, bispecific IgM antibodies. This patent family has a projected expiration date of April 2, 2035, absent any patent term adjustments or extensions. The Modified J Chain patent family includes granted patents in the United States and Europe (validated in Austria, Belgium, Switzerland, Germany, Denmark, Spain, Finland, France, Great Britain, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Sweden, and Slovenia). A second U.S. patent is allowed and will grant on September 3, 2019, and a Mexican application is allowed. As of August 31, 2019, the patent family also includes pending patent applications in the United States (one application), Australia, Brazil, Canada, China, Europe, Hong Kong (registered through the European Patent Office), India, Israel, Japan, South Korea, Mexico, New Zealand, Russia, Singapore, and South Africa. The granted U.S. and European claims are directed to IgM antibodies (in the United States) and IgM, IgA and hybrid antibodies (in Europe, also in the allowed U.S. application) comprising a modified J chain with a binding moiety fused or chemically conjugated to selected regions of the J chain. The allowed claims in Mexico are similar to the granted European claims. Related claims are being prosecuted in the pending applications.

Two later-filed patent families are related to our “Modified J Chain” family. These two patent families both have a projected expiration date of September 30, 2036, absent any patent term adjustments or extensions. Patent applications in the first of these two families includes disclosure and claims related to multimeric antibodies (*e.g.*, IgM, IgA, or hybrid multimeric antibodies) that include a modified J chain, where the modified J chain includes a binding moiety that modulates a T cell inhibitory pathway, *e.g.*, CTLA4, PD-1, TIM3, LAG3, BTLA, VISTA and TIGIT. Patent applications in this family are pending in the United States, China, Europe, and Japan. Patent applications in the second of these two families includes disclosure and claims related to multimeric antibodies (*e.g.*, IgM, IgA or hybrid multimeric antibodies) that include a modified J chain, where the modified J chain includes a moiety that affects adsorption, distribution, metabolism, and/or excretion (ADME) of the multimeric antibody. Exemplary moiety types include, but are not limited to, proteins that increase antibody serum half-life, proteins that affect receptor-mediated transcytosis, and proteins that increase retention of the multimeric antibody in an extravascular space. Patent applications in this family are pending in the United States, Australia, Canada, China, Europe, Hong Kong (registered through the European Patent Office), and Japan.

We also own an international patent application, filed under the Patent Cooperation Treaty (PCT) that includes disclosure and claims related to J chain and IgM Fc mutations that inhibit binding of IgM to certain multimeric Ig receptors including the Fcαμ receptor, the Fcμ receptor, and the polymeric Ig receptor. The claims are related to IgM and IgM-derived antibodies that include these mutations, and have substantially increased serum half-lives relative to wild type IgM antibodies. This patent application has a projected expiration date of March 1, 2039, absent any patent term adjustments or extensions. The application is in the international PCT stage and will enter national stage prosecution on or before September 1 or October 1, 2020, depending on the jurisdiction.

Our platform technology portfolio also includes an international patent application, filed under the PCT that includes disclosure and claims related to IgM antibody Fc modifications that affect the ability of the IgM antibody to trigger CDC. The patent application discloses and claims single and combined human IgM Fc amino acid substitutions that reduce and/or completely inhibit IgM's typical CDC activity. This application has a projected expiration date of April 6, 2038, absent any patent term adjustments or extensions. The application is in the international PCT stage and will enter national stage prosecution on or before October 7 or November 7, 2019, depending on the jurisdiction.

We also own two patent families that include disclosure and claims related to multispecific IgM and IgA antibodies, respectively, where the multispecificity of the assembled IgM or IgA binding domains is created through knobs into holes or salt bridge modifications of the IgM or IgA heavy chain constant regions. The multispecific IgM patent family is titled "Constant Chain Modified Bispecific, Penta- and Hexavalent IgM Antibodies," and is projected to expire on September 4, 2034, absent any patent term adjustments or extensions. This family includes a granted U.S. patent, with claims related to bispecific IgM antibodies with specific heavy and light chain mutations to facilitate formation of bispecific binding regions. Related patent applications are pending in Australia, Brazil, Canada, China, Europe, India, Japan, and South Korea. The multispecific IgA patent family is titled "IgA Multi-specific Binding Molecules," and is projected to expire on February 10, 2035, absent any patent term adjustments or extensions. Patent applications in this patent family are pending in the United States, Australia, Brazil, Canada, China, Europe, Hong Kong (registered through the European Patent Office), India, Japan, and South Korea.

Product Candidates and Discovery Pipeline

Our product candidates and discovery pipeline patent portfolio includes 13 patent families with claims directed to our product candidates. These include one patent family with claims directed to IGM-2323 and two patent families with claims directed to our DR5 IgM antibody. Our product portfolio also includes a granted U.S. patent with claims directed to IgM antibody superagonists specific for TNFrSF targets. As of June 30, 2019, our product portfolio includes one granted patent, 82 applications in active prosecution in 14 countries or regions, one pending PCT application and five unpublished pending U.S. provisional applications. These patent families are projected to expire between 2036 and 2040, absent any patent term adjustments or extensions. We wholly own the rights to these patent families. Summaries of published patent families relevant to our product candidates and our discovery pipeline are provided below.

The patent family directed to IGM-2323 has a projected expiration date of March 4, 2036, absent any patent term adjustments or extensions. This patent family includes claims directed to multimeric antibodies, *e.g.*, IgM and IgA antibodies, that include the IGM-2323 antigen binding domains and methods of treating cancer patients with such antibodies. This patent family further discloses antibodies that include a modified J chain, where the modified J chain includes an antigen-binding domain specific for CD3-epsilon. This patent family, in combination with the "Modified J Chain" application family discussed above, includes claims directed to the IGM-2323 composition, as well as methods of making and using the same. Patent applications in this family are pending in the United States, Australia, Brazil, Canada, China, Europe, India, Israel, Japan, South Korea, New Zealand, Singapore, and Hong Kong (registered through the European Patent Office).

Our patent portfolio also includes six patent families owned by us directed to our TNFrSF superagonist technology and product candidates. The first patent family includes disclosure and claims directed to multimeric superagonist antibodies that bind to any TNFrSF target. This family also includes disclosure and claims directed multimeric superagonist antibodies that bind to DR5 that relate to our DR5 IgM antibody product candidate. The application, which we own, has a projected expiration date of January 20, 2036, absent any patent term adjustments or extensions, and includes a U.S. patent that has granted, which is generically directed to IgM-based TNFrSF superagonists and their use in treating cancer patients. In addition, claims directed to DR5-targeted multimeric superagonists and specifically our DR5 IgM antibody are pending in the United States. The patent family is also

pending in Australia, Canada, China, Europe, Hong Kong (registered through the European Patent Office), India, Israel, Japan, South Korea, New Zealand, Singapore, with claims relating broadly to TNFrSF superagonists and also to DR5 superagonists.

Four patent families are each directed to a specific TNFrSF target, OX40, GITR, CD137/4-1BB, and CD40, respectively, and have projected expiration dates of either July 19, 2037 or July 20, 2037, absent any patent term adjustments or extensions. The OX40 family has a projected expiration date of July 20, 2037, absent any patent term adjustments or extensions, and includes claims directed to a variety of different multimeric OX40 superagonist antibodies and their use for treating cancer patients. Patent applications in this family are pending in the United States, Australia, Canada, China, Europe India, Israel, Japan, Mexico, and New Zealand. The GITR family has a projected expiration date of July 20, 2037, absent any patent term adjustments or extensions, and includes claims directed to a variety of different multimeric GITR superagonist antibodies and their use for treating cancer patients. Patent applications in this family are pending in the United States, Australia, Canada, China, Europe India, Israel, Japan, Mexico, and New Zealand. The CD137/4-1BB family has a projected expiration date of July 19, 2037, absent any patent term adjustments or extensions, and includes claims directed to a variety of different multimeric CD137/4-1BB superagonist antibodies and their use for treating cancer patients. Patent applications in this family are pending in the United States, Australia, Canada, and Europe. The CD40 family has a projected expiration date of July 19, 2037, absent any patent term adjustments or extensions, and includes claims directed to a variety of different multimeric CD40 superagonist antibodies and their use for treating cancer patients. Patent applications in this family are pending in the United States, Australia, Canada, and Europe.

Our patent portfolio also includes an international PCT application directed to combination cancer therapies that include a DR5 superagonist antibody, *e.g.*, our DR5 IgM antibody, in combination with a chemotherapeutic agent, *e.g.*, irinotecan, gemcitabine, or venetoclax. This application has a projected expiration date of February 25, 2039, absent any patent term adjustments or extensions. The application is in the international PCT stage and will enter national stage prosecution on or before August 26 or September 26, 2020, depending on the jurisdiction.

As part of our research pipeline, our patent portfolio also includes a patent family related to the identification and characterization of novel PD-L1 antibodies. This application family, titled “Anti-PD-L1 Antibodies,” has a projected expiration date of May 9, 2037, absent any patent term adjustments or extensions. Patent applications in this family are pending in the United States, Australia, Canada, China, Europe, Hong Kong (registered through the European Patent Office), India, Israel, Japan, South Korea, New Zealand, and Singapore.

Our commercial success will depend in part on obtaining and maintaining patent protection and trade secret protection of our current and future product candidates and the methods used to develop and manufacture them, as well as successfully defending these patents against any third-party challenges. Our ability to stop third parties from making, using, selling, offering to sell or importing our product candidates depends on the extent to which we have rights under valid and enforceable patents or trade secrets that cover these activities. We cannot be sure that patents will be granted with respect to any of our pending patent applications or with respect to any patent applications filed by us in the future, nor can we be sure that any of our existing patents or any patents that may be granted to us in the future will be commercially useful in protecting our product candidates, discovery programs and processes.

The term of individual patents depends upon the legal term of the patents in the countries in which they are obtained. In most countries in which we file, the patent term is 20 years from the earliest date of filing a non-provisional patent application. In the United States, the patent term of a patent that covers an FDA-approved drug may also be eligible for patent term extension, which permits patent term restoration as compensation for the patent term lost during the FDA regulatory review process. The Hatch-Waxman Amendments permit a patent term extension of up to five years beyond the expiration of the patent, insofar as the patent covers the FDA-approved product. The length of the patent term extension is related to the length of time the drug is under regulatory review. Patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval, only one patent applicable to an approved drug may be extended and only those claims covering the approved drug, a method for using it or a method for manufacturing it may be extended. Similar provisions are available in foreign jurisdictions to extend the term of a patent that covers an approved drug. In the future, if and when our product candidates receive FDA approval, we expect to apply for patent term extensions on patents covering those products. While we plan to seek patent term extensions on any of our issued patents in any

jurisdiction where these are available, there is no guarantee that the applicable authorities, including the FDA in the United States, will agree with our assessment of whether such extensions should be granted and, if granted, the length of such extensions.

In addition to patent protection, we also rely on trademark registration, trade secrets, know how, other proprietary information and continuing technological innovation to develop and maintain our competitive position. We seek to protect and maintain the confidentiality of proprietary information to protect aspects of our business that are not amenable to, or that we do not consider appropriate for, patent protection. Although we take steps to protect our proprietary information and trade secrets, including through contractual means with our employees and consultants, third parties may independently develop substantially equivalent proprietary information and techniques or otherwise gain access to our trade secrets or disclose our technology. We may therefore not be able to meaningfully protect our trade secrets. It is our policy to require our employees, consultants, outside scientific collaborators, sponsored researchers and other advisors to execute confidentiality agreements upon the commencement of employment or consulting relationships with us. These agreements provide that all confidential information concerning our business or financial affairs developed or made known to the individual during the course of the individual's relationship with us is to be kept confidential and not disclosed to third parties except in specified circumstances. Our agreements with employees also provide that all inventions conceived by the employee in the course of employment with us or from the employee's use of our confidential information are our exclusive property. However, such confidentiality agreements and invention assignment agreements can be breached and we may not have adequate remedies for any such breach.

The patent positions of biotechnology companies like ours are generally uncertain and involve complex legal, scientific and factual questions. Our commercial success will also depend in part on not infringing upon the proprietary rights of third parties. It is uncertain whether the issuance of any third-party patent would require us to alter our development, commercial strategies, drugs or processes, or to obtain licenses or cease certain activities. Our breach of any license agreements or our failure to obtain a license to proprietary rights required to develop or commercialize our future products may have a material adverse impact on us. If third parties prepare and file patent applications in the United States that also claim technology to which we have rights, we may have to participate in derivation proceedings in the USPTO to determine priority of invention.

For more information on these risks and other comprehensive risks related to our intellectual property, see the section titled "Risk Factors—Risks Related to Our Intellectual Property."

Government Regulation

The FDA and other regulatory authorities at federal, state and local levels, as well as in foreign countries, extensively regulate, among other things, the research, development, testing, manufacture, quality control, import, export, safety, effectiveness, labeling, packaging, storage, distribution, record keeping, approval, advertising, promotion, marketing, post-approval monitoring and post-approval reporting of biologics such as those we are developing. We, along with third-party contractors, will be required to navigate the various preclinical, clinical and commercial approval requirements of the governing regulatory agencies of the countries in which we wish to conduct studies or seek approval or licensure of our product candidates.

U.S. Biologics Regulation

The process required by the FDA before biologic product candidates may be marketed in the United States generally involves the following:

- completion of preclinical laboratory tests and animal studies performed in accordance with the FDA's current Good Laboratory Practices (GLP) regulation;
- submission to the FDA of an IND, which must become effective before clinical trials may begin and must be updated annually or when significant changes are made;
- approval by an independent institutional review board (IRB) or ethics committee at each clinical site before the trial is commenced;
- performance of adequate and well-controlled human clinical trials to establish the safety, purity and potency of the proposed biologic product candidate for its intended purpose;

- preparation of and submission to the FDA of a Biologics License Application (BLA) after completion of all pivotal clinical trials;
- satisfactory completion of an FDA Advisory Committee review, if applicable;
- a determination by the FDA within 60 days of its receipt of a BLA to file the application for review;
- satisfactory completion of an FDA pre-approval inspection of the manufacturing facility or facilities at which the proposed product is produced to assess compliance with cGMPs and to assure that the facilities, methods and controls are adequate to preserve the biological product's continued safety, purity and potency, and of selected clinical investigation sites to assess compliance with good clinical practices (GCPs); and
- FDA review and approval of a BLA to permit commercial marketing of the product for particular indications for use in the United States.

Preclinical and Clinical Development

Prior to beginning the first clinical trial with a product candidate, we must submit an IND to the FDA. An IND is a request for authorization from the FDA to administer an investigational new drug product to humans. The central focus of an IND submission is on the general investigational plan and the protocol or protocols for preclinical studies and clinical trials. The IND also includes results of animal and *in vitro* studies assessing the toxicology, pharmacokinetics, pharmacology and pharmacodynamic characteristics of the product, chemistry, manufacturing and controls information, and any available human data or literature to support the use of the investigational product. An IND must become effective before human clinical trials may begin. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA, within the 30-day period, raises safety concerns or questions about the proposed clinical trial. In such a case, the IND may be placed on clinical hold and the IND sponsor and the FDA must resolve any outstanding concerns or questions before the clinical trial can begin. Submission of an IND therefore may or may not result in FDA authorization to begin a clinical trial.

Clinical trials involve the administration of the investigational product to human subjects under the supervision of qualified investigators in accordance with GCPs, which include the requirement that all research subjects provide their informed consent for their participation in any clinical study. Clinical trials are conducted under protocols detailing, among other things, the objectives of the study, the parameters to be used in monitoring safety and the effectiveness criteria to be evaluated. A separate submission to the existing IND must be made for each successive clinical trial conducted during product development and for any subsequent protocol amendments. Furthermore, an independent IRB for each site proposing to conduct the clinical trial must review and approve the plan for any clinical trial and its informed consent form before the clinical trial begins at that site, and must monitor the study until completed. Regulatory authorities, the IRB or the sponsor may suspend a clinical trial at any time on various grounds, including a finding that the subjects are being exposed to an unacceptable health risk or that the trial is unlikely to meet its stated objectives. Some studies also include oversight by an independent group of qualified experts organized by the clinical study sponsor, known as a data safety monitoring board, which provides authorization for whether or not a study may move forward at designated check points based on access to certain data from the study and may halt the clinical trial if it determines that there is an unacceptable safety risk for subjects or other grounds, such as no demonstration of efficacy. There are also requirements governing the reporting of ongoing preclinical studies and clinical trials and clinical study results to public registries.

For purposes of BLA approval, human clinical trials are typically conducted in three sequential phases that may overlap.

- *Phase 1.* The investigational product is initially introduced into healthy human subjects or patients with the target disease or condition. These studies are designed to test the safety, dosage tolerance, absorption, metabolism and distribution of the investigational product in humans, to identify possible side effects associated with increasing doses, and, if possible, to gain early evidence on effectiveness.
- *Phase 2.* The investigational product is administered to a limited patient population with a specified disease or condition to evaluate the preliminary efficacy, optimal dosages and dosing schedule and to identify possible adverse side effects and safety risks. Multiple Phase 2 clinical trials may be conducted to obtain information prior to beginning larger and more expensive Phase 3 clinical trials.

- *Phase 3.* The investigational product is administered to an expanded patient population to further evaluate dosage, to provide statistically significant evidence of clinical efficacy and to further test for safety, generally at multiple geographically dispersed clinical trial sites. These clinical trials are intended to establish the overall risk/benefit ratio of the investigational product and to provide an adequate basis for product approval.

In some cases, the FDA may require, or companies may voluntarily pursue, additional clinical trials after a product is approved to gain more information about the product. These so-called Phase 4 studies may be made a condition to approval of the BLA. Concurrent with clinical trials, companies may complete additional animal studies and develop additional information about the biological characteristics of the product candidate, and must finalize a process for manufacturing the product in commercial quantities in accordance with cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of the product candidate and, among other things, must develop methods for testing the identity, strength, quality and purity of the final product, or for biologics, the safety, purity and potency. Additionally, appropriate packaging must be selected and tested and stability studies must be conducted to demonstrate that the product candidate does not undergo unacceptable deterioration over its shelf life.

BLA Submission and Review

Assuming successful completion of all required testing in accordance with all applicable regulatory requirements, the results of product development, nonclinical studies and clinical trials are submitted to the FDA as part of a BLA requesting approval to market the product for one or more indications. The BLA must include all relevant data available from pertinent preclinical studies and clinical trials, including negative or ambiguous results as well as positive findings, together with detailed information relating to the product's chemistry, manufacturing, controls, and proposed labeling, among other things. The submission of a BLA requires payment of a substantial application user fee to the FDA, unless a waiver or exemption applies.

Once a BLA has been submitted, the FDA's goal is to review standard applications within ten months after it accepts the application for filing, or, if the application qualifies for priority review, six months after the FDA accepts the application for filing. In both standard and priority reviews, the review process is often significantly extended by FDA requests for additional information or clarification. The FDA reviews a BLA to determine, among other things, whether a product is safe, pure and potent and the facility in which it is manufactured, processed, packed or held meets standards designed to assure the product's continued safety, purity and potency. The FDA may convene an advisory committee to provide clinical insight on application review questions. Before approving a BLA, the FDA will typically inspect the facility or facilities where the product is manufactured. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. Additionally, before approving a BLA, the FDA will typically inspect one or more clinical sites to assure compliance with GCPs. If the FDA determines that the application, manufacturing process or manufacturing facilities are not acceptable, it will outline the deficiencies in the submission and often will request additional testing or information. Notwithstanding the submission of any requested additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval.

After the FDA evaluates a BLA and conducts inspections of manufacturing facilities where the investigational product and/or its drug substance will be produced, the FDA may issue an approval letter or a Complete Response letter. An approval letter authorizes commercial marketing of the product with specific prescribing information for specific indications. A Complete Response letter will describe all of the deficiencies that the FDA has identified in the BLA, except that where the FDA determines that the data supporting the application are inadequate to support approval, the FDA may issue the Complete Response letter without first conducting required inspections, testing submitted product lots and/or reviewing proposed labeling. In issuing the Complete Response letter, the FDA may recommend actions that the applicant might take to place the BLA in condition for approval, including requests for additional information or clarification. The FDA may delay or refuse approval of a BLA if applicable regulatory criteria are not satisfied, require additional testing or information and/or require post-marketing testing and surveillance to monitor safety or efficacy of a product.

If regulatory approval of a product is granted, such approval will be granted for particular indications and may entail limitations on the indicated uses for which such product may be marketed. For example, the FDA may approve the BLA with a Risk Evaluation and Mitigation Strategy (REMS) to ensure the benefits of the product outweigh its risks. A REMS is a safety strategy to manage a known or potential serious risk associated with a product and to enable patients to have continued access to such medicines by managing their safe use, and could include medication guides, physician communication plans, or elements to assure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. The FDA also may condition approval on, among other things, changes to proposed labeling or the development of adequate controls and specifications. Once approved, the FDA may withdraw the product approval if compliance with pre- and post-marketing requirements is not maintained or if problems occur after the product reaches the marketplace. The FDA may require one or more Phase 4 post-market studies and surveillance to further assess and monitor the product's safety and effectiveness after commercialization, and may limit further marketing of the product based on the results of these post-marketing studies.

Expedited Development and Review Programs

The FDA offers a number of expedited development and review programs for qualifying product candidates. The fast track program is intended to expedite or facilitate the process for reviewing new products that meet certain criteria. Specifically, new products are eligible for fast track designation if they are intended to treat patients with a serious or life-threatening disease or condition and demonstrate the potential to address unmet medical needs for the disease or condition. Fast track designation applies to the combination of the product and the specific indication for which it is being studied. The sponsor of a fast track product has opportunities for frequent interactions with the review team during product development and, once a BLA is submitted, the product may be eligible for priority review. A fast track product may also be eligible for rolling review, where the FDA may consider for review sections of the BLA on a rolling basis before the complete application is submitted, if the sponsor provides a schedule for the submission of the sections of the BLA, the FDA agrees to accept sections of the BLA and determines that the schedule is acceptable, and the sponsor pays any required user fees upon submission of the first section of the BLA.

A product intended to treat patients with a serious or life-threatening disease or condition may also be eligible for breakthrough therapy designation to expedite its development and review. A product can receive breakthrough therapy designation if preliminary clinical evidence indicates that the product, alone or in combination with one or more other drugs or biologics, may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. The designation includes all of the fast track program features, as well as more intensive FDA interaction and guidance beginning as early as Phase 1 and an organizational commitment to expedite the development and review of the product, including involvement of senior managers.

Any marketing application for a biologic submitted to the FDA for approval, including a product with a fast track designation and/or breakthrough therapy designation, may be eligible for other types of FDA programs intended to expedite the FDA review and approval process, such as priority review and accelerated approval. A product is eligible for priority review if it has the potential to provide a significant improvement in the treatment, diagnosis or prevention of a serious disease or condition. For original BLAs, priority review designation means the FDA's goal is to take action on the marketing application within six months of the 60-day filing date (as compared to ten months under standard review).

Additionally, products studied for their safety and effectiveness in treating patients with serious or life-threatening diseases or conditions may receive accelerated approval upon a determination that the product has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit, or on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality, that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments. As a condition of accelerated approval, the FDA will generally require the sponsor to perform adequate and well-controlled post-marketing clinical studies to verify and describe the anticipated effect on irreversible morbidity or mortality or other clinical benefit. In addition, the FDA currently requires as a condition for accelerated approval pre-approval of promotional materials, which could adversely impact the timing of the commercial launch of the product.

Fast track designation, breakthrough therapy designation, priority review and RMAT designation do not change the standards for approval but may expedite the development or approval process. Even if a product qualifies for one or more of these programs, the FDA may later decide that the product no longer meets the conditions for qualification or decide that the time period for FDA review or approval will not be shortened.

Orphan Drug Designation

Under the Orphan Drug Act, the FDA may grant orphan designation to a drug or biologic intended to treat patients with a rare disease or condition, which is a disease or condition that affects fewer than 200,000 individuals in the United States, or more than 200,000 individuals in the United States for which there is no reasonable expectation that the cost of developing and making available in the United States a drug or biologic for this type of disease or condition will be recovered from sales in the United States for that drug or biologic. Orphan drug designation must be requested before submitting a BLA. After the FDA grants orphan drug designation, the generic identity of the therapeutic agent and its potential orphan use are disclosed publicly by the FDA. The orphan drug designation does not convey any advantage in, or shorten the duration of, the regulatory review or approval process.

If a product that has orphan drug designation subsequently receives the first FDA approval for the disease for which it has such designation, the product is entitled to orphan drug exclusive approval (or exclusivity), which means that the FDA may not approve any other applications, including a full BLA, to market the same biologic for the same indication for seven years, except in limited circumstances, such as a showing of clinical superiority to the product with orphan drug exclusivity or if the FDA finds that the holder of the orphan drug exclusivity has not shown that it can assure the availability of sufficient quantities of the orphan drug to meet the needs of patients with the disease or condition for which the drug was designated. Orphan drug exclusivity does not prevent the FDA from approving a different drug or biologic for the same disease or condition, or the same drug or biologic for a different disease or condition. Among the other benefits of orphan drug designation are tax credits for certain research and a waiver of the BLA application fee.

A designated orphan drug may not receive orphan drug exclusivity if it is approved for a use that is broader than the indication for which it received orphan designation. In addition, exclusive marketing rights in the United States may be lost if the FDA later determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantities of the product to meet the needs of patients with the rare disease or condition.

Post-approval Requirements

Any products manufactured or distributed by us pursuant to FDA approvals are subject to pervasive and continuing regulation by the FDA, including, among other things, requirements relating to record-keeping, reporting of adverse experiences, periodic reporting, product sampling and distribution, and advertising and promotion of the product. After approval, most changes to the approved product, such as adding new indications or other labeling claims, are subject to prior FDA review and approval. There also are continuing user fee requirements, under which the FDA assesses an annual program fee for each product identified in an approved BLA. Biologic manufacturers and their subcontractors are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with cGMPs, which impose certain procedural and documentation requirements upon us and our third-party manufacturers. Changes to the manufacturing process are strictly regulated, and, depending on the significance of the change, may require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMPs and impose reporting requirements upon us and any third-party manufacturers that we may decide to use. Accordingly, manufacturers must continue to expend time, money and effort in the area of production and quality control to maintain compliance with cGMPs and other aspects of regulatory compliance.

The FDA may withdraw approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in revisions to the approved labeling to add new safety information; imposition of post-market studies or clinical studies to assess new safety risks; or imposition of distribution restrictions or other restrictions under a REMS program. Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of a product, complete withdrawal of the product from the market or product recalls;
- fines, warning letters or holds on post-approval clinical studies;
- refusal of the FDA to approve pending applications or supplements to approved applications, or suspension or revocation of existing product approvals;
- product seizure or detention, or refusal of the FDA to permit the import or export of products;
- consent decrees, corporate integrity agreements, debarment or exclusion from federal healthcare programs;
- mandated modification of promotional materials and labeling and the issuance of corrective information;
- the issuance of safety alerts, Dear Healthcare Provider letters, press releases and other communications containing warnings or other safety information about the product; or
- injunctions or the imposition of civil or criminal penalties.

The FDA closely regulates the marketing, labeling, advertising and promotion of biologics. A company can make only those claims relating to safety and efficacy, purity and potency that are approved by the FDA and in accordance with the provisions of the approved label. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses. Failure to comply with these requirements can result in, among other things, adverse publicity, warning letters, corrective advertising and potential civil and criminal penalties. Physicians may prescribe legally available products for uses that are not described in the product's labeling and that differ from those tested by us and approved by the FDA. Such off-label uses are common across medical specialties. Physicians may believe that such off-label uses are the best treatment for many patients in varied circumstances. The FDA does not regulate the behavior of physicians in their choice of treatments. The FDA does, however, restrict manufacturer's communications on the subject of off-label use of their products.

Biosimilars and Reference Product Exclusivity

The Patient Protection and Affordable Care Act (ACA) includes a subtitle called the BPCIA, which created an abbreviated approval pathway for biological products that are biosimilar to or interchangeable with an FDA-approved reference biological product. To date, a number of biosimilars have been licensed under the BPCIA, and numerous biosimilars have been approved in Europe. The FDA has issued several guidance documents outlining an approach to review and approval of biosimilars.

Biosimilarity, which requires that there be no clinically meaningful differences between the biological product and the reference product in terms of safety, purity, and potency, can be shown through analytical studies, animal studies, and a clinical study or studies. Interchangeability requires that a product is biosimilar to the reference product and the product must demonstrate that it can be expected to produce the same clinical results as the reference product in any given patient and, for products that are administered multiple times to an individual, the biologic and the reference biologic may be alternated or switched after one has been previously administered without increasing safety risks or risks of diminished efficacy relative to exclusive use of the reference biologic. Complexities associated with the larger, and often more complex, structures of biological products, as well as the processes by which such products are manufactured, pose significant hurdles to implementation of the abbreviated approval pathway that are still being worked out by the FDA.

Under the BPCIA, an application for a biosimilar product may not be submitted to the FDA until four years following the date that the reference product was first licensed by the FDA. In addition, the approval of a biosimilar product may not be made effective by the FDA until 12 years from the date on which the reference product was first licensed. During this 12-year period of exclusivity, another company may still market a competing version of the reference product if the FDA approves a full BLA for the competing product containing that applicant's own

preclinical data and data from adequate and well-controlled clinical trials to demonstrate the safety, purity and potency of its product. The BPCIA also created certain exclusivity periods for biosimilars approved as interchangeable products. At this juncture, it is unclear whether products deemed “interchangeable” by the FDA will, in fact, be readily substituted by pharmacies, which are governed by state pharmacy law.

The BPCIA is complex and continues to be interpreted and implemented by the FDA. In addition, government proposals have sought to reduce the 12-year reference product exclusivity period. Other aspects of the BPCIA, some of which may impact the BPCIA exclusivity provisions, have also been the subject of recent litigation. As a result, the ultimate impact, implementation, and impact of the BPCIA are subject to significant uncertainty.

Other Healthcare Laws and Compliance Requirements

Pharmaceutical companies are subject to additional healthcare regulation and enforcement by the federal government and by authorities in the states and foreign jurisdictions in which they conduct their business. Such laws include, without limitation: the federal Anti-Kickback Statute, the federal False Claims Act, the Health Insurance Portability and Accountability Act (HIPAA) and similar foreign, federal and state fraud and abuse, transparency and privacy laws.

The federal Anti-Kickback Statute prohibits, among other things, persons and entities from knowingly and willfully soliciting, receiving, offering or paying remuneration, to induce, or in return for, either the referral of an individual, or the purchase or recommendation of an item or service for which payment may be made under any federal healthcare program. The term remuneration has been interpreted broadly to include anything of value, including stock options. The federal Anti-Kickback Statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on one hand and prescribers, purchasers and formulary managers, among others, on the other. There are a number of statutory exceptions and regulatory safe harbors protecting some common activities from prosecution, but they are drawn narrowly and practices that involve remuneration, such as consulting agreements, that may be alleged to be intended to induce prescribing, purchasing or recommending may be subject to scrutiny if they do not qualify for an exception or safe harbor. Failure to meet all of the requirements of a particular applicable statutory exception or regulatory safe harbor does not make the conduct per se illegal under the federal Anti-Kickback Statute. Instead, the legality of the arrangement will be evaluated on a case-by-case basis based on a cumulative review of all of its facts and circumstances. Our practices may not in all cases meet all of the criteria for protection under a statutory exception or regulatory safe harbor. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation. In addition, a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal False Claims Act.

Civil and criminal false claims laws, including the federal False Claims Act, which can be enforced through civil whistleblower or qui tam actions, and civil monetary penalty laws, which can be enforced through civil whistleblower or qui tam actions, prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment to the federal government, including federal healthcare programs, that are false or fraudulent. For example, the federal False Claims Act prohibits any person or entity from knowingly presenting, or causing to be presented, a false claim for payment to the federal government or knowingly making, using or causing to be made or used a false record or statement material to a false or fraudulent claim to the federal government. A claim includes “any request or demand” for money or property presented to the U.S. government. Several pharmaceutical and other healthcare companies have been prosecuted under these laws for allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product.

HIPAA created additional federal criminal statutes that prohibit, among other things, executing a scheme to defraud any healthcare benefit program, including private third-party payors, and making false statements relating to healthcare matters. In addition, HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act (HITECH), and their implementing regulations, impose certain requirements on HIPAA covered entities, which include certain healthcare providers, healthcare clearing houses and health plans, and individuals and entities that provide services on their behalf that involves individually identifiable health information, known as business associates, relating to the privacy, security and transmission of individually identifiable health information.

The U.S. federal Physician Payments Sunshine Act requires certain manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children’s Health Insurance

Program, with specific exceptions, to annually report to the Center for Medicare & Medicaid Services (CMS) information related to payments or other transfers of value made to physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members.

We are also subject to additional similar U.S. state and foreign law equivalents of each of the above federal laws, which, in some cases, differ from each other in significant ways, and may not have the same effect, thus complicating compliance efforts. If our operations are found to be in violation of any of such laws or any other governmental regulations that apply, we may be subject to penalties, including, without limitation, significant civil, criminal and administrative penalties, damages, fines, exclusion from government-funded healthcare programs, such as Medicare and Medicaid or similar programs in other countries or jurisdictions, integrity oversight and reporting obligations to resolve allegations of non-compliance, disgorgement, imprisonment, contractual damages, reputational harm, diminished profits and the curtailment or restructuring of our operations.

Coverage and Reimbursement

Significant uncertainty exists as to the coverage and reimbursement status of any pharmaceutical or biological product for which we obtain regulatory approval. Sales of any product, if approved, depend, in part, on the extent to which such product will be covered by third-party payors, such as federal, state, and foreign government healthcare programs, commercial insurance and managed healthcare organizations, and the level of reimbursement, if any, for such product by third-party payors. Decisions regarding whether to cover any of our product candidates, if approved, the extent of coverage and amount of reimbursement to be provided are made on a plan-by-plan basis. Further, no uniform policy for coverage and reimbursement exists in the United States, and coverage and reimbursement can differ significantly from payor to payor. Third-party payors often rely upon Medicare coverage policy and payment limitations in setting their own reimbursement rates, but also have their own methods and approval process apart from Medicare determinations. As a result, the coverage determination process is often a time-consuming and costly process that will require us to provide scientific and clinical support for the use of our product candidates to each payor separately, with no assurance that coverage and adequate reimbursement will be applied consistently or obtained in the first instance.

For products administered under the supervision of a physician, obtaining coverage and adequate reimbursement may be particularly difficult because of the higher prices often associated with such drugs. Additionally, separate reimbursement for the product itself or the treatment or procedure in which the product is used may not be available, which may impact physician utilization.

In addition, the U.S. government, state legislatures and foreign governments have continued implementing cost-containment programs, including price controls, restrictions on coverage and reimbursement and requirements for substitution of generic products. Third-party payors are increasingly challenging the prices charged for medical products and services, examining the medical necessity and reviewing the cost effectiveness of pharmaceutical or biological products, medical devices and medical services, in addition to questioning safety and efficacy. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit sales of any product that receives approval. Decreases in third-party reimbursement for any product or a decision by a third-party not to cover a product could reduce physician usage and patient demand for the product. No regulatory authority has granted approval for a personalized cancer immunotherapy based on a vaccine approach, and there is no model for reimbursement of this type of product.

Healthcare Reform

The United States and some foreign jurisdictions are considering or have enacted a number of reform proposals to change the healthcare system. There is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality or expanding access. In the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by federal and state legislative initiatives, including those designed to limit the pricing, coverage, and reimbursement of pharmaceutical and biopharmaceutical products, especially under government-funded health care programs, and increased governmental control of drug pricing.

The ACA, which was enacted in March 2010, substantially changed the way healthcare is financed by both governmental and private insurers in the United States, and significantly affected the pharmaceutical industry. The

ACA contains a number of provisions of particular import to the pharmaceutical and biotechnology industries, including, but not limited to, those governing enrollment in federal healthcare programs, a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected, a new licensure framework for follow on biologic products, and annual fees based on pharmaceutical companies' share of sales to federal health care programs. Since its enactment, there have been judicial and Congressional challenges to certain aspects of the ACA, and we expect there will be additional challenges and amendments to the ACA in the future. For example, the Tax Cuts and Jobs Act of 2017 (Tax Act) was enacted, which, among other things, removes penalties for not complying with ACA's individual mandate to carry health insurance, effective January 1, 2019. On December 14, 2018, the Texas District Court Judge ruled that the individual mandate is a critical and inseverable feature of the ACA, and therefore, because it was repealed as part of the Tax Act, the remaining provisions of the ACA are invalid as well. While the Texas District Court Judge, as well as the Trump administration and CMS, have stated that the ruling will have no immediate effect, and on December 30, 2018 the Texas District Court Judge issued an order staying the judgment pending appeal, it is unclear how this decision, subsequent appeals, and other efforts to repeal and replace the ACA will impact the ACA. Since the enactment of the Tax Act, there have been additional amendments to certain provisions of the ACA, and the Trump administration and Congress may continue to seek to modify, repeal, or otherwise invalidate all, or certain other provisions of, the ACA.

Other legislative changes have been proposed and adopted since the ACA was enacted, including aggregate reductions of Medicare payments to providers of 2% per fiscal year and reduced payments to several types of Medicare providers. These reductions went into effect in April 2013 and, due to subsequent legislative amendments to the statute, will remain in effect through 2027 unless additional action is taken by Congress.

Moreover, there has recently been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products, which has resulted in several Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drug products. At the federal level, the Trump administration's budget proposal for fiscal year 2019 contains further drug price control measures that could be enacted during the 2019 budget process or in other future legislation, including, for example, measures to permit Medicare Part D plans to negotiate the price of certain drugs under Medicare Part B, to allow some states to negotiate drug prices under Medicaid, and to eliminate cost sharing for generic drugs for low-income patients. Further, the Trump administration released a "Blueprint" to lower drug prices and reduce out of pocket costs of drugs that contains additional proposals to increase manufacturer competition, increase the negotiating power of certain federal healthcare programs, incentivize manufacturers to lower the list price of their products and reduce the out of pocket costs of drug products paid by consumers. The U.S. Department of Health and Human Services has solicited feedback on certain of these measures and, additionally, is immediately implementing others under its existing authority. For example, in September 2018, CMS announced that it will allow Medicare Advantage Plans the option to use step therapy for Part B drugs beginning January 1, 2019. Additionally, CMS issued a final rule, effective on July 9, 2019, that requires direct-to-consumer television advertisements of prescription drugs and biological products, for which payment is available through or under Medicare or Medicaid, to include in the advertisement the Wholesale Acquisition Cost, or list price, of that drug or biological product if it is equal to or greater than $35 for a monthly supply or usual course of treatment. Prescription drugs and biological products that are in violation of these requirements will be included on a public list. Congress and the Trump administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing.

Additionally, the Right to Try Act, which was enacted on May 30, 2018, provides a federal framework for certain patients with life-threatening diseases to access certain investigational new drug products that have completed a Phase 1 clinical trial and that are undergoing investigation for FDA approval. Under certain circumstances, eligible patients can seek treatment without enrolling in clinical trials and without obtaining FDA permission under the FDA

expanded access program. There is no obligation for a drug manufacturer to make its drug products available to eligible patients as a result of the Right to Try Act.

Employees

As of August 31, 2019, we had 51 employees, 50 of whom are full-time employees and 40 of whom were engaged in research and development activities. None of our employees are represented by labor unions or covered by collective bargaining agreements. We consider our relationship with our employees to be good.

Property

We currently lease approximately 34,000 square feet of office, laboratory and manufacturing space in Mountain View, California under a lease that expires in May 2025. We believe this space is sufficient to meet our near-term needs and that any additional space we may require will be available on commercially reasonable terms.

Legal Proceedings

From time to time, we may become involved in legal proceedings arising in the ordinary course of our business. We are not currently a party to any material legal proceedings. Regardless of outcome, litigation can have an adverse impact on us due to defense and settlement costs, diversion of management resources, negative publicity, reputational harm and other factors.

MANAGEMENT

Executive Officers, Key Employees and Directors

The following table sets forth certain information regarding our executive officers, key employees and directors as of August 31, 2019:

NAME	AGE	POSITION(S)
Executive Officers:		
Fred Schwarzer	67	Chief Executive Officer, President and Director
Daniel Chen, M.D., Ph.D.	50	Chief Medical Officer
Bruce Keyt, Ph.D.	66	Chief Scientific Officer
Misbah Tahir	44	Chief Financial Officer
Key Employees:		
Ramesh Baliga, Ph.D.	51	Vice President, Discovery Biology
Stephen Carroll, Ph.D.	68	Vice President, Preclinical Sciences
Wayne Godfrey, M.D.	59	Vice President, Clinical Development
Elizabeth Haanes, Ph.D.	62	Vice President, Intellectual Property
Marvin Peterson, Ph.D.	54	Vice President, Process Sciences and Manufacturing
Angus Sinclair, Ph.D.	52	Vice President, Immuno-Oncology
Suzette Tauber	56	Vice President, Human Resources
Non-Employee Directors:		
Michael Loberg, Ph.D.(1)(2)(3)(4)	72	Chair
M. Kathleen Behrens, Ph.D.(1)(2)(3)	66	Director
Julie Hambleton, M.D.(1)(4)	61	Director
Michael Lee.	40	Director
Kelvin Neu, M.D.(4)	45	Director
William Strohl, Ph.D.(4)	67	Director
Christina Teng Topsøe(2)(3)	38	Director
Jakob Haldor Topsøe	50	Director

(1) Member of our audit committee
(2) Member of our compensation committee
(3) Member of our corporate governance and nominating committee
(4) Member of our research and clinical development committee

Executive Officers

Fred Schwarzer has served as our Chief Executive Officer since July 2010 and has been a member of our board of directors since February 2003, serving as Chairman until August 2018. Mr. Schwarzer has also served as our President since December 2018, and previously served as Chief Executive Officer and President at different times between December 1999 and May 2003. Mr. Schwarzer was a founder of Charter Life Sciences, a venture capital firm specializing in life sciences investments, in 2003 and served as its Managing Partner from inception until August 2019. Mr. Schwarzer previously served as Chair of the board of directors of Inviragen, a biopharmaceutical company and developer of the DENVax dengue vaccine, from 2009 until Inviragen's acquisition by Takeda Pharmaceutical Company in 2013. He also served as Chief Executive Officer and Chairman of the board of directors of Heska Corporation, a biotechnology company focused primarily on the animal healthcare markets, from 1994 to 1998 and 1999 to 2001, respectively. Mr. Schwarzer received a B.A. in Pre-Legal Studies from the University of Michigan and a J.D. from the University of California, Berkeley, School of Law.

We believe Mr. Schwarzer is qualified to serve on our board of directors because of his expertise and experience as our Chief Executive Officer and President, his depth and expertise in the life sciences and venture capital industries, his leadership experience and his educational background.

Daniel Chen, M.D., Ph.D. has served as our Chief Medical Officer since August 2018. Prior to joining us, Dr. Chen served in various positions at Roche/Genentech, a biopharmaceutical company, starting in 2006, including most recently as Vice President, Global Head of Cancer Immunotherapy from May 2016 to July 2018. While at Roche/ Genentech, Dr. Chen also served as Cancer Immunotherapy Franchise Head, Product Development from 2014 to 2018 and led the development of Tecentriq from entry into first in human studies to multiple global registration approvals. Dr. Chen has also served on the board of directors of the Society for Immunotherapy of Cancer since July 2018 and is currently co-chair of the Cancer Immunotherapy Committee, an arm of the Cancer Research Institute. Dr. Chen received a B.S. in Life Sciences from the Massachusetts Institute of Technology and an M.D. and Ph.D. from the University of Southern California, Keck School of Medicine and Microbiology. He completed his residency in internal medicine, a fellowship in Medical Oncology and a Post-doctorate in Immunology at Stanford University. Dr. Chen also ran the metastatic melanoma clinic at the Stanford Cancer Center from 2003 to 2006, where he cared for melanoma patients and studied human immune responses to cancer vaccination and cytokine administration, until 2016.

Bruce Keyt, Ph.D. has served as our Chief Scientific Officer since August 2012 and previously served as a consultant for us beginning in August 2010. Prior to joining us, Dr. Keyt served as Chief Technology Officer at Trellis Bioscience, an antibody discovery company, from August 2007 to February 2010. Earlier in his career, he served as Head of Research between 2005 and 2006 at Abmaxis, a biotechnology company, which was acquired by Merck. He was the Vice President of Preclinical Development at Abgenix, a biotechnology company, from 2001 through the acquisition of Abgenix by Amgen in 2005. Dr. Keyt was the Director of Pharmacology at Millennium Pharmaceuticals from 1998 to 2001. From 1982 to 1998, he served in research and development roles at Roche/Genentech as a Scientist and Senior Scientist, where he made significant contributions to the discovery and development of Avastin, Lucentis, Activase tPA, TNKase-tPA and Kogenate. Dr. Keyt received a B.A. in Chemistry from Washington University in St. Louis and a Ph.D. in Biochemistry from Tufts University School of Medicine.

Misbah Tahir has served as our Chief Financial Officer since January 2019. Prior to joining us, Mr. Tahir worked at Dermira, a biotechnology company, where he served as Vice President, Head of Finance from March 2016 to December 2018, Senior Director, Head of Finance from January 2015 to March 2016, and Senior Director, Finance from January 2014 to December 2014. Prior to joining Dermira, he held finance leadership positions at various biotechnology companies, including Onyx Pharmaceuticals, Human Genome Sciences and Amgen. Mr. Tahir began his career as a management consultant at the consulting firm of Oliver Wyman, formerly Mercer Management Consulting. He received a B.A. in International Relations from the University of Pennsylvania and an M.B.A. from the University of Michigan Business School. Mr. Tahir is a certified public accountant, inactive, in the state of California.

Key Employees

Ramesh Baliga, Ph.D. has served as our Vice President, Discovery Biology since November 2014. Prior to joining us, Dr. Baliga founded Extend Biopharma, a biopharmaceutical company, in November 2012 and served as Chief Science Officer until November 2014. He previously held scientific and leadership positions at Sutro Biopharma, a clinical stage biotechnology company, Catalyst Biosciences, a biopharmaceutical company, and Cytokinetics, a biopharmaceutical company. Dr. Baliga received an M.Sc. in Chemistry from the Indian Institute of Technology and a Ph.D. in Chemistry from the California Institute of Technology. He completed his post doctorate at Yale University in Biophysics.

Stephen Carroll, Ph.D. has served as our Vice President, Preclinical Sciences since September 2015. Prior to joining us, Dr. Carroll founded Altair BioConsulting, a biotechnology consulting firm, in December 2003 and served as its President until August 2015, and through which he also served as a consultant to us from May 2013 to August 2015. Dr. Carroll also previously served in various positions at XOMA, a biotechnology company, including most recently as Vice President, Scientific and Product Development from 2002 to 2003. He received a B.A. in Biology from the University of California, San Diego, and a Ph.D. in Microbiology from the University of California, Los Angeles. Dr. Carroll completed his post doctorate in Microbiology at the University of California, Los Angeles, and was an Assistant Professor in the Department of Microbiology and Molecular Genetics at Harvard Medical School.

Wayne Godfrey, M.D. has served as our Vice President, Clinical Development since November 2018. Prior to joining us, Dr. Godfrey served as Senior Director, Clinical Development at Kite Pharma, a biotechnology company and a subsidiary of Gilead, from July 2017 to November 2018 where he made significant contributions to the development of Yescarta, as Principal at ImmTak Consulting, an oncology consulting firm for clinical development, from July 2015 to June 2017, as Chief Medical Officer at Etubics, a biopharmaceutical company, from December 2015 to December 2016, as Senior Director, Clinical Research Oncology at Gilead, from January 2012 to April 2015, where he contributed to the filing and FDA approval of Zydelig. He also previously served as a life sciences consultant from May 2015 to June 2015 and as Chief Medical Officer and Vice President, Clinical Development at Bavarian Nordic, a research-based biopharmaceutical company, from 2007 to 2012. He received a B.A. in Biochemistry and Molecular Biology from the University of California, Santa Barbara, an M.S. in Biological Sciences from Stanford University and an M.D. from Washington University School of Medicine in St. Louis. Dr. Godfrey completed his internal medicine residency and a hematology fellowship at Stanford University School of Medicine.

Elizabeth Haanes, Ph.D. has served as our Vice President, Intellectual Property since August 2019. Prior to joining us, Dr. Haanes served as a Partner in the intellectual property group of FisherBroyles, LLP, a law firm, from March 2018 to August 2019, and as a Partner in the intellectual property group of Thompson Coburn LLP, a law firm, from January 2014 to March 2018. Dr. Haanes received a B.S. in Biology from the University of Michigan, a Ph.D. in Microbiology from the University of Minnesota and a J.D. from the University of Colorado.

Marvin Peterson, Ph.D. has served as our Vice President, Process Sciences and Manufacturing since November 2017. Prior to joining us, Dr. Peterson served as Senior Director, Manufacturing at MabVax Therapeutics, a biotechnology company, from July 2015 to November 2017 and as Senior Director, Upstream Process Development and Manufacturing at Ambrx, a biotechnology company, from April 2014 to July 2015. He also previously served in manufacturing, scientific and leadership positions at multiple biotechnology companies, including Bristol-Myers Squibb, Eli Lilly, Celgene and Shire. He received a B.S. in Chemical Engineering from the University of Colorado, Boulder and a Ph.D. in Chemical Engineering from Purdue University. Dr. Peterson completed his post doctorate at the University of Minnesota, BioProcess Technology Institute.

Angus Sinclair, Ph.D. has served as our Vice President, Immuno-Oncology since February 2018. Prior to joining us, Dr. Sinclair served as Senior Director, Oncology Research at Northern Biologics, a biotechnology company, from February 2015 to January 2018. He also previously served in various positions at Amgen, a biopharmaceutical company, including most recently as Scientific Director, Oncology Research from January 2011 to February 2015. Dr. Sinclair performed post-doctoral research at the University of California, San Diego, the University of Cambridge, and an instructorship at the University of Texas Southwestern Medical Center, where he studied gene therapy and the genetic regulation of the developing innate and adaptive immune systems. Dr. Sinclair received a B.S. in Molecular Biology from the University of Edinburgh and a Ph.D. in Hematology/Molecular Biology from University College London.

Suzette Tauber has served as our Vice President, Human Resources since June 2019. Prior to joining us, Ms. Tauber served as Senior Director, Head of Human Resources at ARMO Biosciences, a biotechnology company, which was acquired by Eli Lilly, from November 2017 to April 2019, as a human resources consultant and member of the executive management team at Ravix Group, a consulting firm, from April 2012 to November 2017, and as a human resources consultant at Aeneas Consulting, a consulting firm, from February 2014 to September 2016. Ms. Tauber received a B.A. in Communications from Northern Arizona University.

Non-Employee Directors

Michael Loberg, Ph.D. has served as a member of our board of directors since September 2015, and as Chair of our board of directors since August 2018. Since January 2007, Dr. Loberg has served on the board of directors of ArQule, a biopharmaceutical company, and is also a member of its compensation, nominating and governance committee and science committee. Dr. Loberg previously served on the board of directors of Inotek Pharmaceuticals, a biopharmaceutical company, from March 2006 to July 2014 and as Interim Chief Executive Officer from 2007 to 2009. Previously, he served as Chief Executive Officer and a member of the Board of Directors of NitroMed, a pharmaceutical company, from September 1997 to March 2006 and as its President from September 2003 to March 2006. From 1979 to 1997, Dr. Loberg held a number of senior management positions at Bristol-Myers

Squibb, including President of Bristol-Myers Squibb's Oncology and Immunology, U.S. Primary Care, Northern Europe, Specialty Pharmaceuticals and Squibb Diagnostics divisions, as well as Director and Vice President, E.R. Squibb & Sons Research and Development. Dr. Loberg received a B.S. in Chemistry from Trinity College and a Ph.D. in Chemistry from Washington University in St. Louis.

We believe Dr. Loberg is qualified to serve as Chair of our board of directors because of his extensive career in the pharmaceutical industry, leadership skills and life sciences public company experience.

M. Kathleen Behrens, Ph.D. has served as a member of our board of directors since January 2019. Since December 2009, Dr. Behrens has served as an independent life sciences consultant and investor. From January 2012 to June 2014, she served as the Co-Founder, President, Chief Executive Officer and director of the KEW Group, a private oncology services company. From 1996 to December 2009, Dr. Behrens served in various roles at RS Investments, an investment management and research firm, including as a General Partner for selected venture funds. Prior to this, from 1983 to 1996, she served as a General Partner and Managing Director at Robertson Stephens & Co. Since March 2009, Dr. Behrens has served as a member of the board of directors of Sarepta Therapeutics, a medical research and drug development company, and as Chairwoman since April 2015, as well as chair of its audit committee and a member of its research and development committee. She was elected to the board of MiMedx Group, a wound care company, in June, 2019, at which time she was named Chairwoman and became a member of the compliance and ethics committee. Dr. Behrens served on the board of directors of Amylin Pharmaceuticals, a biopharmaceutical company, from June 2009 until its sale to Bristol-Myers Squibb in 2012. She previously served as a member of the President's Council of Advisors on Science and Technology (PCAST) from 2001 to early 2009 and as Chairwoman of its subcommittee on Personalized Medicine. She has also spent time as a public-market biotechnology securities analyst and a venture capitalist focusing on healthcare, technology and related investments. She also previously served on the Board on Science, Technology and Economic Policy for the National Research Council and as a Director, President and Chairwoman of the National Venture Capital Association. Dr. Behrens received a B.S. in Biological Sciences and a Ph.D. in Microbiology from the University of California, Davis.

We believe Dr. Behrens is qualified to serve on our board of directors because of her extensive experience in the life sciences field, her executive and board leadership experience and her medical expertise in biology and microbiology.

Julie Hambleton, M.D. has served as a member of our board of directors since August 2018. Since June 2018, Dr. Hambleton has served as Senior Vice President, Chief Medical Officer, Head of Development at IDEAYA Biosciences, an oncology medicine company. From September 2017 to May 2018 and from March 2016 to May 2016, Dr. Hambleton served as an independent strategic consultant for various life sciences companies. From May 2016 to September 2017, she served as Vice President, Head U.S. Medical at Bristol-Myers Squibb, a global biopharmaceutical company. From August 2015 to February 2016, Dr. Hambleton served as Executive Vice President, Chief Medical Officer at Five Prime Therapeutics, a biotechnology company, and as Senior Vice President, Chief Medical Officer from December 2012 to August 2015. From April 2010 to November 2012, Dr. Hambleton served as Vice President, Clinical Development at Clovis Oncology, and from 2003 to 2010, Dr. Hambleton held increasing roles of responsibility in BioOncology at Genentech. Dr. Hambleton completed her hematology-oncology training at the University of California, San Francisco, where she then served on the faculty from 1993 to 2003. Dr. Hambleton received a B.S. in Nursing from Duke University and an M.D. from Case Western Reserve University School of Medicine, and is board-certified in Hematology and Internal Medicine.

We believe Dr. Hambleton is qualified to serve on our board of directors because of her extensive career in the biotechnology industry, her executive and leadership experience and her medical expertise in hematology and internal medicine.

Michael Lee has served as a member of our board of directors since July 2019. Mr. Lee has served as Co-Founder and Portfolio Manager at Redmile Group, an investment advisory firm since 2007. Prior to Redmile Group, Mr. Lee worked as a biotechnology investor at Steeple Capital, an investment management firm, and as an analyst at Welch Capital Partners, an investment advisory firm, and Prudential Equity Group, a financial services company. Mr. Lee has served on the board of directors of Fate Therapeutics, a biopharmaceutical company, since July 2018. Mr. Lee holds a B.S. in Molecular and Cellular Biology from the University of Arizona.

We believe Mr. Lee is qualified to serve on our board of directors because of his background, knowledge of our industry and extensive investment and leadership experience.

Kelvin Neu, M.D. has served as a member of our board of directors since June 2019. Since April 2004, Dr. Neu has served as a Partner at Baker Bros. Advisors, an investment firm. Since March 2017, Dr. Neu has served on the board of directors of Aquinox Pharmaceuticals, a biopharmaceutical company, and is also on its nominating and corporate governance committee and science and technology committee. Dr. Neu previously served on the board of directors of Idera Pharmaceuticals, a biopharmaceutical company, from March 2014 to June 2019, and on the board of directors of XOMA Corporation, a biotechnology company, from July 2012 to May 2015. Dr. Neu earned a B.A. in Molecular Biology from Princeton University, where he was awarded the Khoury Prize for graduating first in his department of Molecular Biology, and an M.D. from the Harvard Medical School-MIT Health Sciences and Technology program, and an M.S. in Immunology from Stanford University as a Howard Hughes Medical Institute Fellow. Prior to attending Princeton, Dr. Neu served for two and a half years in the military of Singapore.

We believe Dr. Neu is qualified to serve on our board of directors because of his extensive investment and leadership experience, knowledge of our industry, and educational background in biology and biotechnology.

William Strohl, Ph.D. has served as a member of our board of directors since August 2018. In August 2016, Dr. Strohl founded BiStro Biotech Consulting, a biotechnology consulting company, of which he also serves as President. From February 2016 to August 2016, Dr. Strohl served as Vice President and Biologics Fellow at Janssen BioTherapeutics, the therapeutic biologics organization within the Janssen Research & Development division of Johnson & Johnson, a multinational medical devices and pharmaceutical company, and served as its Vice President and Head from October 2013 to February 2016. Prior to that, from April 2008 to October 2013, Dr. Strohl served as Head of Antibody Discovery at Janssen BioTherapeutics. Dr. Strohl has also held various roles at Merck, a pharmaceutical company, including leading Natural Products Biology and leading Biologics discovery efforts and was a Professor in the Department of Microbiology and the Program of Biochemistry at The Ohio State University. Dr. Strohl received a B.S. in Biology from Central Michigan University and a Ph.D. in Microbiology from Louisiana State University.

We believe Dr. Strohl is qualified to serve on our board of directors because of his extensive career in the biotechnology industry, his leadership experience and his educational background in biology, chemistry and microbiology.

Christina Teng Topsøe has served as a member of our board of directors since August 2018, and previously served as an observer on our board of directors beginning in 2013. Since March 2013, Ms. Topsøe has served on the board of directors of Haldor Topsøe, a Danish catalysis and chemical processing company, and has served on the board of directors of HTH, its holding company, since June 2015. Ms. Topsøe previously was a lawyer at Allen & Overy LLP and Simpson Thacher and Bartlett LLP. Ms. Topsøe pursued a B.A. in Chinese Studies from the University of Copenhagen, studied Chinese Language and Literature at Peking University, and received an LL.B. from the University of London and an M.B.A. from London Business School and Columbia Business School.

We believe Ms. Topsøe is qualified to serve on our board of directors because of her leadership experience and perspective as an entrepreneur and her affiliation with our lead investor.

Jakob Haldor Topsøe has served as a member of our board of directors since August 2018. Since June 2015, Mr. Topsøe has served as Chairman of the board of directors of HTH, and has served on the board of directors of Haldor Topsøe, its subsidiary, since October 2010 and as its Vice Chairman since August 2016. Since January 2009, Mr. Topsøe has served as Partner at AMBROX Capital, a Danish investment management firm, and as Associate Partner since September 2016. From 1996 to 2008, Mr. Topsøe was employed in various functions within Alfred Berg/ABN Amro Bank including Head of Equities, Denmark. Mr. Topsøe currently serves as a member of the board of directors of Motortramp, a Danish provider of marine transportation services, and Dampskibsselskabet Orients Fond, a Danish charitable foundation. Mr. Topsøe received a Graduate Diploma in Business Administration (Finance) from the Copenhagen Business School.

We believe Mr. Topsøe is qualified to serve on our board of directors because of his investment experience, leadership experience and background and his affiliation with our lead investor.

Family Relationships

Christina Teng Topsøe and Jakob Haldor Topsøe, each a member of our board of directors, are first cousins. There are no other family relationships among any of our directors or executive officers.

Board Composition

Our business and affairs are managed under the direction of our board of directors, which currently consists of members.

Immediately prior to the completion of this offering, our directors will be divided among three classes with staggered three-year terms as follows:

- Class I, whose members will be Julie Hambleton, William Strohl and Jakob Haldor Topsøe. The terms of the Class I directors will expire at our 2020 annual meeting of stockholders;
- Class II, whose members will be M. Kathleen Behrens, Michael Loberg and Christina Teng Topsøe. The terms of the Class II directors will expire at our 2021 annual meeting of stockholders; and
- Class III, whose members will be Michael Lee, Kelvin Neu and Fred Schwarzer. The terms of the Class III directors will expire at our 2022 annual meeting of stockholders.

At each annual meeting of stockholders, upon the expiration of the term of a class of directors, the successor to each such director in the class will be elected to serve from the time of election and qualification until the third annual meeting following his or her election and until his or her successor is duly elected and qualified, in accordance with our amended and restated certificate of incorporation. We expect that any additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one third of the directors.

The division of our board of directors into three classes with staggered three-year terms may delay or prevent a change of our management or a change in our control.

On June 28, 2019, we entered into nominating agreements (the Nominating Agreements) with each of (i) HTH, (ii) Baker Brothers Life Sciences L.P. and 667, L.P. (together, Baker Brothers) and (iii) Redmile Biopharma Investments II, L.P., RAF, L.P. and Redmile Strategic Master Fund, LP (together, Redmile) (each, an Investor) to provide certain rights with respect to their ability to designate members of our board of directors (the Investor Designees).

Pursuant to the Nominating Agreement entered into with HTH, during the period beginning at the completion of this offering until the earliest of: (i) the twelfth anniversary of the date of the completion of this offering; (ii) such time as HTH and its affiliates no longer beneficially own at least 1,134,919 shares of our capital stock; (iii) following the third year anniversary of the completion of this offering, (a) with respect to one of its two Investor Designees, such time as HTH holds less than 20% of our as-converted securities, and (b) with respect to both of its Investor Designees, such time as HTH holds less than 5% of our as-converted securities; or (iv) the consummation of a Deemed Liquidation (as defined in our amended and restated certificate of incorporation), we will have the obligation to support the nomination of, and to cause our board of directors to include in the slate of nominees recommended to our stockholders for election, two Investor Designees of HTH.

Pursuant to the Nominating Agreements entered into with each of Baker Brothers and Redmile, during the period beginning at the completion of this offering until the earliest of: (i) the twelfth anniversary of the date of the completion of this offering; (ii) such time as (a) in the case of Baker Brothers, the Investor and its affiliates no longer beneficially own at least 1,134,919 shares of our capital stock, or (b) in the case of Redmile, the Investor and its affiliates no longer beneficially own at least 945,765 shares of our capital stock; (iii) following the third anniversary of the completion of this offering, such time as each of Baker Brothers or Redmile and their respective affiliates, respectively, holds less than 5% of our as-converted securities; and (iv) the consummation of a Deemed Liquidation, we will have the obligation to support the nomination of, and to cause our board of directors to include in the slate of nominees recommended to our stockholders for election, one Investor Designee of each of Baker Brothers and Redmile.

The nomination of each Investor Designee shall be subject to the reasonable and good faith determination of a majority of our disinterested directors, after consultation with our outside legal counsel, that such Investor Designee is qualified to serve as a member of our board of directors under applicable laws, the rules of the Nasdaq Stock Market LLC (Nasdaq), our amended and restated bylaws and any of our company policies. If an Investor Designee resigns from his or her seat on our board of directors or is removed or does not become a director for any reason, the vacancy will be filled by the election or appointment of another Investor Designee of the applicable Investor as soon as reasonably practicable, subject to compliance with applicable laws, rules and regulations.

Director Independence

Upon the completion of this offering, we anticipate that our common stock will be listed on the Nasdaq Global Select Market. Under the rules of Nasdaq, independent directors must comprise a majority of a listed company's board of directors within one year of the completion of this offering. In addition, the rules of Nasdaq require that, subject to specified exceptions, each member of a listed company's audit, compensation and corporate governance and nominating committees be independent. Audit committee members and compensation committee members must also satisfy the independence criteria set forth in Rule 10A-3 and Rule 10C-1, respectively, under the Exchange Act. Under the rules of Nasdaq, a director will only qualify as an "independent director" if, in the opinion of that company's board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director.

To be considered to be independent for purposes of Rule 10A-3 and under the rules of Nasdaq, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors or any other board committee: (1) accept, directly or indirectly, any consulting, advisory or other compensatory fee from the listed company or any of its subsidiaries or (2) be an affiliated person of the listed company or any of its subsidiaries.

To be considered independent for purposes of Rule 10C-1 and under the rules of Nasdaq, the board of directors must affirmatively determine that each member of the compensation committee is independent, including a consideration of all factors specifically relevant to determining whether the director has a relationship to the company which is material to that director's ability to be independent from management in connection with the duties of a compensation committee member, including: (1) the source of compensation of such director, including any consulting, advisory or other compensatory fee paid by the company to such director and (2) whether such director is affiliated with the company, a subsidiary of the company or an affiliate of a subsidiary of the company.

Our board of directors has undertaken a review of its composition, the composition of its committees and the independence of each director and considered whether any director has a material relationship with us that could compromise his or her ability to exercise independent judgment in carrying out his or her responsibilities. Based upon information requested from and provided by each director concerning his background, employment and affiliations, including family relationships, our board of directors has determined that Michael Loberg, M. Kathleen Behrens, Julie Hambleton, Michael Lee, Kelvin Neu, William Strohl, Christina Teng Topsøe and Jakob Haldor Topsøe, representing eight of our nine directors, do not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director and that each of these directors is "independent" as that term is defined under the rules of Nasdaq.

In making these determinations, our board of directors considered the current and prior relationships that each non-employee director has with our company and all other facts and circumstances our board of directors deemed relevant in determining their independence, including the beneficial ownership of our capital stock by each non-employee director, and the transactions involving them described in the section titled "Certain Relationships and Related Party and Other Transactions."

Board Leadership Structure

Our board of directors is currently chaired by Michael Loberg. As a general policy, our board of directors believes that separation of the positions of Chair of our board of directors and Chief Executive Officer reinforces the independence of our board of directors from management, creates an environment that encourages objective oversight of management's performance and enhances the effectiveness of our board of directors as a whole. As such, Fred

Schwarzer serves as our Chief Executive Officer and President while Michael Loberg serves as the Chair of our board of directors but is not an officer. We currently expect the positions of Chair of our board of directors and Chief Executive Officer to continue to be held by two individuals in the future.

Role of the Board in Risk Oversight

Our board of directors has an active role, as a whole and also at the committee level, in overseeing the management of our risks. Our board of directors is responsible for general oversight of risks and regular review of information regarding our risks, including credit risks, liquidity risks and operational risks. The compensation committee is responsible for overseeing the management of risks relating to our executive compensation plans and arrangements. The audit committee is responsible for overseeing the management of risks relating to accounting matters and financial reporting. The corporate governance and nominating committee is responsible for overseeing the management of risks associated with the independence of our board of directors and potential conflicts of interest. Although each committee is responsible for evaluating certain risks and overseeing the management of such risks, our entire board of directors is regularly informed through discussions from committee members about such risks. Our board of directors believes its administration of its risk oversight function has not negatively affected the board of directors' leadership structure.

Committees of Our Board of Directors

Our board of directors has established an audit committee, a compensation committee, a corporate governance and nominating committee and a research and clinical development committee. The composition and responsibilities of each of the committees of our board of directors are described below. Members serve on these committees until their resignation or until otherwise determined by our board of directors. Our board of directors may establish other committees as it deems necessary or appropriate from time to time.

Audit Committee

Upon the effectiveness of the registration statement of which this prospectus forms a part, the members of our audit committee will be M. Kathleen Behrens, Julie Hambleton and Michael Loberg. The chair of our audit committee will be M. Kathleen Behrens. Our board of directors has determined that each of the members of our audit committee satisfies the independence requirements under the listing standards of Nasdaq and Rule 10A-3 of the Exchange Act. Our board of directors has determined that M. Kathleen Behrens is an "audit committee financial expert" within the meaning of SEC regulations. Each member of our audit committee can read and understand fundamental financial statements in accordance with applicable requirements. In arriving at these determinations, our board of directors examined each audit committee member's scope of experience and the nature of their employment in the corporate finance sector.

Our audit committee oversees our corporate accounting and financial reporting process and assists our board of directors in monitoring our financial systems. Our audit committee will also:

- select and hire the independent registered public accounting firm to audit our financial statements;
- help to ensure the independence and performance of the independent registered public accounting firm;
- approve audit and non-audit services and fees;
- review financial statements and discuss with management and the independent registered public accounting firm our annual audited and quarterly financial statements, the results of the independent audit and the quarterly reviews and the reports and certifications regarding internal controls over financial reporting and disclosure controls;
- prepare the audit committee report that the SEC requires to be included in our annual proxy statement;
- review reports and communications from the independent registered public accounting firm;
- review the adequacy and effectiveness of our internal controls and disclosure controls and procedure;
- review our policies on risk assessment and risk management;
- review and monitor conflicts of interest situations, and approve or prohibit any involvement in matters that may involve a conflict of interest or taking of a corporate opportunity;
- review related party transactions; and

- establish and oversee procedures for the receipt, retention, and treatment of accounting related complaints and the confidential submission by our employees of concerns regarding questionable accounting or auditing matters.

Our audit committee will operate under a written charter, to be effective immediately upon the effectiveness of the registration statement of which this prospectus forms a part, that will satisfy the applicable rules of the SEC and the listing standards of Nasdaq.

Compensation Committee

Upon the effectiveness of the registration statement of which this prospectus forms a part, the members of our compensation committee will be Christina Teng Topsøe, M. Kathleen Behrens and Michael Loberg. The chair of our compensation committee will be Christina Teng Topsøe. Our board of directors has determined that each of the members of our compensation committee is independent under the listing standards of Nasdaq and a "non-employee director" as defined in Rule 16b-3 under the Exchange Act.

Our compensation committee oversees our compensation policies, plans, and benefits programs. The compensation committee will also:

- oversee our overall compensation philosophy and compensation policies, plans, and benefit programs;
- review and approve or recommend to the board of directors for approval compensation for our executive officers and directors;
- prepare the compensation committee report that the SEC will require to be included in our annual proxy statement; and
- administer our equity compensation plans.

Our compensation committee will operate under a written charter, to be effective immediately upon the effectiveness of the registration statement of which this prospectus forms a part, that will satisfy the applicable rules of the SEC and the listing standards of Nasdaq.

Corporate Governance and Nominating Committee

Upon the effectiveness of the registration statement of which this prospectus forms a part, the members of our corporate governance and nominating committee will be Christina Teng Topsøe, M. Kathleen Behrens and Michael Loberg. The chair of our corporate governance and nominating committee will be Christina Teng Topsøe. Our board of directors has determined that each member of our corporate governance and nominating committee is independent under the applicable listing standards of Nasdaq.

Our corporate governance and nominating committee oversees and assists our board of directors in reviewing and recommending nominees for election as directors. Specifically, the corporate governance and nominating committee will:

- identify, evaluate, and make recommendations to our board of directors regarding nominees for election to our board of directors and its committees;
- consider and make recommendations to our board of directors regarding the composition of our board of directors and its committees;
- review developments in corporate governance practices;
- evaluate the adequacy of our corporate governance practices and reporting; and
- evaluate the performance of our board of directors and of individual directors.

Our corporate governance and nominating committee will operate under a written charter, to be effective immediately upon the effectiveness of the registration statement of which this prospectus forms a part, that will satisfy the listing standards of Nasdaq.

Research and Clinical Development Committee

The members of our research and clinical development committee are Julie Hambleton, William Strohl, Michael Loberg and Kelvin Neu. The co-chairs of our research and clinical development committee are Julie Hambleton and William Strohl.

Specific responsibilities of our research and clinical development committee include:

- advising our board of directors concerning our research and scientific strategies, plans and efforts;
- evaluating scientific opportunities under consideration by management;
- reviewing external scientific research, discoveries and commercial developments, as appropriate; and
- evaluating our overall intellectual property strategies.

Our research and clinical development committee operates under a written charter.

Director Compensation

Other than as described below, we did not pay any cash compensation to our directors for service on our board of directors during 2018. All compensation paid to Mr. Schwarzer is for services rendered as our Chief Executive Officer and President.

In October 2018, the compensation, nomination and governance committee of our board of directors adopted a cash compensation policy for members of our board of directors who are not substantial investors in, or employees or founders of, our company.

This policy will be replaced with the policy described below under "—Outside Director Compensation Policy," subject to stockholder approval.

The following table presents all payments or equity awards made to our non-employee directors during 2018.

NAME	FEES EARNED OR PAID IN CASH ($)	OPTION AWARDS ($) (1)(2)	ALL OTHER COMPENSATION ($)	TOTAL ($)
M. Kathleen Behrens, Ph.D. (3)	—	—	—	—
Julie Hambleton, M.D. (4)(5)	15,000	14,483	—	29,483
Dana Leach, Ph.D. (6)	17,500	—	—	17,500
Michael Lee (7)	—	—	—	—
Michael Loberg, Ph.D. (8)	30,000	—	—	30,000
Kelvin Neu, M.D. (7)	—	—	—	—
William Strohl, Ph.D. (4)(9)	15,000	14,483	—	29,483
Nelson Teng, M.D., Ph.D. (6)	—	—	—	—
Christina Teng Topsøe (4)	—	—	—	—
Henrik Topsøe (10)	—	—	—	—
Jakob Haldor Topsøe (4)	—	—	—	—

(1) Represents the aggregate grant date fair value of option awards granted to the director in the applicable fiscal year, computed in accordance with FASB ASC Topic 718. See Note 6 to our financial statements included elsewhere in this prospectus for a discussion of the assumptions made by us in determining the grant date fair value of our equity awards.

(2) As of December 31, 2018, our non-employee directors held outstanding options to purchase the number of shares of common stock as follows: Dr. Hambleton (15,132 shares); Dr. Leach (30,264 shares); Dr. Strohl (15,132 shares); and Dr. Teng (121,058 shares).

(3) Dr. Behrens did not serve as a member of our board of directors in 2018 and was elected to serve as a member of our board of directors in January 2019. We granted an option to purchase 15,132 shares of our common stock to Dr. Behrens in connection with her commencement of service on our board of directors.

(4) Drs. Hambleton and Strohl, Ms. Topsøe and Mr. Jakob Haldor Topsøe were each elected to serve as a member of our board of directors in August 2018.

(5) As of December 31, 2018, Dr. Hambleton held an option to purchase 15,132 shares of our common stock. 25% of the shares subject to the option vested on September 1, 2019, and the remaining 75% will vest in equal monthly installments over the three years following such first anniversary, subject to Dr. Hambleton's continuous service through each vesting date.

(6) Drs. Leach and Teng each resigned from our board of directors in June 2019.

(7) Mr. Lee and Dr. Neu did not serve as members of our board of directors in 2018 and were elected to serve as members of our board of directors in July 2019 and June 2019, respectively.

(8) As of December 31, 2018, Dr. Loberg held 30,264 shares of common stock that are subject to a repurchase right that lapsed as to 7,566 of the shares on September 8, 2016 and that lapses as to the remaining shares at the rate of 1/48th of the total shares per month over the following three years. As of that date, 5,674 of these shares remained subject to repurchase by us.

(9) As of December 31, 2018, Dr. Strohl held an option to purchase 15,132 shares of our common stock. The option will vest 25% on September 1, 2019, and the remaining 75% will vest in equal monthly installments over the three years following such first anniversary, subject to Dr. Strohl's continuous service through each vesting date.

(10) Mr. Henrik Topsøe resigned from our board of directors in August 2018.

In August 2019 and in connection with this offering, our board of directors and stockholders approved the grant of options to purchase 12,100 shares of our common stock to each of our directors, other than to Mr. Schwarzer, with an exercise price equal to the initial public offering price of our common stock, which will be effective as of the date of the registration statement of which this prospectus forms a part. Each of these options vests as to 1/3rd of the shares subject to the option on the one year anniversary of the grant date and as to 1/36th of the shares subject to the option each month following the grant date, in each case, subject to continued service through each applicable vesting date.

Outside Director Compensation Policy

Our board of directors has adopted, and our stockholders approved, a new compensation policy for our non-employee directors that will be effective as of the date of the effectiveness of the registration statement of which this prospectus forms a part. This policy was developed with input from our compensation committee's independent compensation consultant, Radford, regarding practices and compensation levels at comparable companies. It is designed to attract, retain and reward non-employee directors.

Under the director compensation policy, each non-employee director will receive the cash and equity compensation for his or her services as a member of our board of directors, as described below. We also will continue to reimburse our non-employee directors for reasonable, customary and documented travel expenses to meetings of our board of directors or its committees.

The director compensation policy includes a maximum annual limit of $750,000 or, in the first year of a non-employee director's service on our board of directors, $1,000,000, of cash compensation and equity awards that may be paid, issued or granted to a non-employee director in any fiscal year. For purposes of these limitations, the value of an equity award is based on its grant date fair value (determined in accordance with GAAP). Any cash compensation paid or equity awards granted to a person for his or her services as an employee, or for his or her services as a consultant (other than as a non-employee director), will not count for purposes of the limitation. The maximum limit does not reflect the intended size of any potential compensation or equity awards to our non-employee directors.

Cash Compensation

Following the completion of this offering, each non-employee director will be paid an annual cash retainer of $20,000. In addition, each non-employee director will be entitled to receive the following cash compensation for his or her services under the policy:

- $20,000 per year for service as chair of the board of directors;
- $10,000 per year for service as chair of the audit committee;
- $5,000 per year for service as a member of the audit committee;
- $10,000 per year for service as chair of the compensation committee;
- $5,000 per year for service as a member of the compensation committee;
- $10,000 per year for service as chair of the corporate governance and nominating committee;
- $5,000 per year for service as a member of the corporate governance and nominating committee;
- $10,000 per year for service as chair of the research and clinical development committee; and
- $5,000 per year for service as a member of the research and clinical development committee.

Each non-employee director who serves as a committee chair will receive only the additional annual cash fee as the chair of the committee, and not the additional annual fee as a member of the committee. All cash payments to non-employee directors are paid quarterly in arrears on a prorated basis.

Equity Compensation

Initial Options

Each person who first becomes a non-employee director after the effective date of the director compensation policy will be granted an initial award of a nonstatutory stock option (the Initial Option) covering 12,100 shares of our common stock. The Initial Option will be scheduled to vest as to 1/3rd of the shares subject to the option on the first anniversary of the director's commencement of service to us and 1/36th of the shares will vest each month thereafter, subject to continuing to provide services to us through each applicable vesting date. If the person was a member of our board of directors and also an employee, becoming a non-employee director due to termination of employment will not entitle the person to an Initial Option.

Annual Options

Each non-employee director automatically will receive, at the same time we make our annual equity awards to our executive officers, an annual award of a nonstatutory stock option (an Annual Option) covering 6,050 shares of our common stock. Each Annual Option will vest as to 1/12th of the shares subject to the option for each month of service after the date of the first annual meeting of our stockholders following the date of grant, and will vest in full on the earlier of (i) the twelve-month anniversary of the date of the first annual meeting of our stockholders following the date of grant or (ii) the date of the second regularly scheduled annual meeting of our stockholders that next follows the date of grant of the Annual Option, subject to continuing to provide service to us through the applicable vesting date.

The term of each option granted under the policy will be 10 years, subject to earlier termination as provided in the 2018 Plan. Each option granted under the policy will have an exercise price per share equal to 100% of the fair market value per share on the date of grant.

Change in Control

In the event of a "change in control" (as defined in the 2018 Plan), each non-employee director will fully vest in his or her outstanding company equity awards provided that the non-employee director continues to be a non-employee director through the date of such change in control.

Code of Business Conduct and Ethics

Our board of directors has adopted a written code of business conduct and ethics which will be effective immediately upon the effectiveness of the registration statement of which this prospectus forms a part. Our code of business conduct and ethics will apply to all our directors, officers and employees, including our principal executive officer, principal financial officer and principal accounting officer or controller, or persons performing similar functions. The full text of our code of business conduct and ethics will be posted on our website at www.igmbio.com upon the completion of this offering. We intend to disclose on our website identified above or in a current report on Form 8-K any future amendments of our code of business conduct and ethics or waivers that exempt any principal executive officer, principal financial officer, principal accounting officer or controller, persons performing similar functions or our directors from provisions in the code of business conduct and ethics as and to the extent required by applicable rules and exchange requirements. Information contained on, or that can be accessed through, our website is not incorporated by reference in this prospectus, and you should not consider information on our website to be part of this prospectus.

Compensation Committee Interlocks and Insider Participation

None of the members of our compensation committee are currently, or has been at any time, one of our officers or employees. None of our executive officers currently serve, or has served during the past fiscal year, as a member of the board of directors or the compensation committee (or other board committee performing equivalent functions or, in the absence of any such committee, the entire board of directors) of any entity that has one or more executive officers serving as a member of our board of directors or our compensation committee. Ms. Topsøe may be deemed to have an interest in certain transactions requiring disclosure under Item 404 of Regulation S-K under the Securities Act. These transactions are disclosed in "Certain Relationships and Related Party and Other Transactions," and such disclosure is incorporated by reference herein.

EXECUTIVE COMPENSATION

Our named executive officers, who consist of our principal executive officer and the next two most highly compensated executive officers in 2018, are:

- Fred Schwarzer, our Chief Executive Officer and President;
- Daniel Chen, M.D., Ph.D., our Chief Medical Officer; and
- Bruce Keyt, Ph.D., our Chief Scientific Officer.

Summary Compensation Table

The following table presents all of the compensation paid or awarded to or earned by our named executive officers, for the fiscal year ended December 31, 2018:

NAME AND PRINCIPAL POSITION	YEAR	SALARY ($)	BONUS ($)	STOCK AWARDS ($)	OPTION AWARDS ($) [1]	NON-EQUITY INCENTIVE PLAN COMPENSATION ($)	ALL OTHER COMPENSATION ($)	TOTAL ($)
Fred Schwarzer *Chief Executive Officer and President*	2018	376,000	—	—	143,214	—	—	519,214
Daniel Chen, M.D., Ph.D. *Chief Medical Officer* [2]	2018	208,333	—	161,700 [3]	345,605	—	—	715,638
Bruce Keyt, Ph.D. *Chief Scientific Officer*	2018	352,333	—	—	—	—	—	352,333

(1) Represents the aggregate grant date fair value of option awards granted to the officer in the applicable fiscal year, computed in accordance with FASB ASC Topic 718. See Note 6 to our financial statements included elsewhere in this prospectus for a discussion of the assumptions made by us in determining the grant date fair value of our equity awards. Our named executive officers will only realize compensation to the extent the trading price of our common stock is greater than the exercise price of such stock options.

(2) Dr. Chen became our Chief Medical Officer in August 2018. The salary reported reflects the pro rata portion of Dr. Chen's annual salary of $500,000 earned during 2018.

(3) Represents the aggregate grant date fair value of restricted stock awards granted to the officer in the applicable fiscal year, computed in accordance with FASB ASC Topic 718. See Note 6 to our financial statements included elsewhere in this prospectus for a discussion of the assumptions made by us in determining the grant date fair value of our equity awards. Our named executive officers will only realize compensation to the extent the trading price of our common stock is greater than the exercise price of such stock options.

Outstanding Equity Awards at Fiscal Year-End

The following table provides information regarding the outstanding equity awards held by our named executive officers as of December 31, 2018. See "—Equity, Benefit and Retirement Plans" below for more information.

		OPTION AWARDS				STOCK AWARDS	
NAME	GRANT DATE (1)	NUMBER OF SECURITIES UNDERLYING EXERCISABLE OPTIONS	NUMBER OF SECURITIES UNDERLYING UNEXERCISABLE OPTIONS	OPTION EXERCISE PRICE ($) (2)	OPTION EXPIRATION DATE	NUMBER OF SHARES OF STOCK THAT HAVE NOT VESTED	MARKET VALUE OF SHARES OR UNITS OF STOCK THAT HAVE NOT VESTED ($)
Fred Schwarzer	3/10/2015	85,118 (3)	5,675	0.93	3/10/2025	—	—
	12/21/2018	89,374 (4)	69,514	1.39	12/21/2018	—	—
Daniel Chen, M.D., Ph.D.	12/30/2018	—	361,090 (5)	1.39	12/30/2028	—	
	12/30/2018	—	—	—	—	116,518 (6)	161,700
Bruce Keyt, Ph.D.	1/12/2013	143,756 (7)	—	0.93	1/12/2023	—	—
	3/10/2015	28,372 (3)	1,892	0.93	3/10/2025	—	—
	1/16/2017	47,288 (3)	43,505	1.00	1/16/2027	—	—

(1) Each of the outstanding options to purchase shares of our common stock was granted pursuant to either our 2010 Plan or 2018 Plan.
(2) This column represents the fair market value of a share of our common stock on the date of grant, as determined by our board of directors or its authorized committee.
(3) 1/48th of the shares subject to the option vest each month following the vesting commencement date, subject to the individual's continuous service through each vesting date. The award also is subject to vesting acceleration under certain circumstances as will be more fully described below under "—Potential Payments upon Termination or Change in Control—Change in Control and Severance Policy."
(4) 1/2 of the shares subject to the option vest on the vesting commencement date and 1/48th of the shares vest monthly thereafter, subject to Mr. Schwarzer's continuous service through each vesting date.
(5) 1/4th of the shares subject to the option vest on the first anniversary of the vesting commencement date and 1/48th of the shares vest monthly thereafter, subject to Dr. Chen's continuous service through each vesting date. The award also is subject to vesting acceleration under certain circumstances as will be more fully described in "—Potential Payments upon Termination or Change in Control—Daniel Chen Arrangements."
(6) The award is subject to forfeiture under certain circumstances through August 2020 as more fully described in his Restricted Stock Grant Agreement, dated December 30, 2018.
(7) The shares subject to the option were fully vested as of December 31, 2018.

Executive Letter Agreements

Fred Schwarzer

In August 2019, we entered into a confirmatory employment letter with Fred Schwarzer, our Chief Executive Officer and President. The employment letter has no specific term and provides that Mr. Schwarzer is an at-will employee. The employment letter supersedes all existing agreements and understandings that Mr. Schwarzer may have concerning his employment relationship with us. The employment letter also provides Mr. Schwarzer with severance and change in control benefits pursuant to our Change in Control and Severance Policy described below. Mr. Schwarzer's current annual base salary is $428,000 and he is currently eligible for an annual target cash incentive payment equal to 40% of his annual base salary.

Daniel Chen, M.D., Ph.D.

In July 2018, we entered into an employment agreement with Daniel Chen, our Chief Medical Officer (the Chen Employment Agreement). The Chen Employment Agreement has no specific term and provides that Dr. Chen is an at-will employee. It also provides for a $500,000 annual base salary, no annual target bonus and initial stock and option grants. The Chen Employment Agreement also provides Dr. Chen with certain severance and change in control benefits, as described below under "—Potential Payments upon Termination or Change in Control—Daniel Chen Arrangements."

Bruce Keyt, Ph.D.

In August 2019, we entered into a confirmatory employment letter with Bruce Keyt, our Chief Scientific Officer. The employment letter has no specific term and provides that Dr. Keyt is an at-will employee. The employment letter supersedes all existing agreements and understandings that Dr. Keyt may have concerning his employment relationship with us. The employment letter also provides Dr. Keyt with severance and change in control benefits pursuant to our Change in Control and Severance Policy described below. Dr. Keyt's current annual base salary is $357,000 and he is currently eligible for an annual target cash incentive payment equal to 35% of his annual base salary.

Potential Payments upon Termination or Change in Control

Prior to the completion of this offering, we did not have a formal plan with respect to severance benefits payable to our named executive officers and other key employees. From time to time, we granted equity awards to, or entered into employment agreements with, certain key employees, including our named executive officers, that provide for accelerated vesting of equity awards in the event such key employee's employment was involuntarily terminated under certain circumstances.

Change in Control and Severance Policy

Our board of directors has approved the following change in control and severance benefits for our current executive officers (other than Dr. Chen) and other key employees (collectively, participants) pursuant to a Change in Control and Severance Policy (the Severance Policy). Unless sooner terminated by our board of directors or compensation committee or by the consent of an impacted participant, the Severance Policy has a term of three years, subject to potential extension upon the occurrence of certain events set forth in the Severance Policy.

The Severance Policy provides that if we terminate a participant's employment outside of the period beginning three months prior to and ending 12 months after a "change in control" (as defined in the Severance Policy) (such period, the "change in control period") other than for "cause" (as generally defined in the Severance Policy), death or disability (or, in the case of Mr. Schwarzer, if Mr. Schwarzer terminates his employment due to a "constructive termination" (as defined in the Severance Policy)), the participant will receive the following:

- a lump sum payment equal to nine months' base salary (12 months for Mr. Schwarzer); and
- a lump sum payment equal to nine months of COBRA premiums (12 months for Mr. Schwarzer).

The Severance Policy provides that if a participant's employment is terminated during the change in control period either by us other than for cause, death or disability or by the participant due to a "constructive termination", the participant will receive the following:

- a lump sum payment equal to 12 months' base salary (18 months for Mr. Schwarzer);
- 100% acceleration of unvested time-based equity awards;
- a lump sum payment equal to the participant's pro-rata target annual bonus for the year of termination plus 100% of the participant's target annual bonus for the year of termination (150% for Mr. Schwarzer); and
- a lump sum payment equal to 12 months of COBRA premiums (18 months for Mr. Schwarzer).

The Severance Policy also provides that if in connection with a change in control, a participant's then-unvested time-based equity awards are not assumed or replaced or substituted with an equivalent award by the acquiror or successor corporation, then 100% of such equity awards will immediately vest and become exercisable (if applicable).

The Severance Policy provides that if we discover after a participant's receipt of payments or benefits under the Severance Policy that grounds for the termination of the participant's employment for cause existed, then the participant will not receive any further payments or benefits under the Severance Policy and, to the extent permitted under applicable laws, will be required to repay to us any payments or benefits he or she received under the Severance Policy (or any financial gain derived from such payments or benefits).

In addition, the Severance Policy provides that if any payments or benefits received by a participant under the Severance Policy or otherwise would constitute "parachute payments" within the meaning of Section 280G of the Code and be subject to excise taxes imposed by Section 4999 of the Code, such amount will either be delivered in

full or reduced so as not to be subject to excise taxation, whichever amount is higher. The Severance Policy does not require us to provide any tax gross-ups.

To receive the severance described above, the participant must sign and not revoke our standard separation agreement and release of claims within the timeframe that is set forth in the Severance Policy. Except for provisions providing for accelerated vesting of a participant's performance-based equity awards upon a termination either by us other than for cause, death or disability or by the participant due to a constructive termination, the Severance Policy supersedes any provisions in a participant's offer letter or equity award agreement that provide for accelerated vesting upon certain terminations of employment.

Daniel Chen Arrangements

Dr. Chen will not be a participant in the Severance Policy. Pursuant to the Chen Employment Agreement, as described under "—Employment Arrangements" above, if Dr. Chen's employment is terminated by us without "cause" (as defined in the Chen Employment Agreement) or if he terminates his employment for "good reason" (as defined in the Chen Employment Agreement), he will be entitled to severance pay equal to a specified number of months of his base salary, plus an additional $2,000 for each month of such severance period. To receive the severance described above, Dr. Chen must sign and not revoke our standard separation agreement and release of claims within the timeframe that is set forth in the Chen Employment Agreement. In addition, if Dr. Chen's employment is terminated by us without cause or if he terminates his employment for good reason, the vesting of the stock option provided for in the Chen Employment Agreement (the Chen Option) will accelerate by an additional 12 months. In the event of a "change in control" (as defined in the Chen Employment Agreement), the vesting of the Chen Option will fully accelerate.

Equity, Benefit and Retirement Plans

2018 Omnibus Incentive Plan (as Amended and Restated)

Our board of directors has adopted, and our stockholders approved, an amendment and restatement to our 2018 Omnibus Incentive Plan (2018 Plan). The amendment and restatement to our 2018 Plan will be effective on the business day immediately prior to the effective date of our registration statement related to this offering. Our 2018 Plan, as amended and restated, provides for the grant of incentive stock options, within the meaning of Section 422 of the Code to our employees, and for the grant of nonstatutory stock options, restricted stock, restricted stock units (RSUs), stock appreciation rights, performance units, and performance shares to our employees, directors, and consultants.

Authorized shares. A total of 4,384,000 shares of our common stock will be reserved for issuance pursuant to our 2018 Plan. The number of shares of our common stock available for issuance under our 2018 Plan will also include an annual increase on the first day of each fiscal year beginning with the 2020 fiscal year, equal to the least of:

- 8,768,000 shares of our common stock;
- Four percent (4%) of the outstanding shares of our capital stock as of the last day of the immediately preceding fiscal year; or
- such other amount as our board of directors may determine.

If an award expires or becomes unexercisable without having been exercised in full, is surrendered pursuant to an exchange program, or, with respect to restricted stock, restricted stock units, performance units, or performance shares, is forfeited to or repurchased due to failure to vest, the unpurchased shares (or for awards other than stock options or stock appreciation rights, the forfeited or repurchased shares) will become available for future grant or sale under the 2018 Plan. With respect to stock appreciation rights, only the net shares actually issued will cease to be available under the 2018 Plan and all remaining shares under stock appreciation rights will remain available for future grant or sale under the 2018 Plan. Shares that have actually been issued under the amended and restated 2018 Plan under any award will not be returned to the 2018 Plan; provided, however, that if shares issued pursuant to awards of restricted stock, restricted stock units, performance shares, or performance units are repurchased or forfeited, such shares will become available for future grant under the 2018 Plan. Shares used to pay the exercise price of an award or satisfy the tax withholding obligations related to an award will become available for future grant or sale under the 2018 Plan. To the extent an award is paid out in cash rather than shares, such cash payment will not result in a reduction in the number of shares available for issuance under the 2018 Plan.

Plan administration. Our board of directors or one or more committees appointed by our board of directors will administer our 2018 Plan. Our compensation committee is expected to administer our 2018 Plan. In addition, if we determine it is desirable to qualify transactions under our 2018 Plan as exempt under Rule 16b-3 of the Exchange Act, such transactions will be structured to satisfy the requirements for exemption under Rule 16b-3. Subject to the provisions of our 2018 Plan, the administrator has the power to administer our 2018 Plan and make all determinations deemed necessary or advisable for administering the 2018 Plan, including but not limited to, the power to determine the fair market value of our common stock, select the service providers to whom awards may be granted, determine the number of shares covered by each award, approve forms of award agreements for use under the 2018 Plan, determine the terms and conditions of awards (including, but not limited to, the exercise price, the times or times at which the awards may be exercised, any vesting acceleration or waiver or forfeiture restrictions, and any restriction or limitation regarding any award or the shares relating thereto), construe and interpret the terms of our 2018 Plan and awards granted under it, to prescribe, amend, and rescind rules relating to our 2018 Plan, including creating sub-plans, to permit participants to satisfy tax withholding obligations as set forth in the 2018 Plan, to modify or amend each award, including but not limited to the discretionary authority to extend the post-termination exercisability period of awards (provided that no option or stock appreciation right will be extended past its original maximum term), and to allow a participant to defer the receipt of payment of cash or the delivery of shares that would otherwise be due to such participant under an award. The administrator also has the authority to allow participants the opportunity to transfer outstanding awards to a financial institution or other person or entity selected by the administrator and to institute an exchange program by which outstanding awards may be surrendered or cancelled in exchange for awards of the same type which may have a higher or lower exercise price and/or different terms, awards of a different type and/or cash, or by which the exercise price of an outstanding award is increased or reduced. The administrator's decisions, interpretations, and other actions are final and binding on all participants to the full extent permitted by law.

Stock options. Stock options may be granted under our 2018 Plan. The exercise price of options granted under our 2018 Plan must at least be equal to the fair market value of our common stock on the date of grant. The term of an option may not exceed ten years. With respect to any participant who owns more than 10% of the voting power of all classes of our outstanding stock, the term of an incentive stock option granted to such participant must not exceed five years and the exercise price must equal at least 110% of the fair market value on the grant date. The administrator will determine the methods of payment of the exercise price of an option, which may include cash, shares, or other property acceptable to the administrator, as well as other types of consideration permitted by applicable law. After the termination of service of an employee, director, or consultant, he or she may exercise his or her option for the period of time stated in his or her option agreement. In the absence of a specified time in an award agreement, if termination is due to death or disability, the option will remain exercisable for 12 months. In all other cases, in the absence of a specified time in an award, the option will remain exercisable for three months. However, in no event may an option be exercised later than the expiration of its term.

Stock appreciation rights. Stock appreciation rights may be granted under our 2018 Plan. Stock appreciation rights allow the recipient to receive the appreciation in the fair market value of our common stock between the exercise date and the date of grant. Stock appreciation rights may not have a term exceeding ten years. After the termination of service of an employee, director, or consultant, he or she may exercise his or her stock appreciation right for the period of time stated in his or her stock appreciation rights agreement. In the absence of a specified time in an award agreement, if termination is due to death or disability, the stock appreciation rights will remain exercisable for 12 months. In all other cases, in the absence of a specified time in an award agreement, the stock appreciation rights will remain exercisable for three months following the termination of service. However, in no event may a stock appreciation right be exercised later than the expiration of its term. Subject to the provisions of our 2018 Plan, the administrator determines the other terms of stock appreciation rights, including when such rights become exercisable and whether to pay any increased appreciation in cash or with shares of our common stock, or a combination thereof, except that the per share exercise price for the shares to be issued pursuant to the exercise of a stock appreciation right will be no less than 100% of the fair market value per share on the date of grant.

Restricted stock. Restricted stock may be granted under our 2018 Plan. Restricted stock awards are grants of shares of our common stock that vest in accordance with terms and conditions established by the administrator. The administrator will determine the number of shares of restricted stock granted to any employee, director, or consultant

and, subject to the provisions of our 2018 Plan, will determine the terms and conditions of such awards. The administrator may impose whatever conditions to vesting it determines to be appropriate (for example, the administrator may set restrictions based on the achievement of specific performance goals or continued service to us); provided, however, that the administrator, in its sole discretion, may accelerate the time at which any restrictions will lapse or be removed. Recipients of restricted stock awards generally will have voting and dividend rights with respect to such shares upon grant without regard to vesting, unless the administrator provides otherwise. Shares of restricted stock that do not vest are subject to our right of repurchase or forfeiture.

RSUs. RSUs may be granted under our 2018 Plan. Each RSU represents an amount equal to the fair market value of one share of our common stock. Subject to the provisions of our 2018 Plan, the administrator determines the terms and conditions of RSUs, including the vesting criteria and the form and timing of payment. The administrator may set vesting criteria based upon the achievement of company-wide, divisional, business unit, or individual goals (including, but not limited to, continued employment or service), applicable federal or state securities laws, or any other basis determined by the administrator in its discretion. The administrator, in its sole discretion, may pay earned restricted stock units in the form of cash, in shares, or in some combination of both. Notwithstanding the foregoing, the administrator, in its sole discretion, may accelerate the time at which any restrictions will lapse or be removed.

Performance units and performance shares. Performance units and performance shares may be granted under our 2018 Plan. Performance units and performance shares are awards that will result in a payment to a participant only if performance goals established by the administrator are achieved or the awards otherwise vest. The administrator will establish performance objectives or other vesting criteria in its discretion, which, depending on the extent to which they are met, will determine the number and/or the value of performance units and performance shares to be paid out to participants. The administrator may set performance objectives based on the achievement of company-wide, divisional, business unit, or individual goals (including, but not limited to, continued employment or service), applicable federal or state securities laws, or any other basis determined by the administrator in its discretion. After the grant of a performance unit or performance share, the administrator, in its sole discretion, may reduce or waive any performance criteria or other vesting provisions for such performance units or performance shares. Performance units shall have an initial dollar value established by the administrator on or prior to the grant date. Performance shares shall have an initial value equal to the fair market value of our common stock on the grant date. The administrator, in its sole discretion, may pay earned performance units or performance shares in the form of cash, in shares, or in some combination thereof.

Non-transferability of awards. Unless the administrator provides otherwise, our 2018 Plan generally does not allow for the transfer of awards and only the recipient of an award may exercise an award during his or her lifetime. If the administrator makes an award transferrable, such award will contain such additional terms and conditions as the administrator deems appropriate.

Certain adjustments. In the event of certain changes in our capitalization, such as an extraordinary dividend or distribution, recapitalization, stock split, reverse stock split, reorganization, merger, consolidation, split-up, spin-off, combination, repurchase, exchange of our shares or other securities, issuance of warrants, or any similar equity restructuring transaction, to prevent diminution or enlargement of the benefits or potential benefits available under our 2018 Plan, the administrator will adjust the number and class of shares that may be delivered under our 2018 Plan and/or the number, class, and price of shares covered by each outstanding award, and the numerical share limits set forth in our 2018 Plan.

Dissolution or liquidation. In the event of our proposed liquidation or dissolution, the administrator will notify participants as soon as practicable and all awards will terminate immediately prior to the consummation of such proposed transaction.

Merger or change in control. Our 2018 Plan provides that in the event of a merger or change in control, as defined under our 2018 Plan, each outstanding award will be treated as the administrator determines, without a requirement to obtain a participant's consent, including, without limitation, that such award will be continued by the successor corporation or a parent or subsidiary of the successor corporation, An award will be considered continued if following the transaction, (i) the award gives the right to purchase or receive the consideration received in the transaction by

holders of our shares or (ii) the award is terminated in exchange for an amount of cash and/or property, if any, equal to the amount that would have been received upon the exercise or realization of the award, which payment may be subject to any escrow applicable to holders of our common stock in connection with the transaction or subjected to the award's original vesting schedule. The administrator is not required to treat all awards, all awards held by a participant, or all awards of the same type, similarly.

In the event that a successor corporation or its parent or subsidiary does not continue an outstanding award, then such award will fully vest, all restrictions on such award will lapse, all performance goals or other vesting criteria applicable to such award will be deemed achieved at 100% of target levels and such award will become fully exercisable, if applicable, for a specified period prior to the transaction, unless specifically provided for otherwise under the applicable award agreement or other written agreement with the participant. The award will then terminate upon the expiration of the specified period of time. If an option or stock appreciation right is not assumed or substituted, the administrator will notify the participant in writing or electronically that such option or stock appreciation right will be exercisable for a period of time determined by the administrator in its sole discretion and the option or stock appreciation right will terminate upon the expiration of such period.

If an outside director's awards are assumed or substituted for in a merger or change in control and the service of such outside director is terminated on or following a change in control, other than pursuant to a voluntary resignation, his or her options and stock appreciation rights, if any, will vest fully and become immediately exercisable, all restrictions on his or her restricted stock and restricted stock units will lapse and all performance goals or other vesting requirements for his or her performance shares and units will be deemed achieved at 100% of target levels, and all other terms and conditions met.

Clawback. Awards will be subject to any clawback policy of ours, and the administrator also may specify in an award agreement that the participant's rights, payments, and/or benefits with respect to an award will be subject to reduction, cancellation, forfeiture, and/or recoupment upon the occurrence of certain specified events. Our board of directors may require a participant to forfeit, return, or reimburse us all or a portion of the award and/or shares issued under the award, any amounts paid under the award, and any payments or proceeds paid or provided upon disposition of the shares issued under the award in order to comply with such clawback policy or applicable laws.

Amendment; termination. The administrator has the authority to amend, suspend, or terminate our 2018 Plan provided such action does not impair the existing rights of any participant, subject to certain exceptions in accordance with the terms of our 2018 Plan. Our 2018 Plan automatically will terminate in 2029, unless we terminate it sooner.

2010 Stock Plan (as Amended and Restated)

Our 2010 Plan was originally adopted by our board of directors and approved by our stockholders in November 2010. Our 2010 Plan was most recently amended in December 2017. Our 2010 Plan allows us to provide incentive stock options, within the meaning of Section 422 of the Code, nonstatutory stock options and stock purchase rights to eligible employees, consultants and directors of ours and any parent or subsidiary of ours. Our 2010 Plan was terminated in 2019 and we will not grant any additional awards under our 2010 Plan. However, our 2010 Plan will continue to govern the terms and conditions of the outstanding awards previously granted under our 2010 Plan.

As of June 30, 2019, stock options covering 595,832 shares of our common stock were outstanding under our 2010 Plan.

Plan administration. Our 2010 Plan is administered by our board of directors or one or more committees appointed by our board of directors. The administrator's powers include the ability to amend, modify, extend, cancel or renew any award, accelerate, continue, extend or defer the exercisability or vesting of any award or to waive any restrictions or conditions applicable to any award. All questions of interpretation of the 2010 Plan or any award thereunder shall be determined by the administrator, whose determination is final and binding upon all persons having an interest in the 2010 Plan or such award.

Eligibility. Employees, certain consultants or directors of ours or of any parent or subsidiary company of ours are eligible to receive awards. Only our employees or employees of any parent or subsidiary company of ours are eligible to receive incentive stock options.

Stock options. Stock options have been granted under our 2010 Plan. Subject to the provisions of our 2010 Plan, the administrator determines the term of an option, the number of shares subject to an option, and the time period in which an option may be exercised.

The term of an option is stated in the applicable award agreement, but the term of an option may not exceed 10 years from the grant date. The administrator determines the exercise price of options, which may not be less than 100% of the fair market value of our common stock on the grant date. However, an incentive stock option granted to an individual who directly or by attribution owns more than 10% of the total combined voting power of all of our classes of stock or of any our parent or subsidiary may have a term of no longer than five years from the grant date and has an exercise price of at least 110% of the fair market value of our common stock on the grant date. In addition, to the extent that the aggregate fair market value of the shares with respect to which incentive stock options are exercisable for the first time by an employee during any calendar year (under all our plans and any parent or subsidiary) exceeds $100,000, such options are treated as nonstatutory stock options.

The administrator determines how a participant may pay the exercise price of an option, and the permissible methods are generally set forth in the applicable award agreement. If a participant's service, as defined in our 2010 Plan, terminates, that participant may exercise the vested portion of his or her option for the period of time stated in the applicable award agreement. Vested options generally will remain exercisable for three months or such longer period of time as set forth in the applicable award agreement if a participant's status as a service provider terminates for a reason other than death, disability or cause. If a participant's status as a service provider terminates for cause, as defined in our 2010 Plan, the option shall immediately be terminated and cease to be exercisable. If a participant's status as a service provider terminates due to death or disability, vested options generally will remain exercisable for twelve months from the date of termination (or such other longer period as set forth in the applicable award agreement). In no event will an option remain exercisable beyond its original term. If a participant does not exercise his or her option within the time specified in the award agreement, the option will terminate. Except as described above, the administrator has the discretion to determine the post-termination exercisability periods for an option.

Stock purchase rights. The administrator is authorized to grant stock purchase rights. A stock purchase right is an award that entitles the participant to purchase shares of our common stock. The terms, conditions, restrictions and any applicable repurchase right related to grants of stock purchase rights are determined by the administrator, provided that the purchase price established by the administrator may not be less than 100% of fair market value of a share of common stock on the date of grant or on the date the purchase is consummated and the stock purchase right will be exercisable for the period set forth by the administrator, not to exceed 30 days.

Non-transferability of awards. During an applicable participant's lifetime, only that participant may exercise his or her award. No option may be assignable or transferable by the participant, except by will or by the laws of descent and distribution. However, to the extent permitted by the administrator in its discretion and set forth in the option agreement, a nonstatutory stock option or stock purchase right may be assignable or transferable subject to the limitations set forth in the 2010 Plan.

Certain adjustments. In the event of any change made in, or other events that occur with respect to, our stock subject to the 2010 Plan or subject to an award granted under the 2010 Plan without the receipt of consideration by us, through a merger, consolidation, reorganization, recapitalization, reincorporation, stock dividend, a dividend other than a stock dividend that has a material effect on the fair market value of our stock, stock split, reverse stock split, split-up, split-off, spin-off, combination of shares, exchange of shares, or similar change in our corporate structure not involving the receipt of consideration by us, the administrator will make appropriate and proportionate adjustments to (1) the class and maximum number of shares reserved for issuance under the 2010 Plan, (2) the class and maximum number of shares that may be issued upon the exercise of incentive stock options and (3) the class and number of shares and exercise price, strike price or purchase price, if applicable, of all outstanding stock awards in order to prevent dilution or enlargement of participants' rights under the 2010 Plan.

Change in control. The administrator may, in its discretion, provide in any award agreement or, in the event of a change in control, as defined in the 2010 Plan, take such actions as it deems appropriate to provide for the acceleration of the exercisability and vesting in connection with such change in control of any or all outstanding

awards and shares acquired upon the exercise thereof upon such conditions, including termination of the participant's service prior to, upon or following such change in control, and to the extent the administrator determines.

In the event of a change in control, the acquiror, as defined in the 2010 Plan, without the consent of any participant, may provide for the assumption or continuation of the rights and obligations under each or any award or portion thereof outstanding immediately prior to a change in control or for the substitution with a substantially equivalent award for the acquiror's stock. Any award or portion thereof which is neither assumed nor continued by the acquiror, as may be deemed to occur under the terms of the 2010 Plan, or that is not exercised at the time of such change of control, shall terminate and cease to be outstanding as of the time of consummation of the change in control. Notwithstanding the above, shares acquired upon exercise of an award prior to the change in control and any consideration received pursuant to the change in control with respect to such shares shall continue to be subject to all applicable provisions of the award agreement.

Alternatively, the administrator may, in its sole discretion and without participant consent, determine that upon the occurrence of a change in control, each or any award outstanding immediately prior to the change in control shall be canceled in exchange for a payment with respect to each vested share (and each unvested share if determined by the administrator), of stock subject to such canceled award in (i) cash, (ii) our stock or of a corporation or other entity a party to the change in control, or (iii) other property which, in any such case, shall be in an amount having a fair market value equal to the consideration paid per share of stock in the change in control over the applicable exercise price per share under such award. If determined by the administrator, such consideration, less all applicable withholding taxes, shall be paid to participants in respect of their canceled awards as soon as practicable following the date of the change in control and in respect of the unvested of their canceled awards, in accordance with such award's vesting schedule in effect prior to the change in control.

Amendment; termination. Subject to the terms of the 2010 Plan, our board of directors may terminate, amend or modify the 2010 Plan or any portion thereof at any time. As noted above, the 2010 Plan terminated in 2019 and we will not grant any additional awards under our 2010 Plan. However, all outstanding awards will continue to be governed by their existing terms.

2019 Employee Stock Purchase Plan

Our board of directors has adopted, and our stockholders approved, our 2019 Employee Stock Purchase Plan (ESPP). Our ESPP will be effective on the business day immediately prior to the effective date of the registration statement of which this prospectus forms a part. However, no offering period or purchase period under the ESPP will begin unless and until determined by our board of directors. The ESPP is intended to have two components: a component that is intended to qualify as an "employee stock purchase plan" under Section 423 of the Code (the 423 Component) and a component that is not intended to so qualify (the Non-423 Component).

Authorized shares. A total of 280,000 shares of our common stock will be available for sale under our ESPP. The number of shares of our common stock that will be available for sale under our ESPP also includes an annual increase on the first day of each fiscal year beginning with the 2020 fiscal year, equal to the least of:

- 560,000 shares of our common stock;
- one percent (1%) of the outstanding shares of our capital stock as of the last day of the immediately preceding fiscal year; or
- such other amount as the administrator may determine.

Plan administration. Our board of directors, or a committee appointed by our board of directors will administer our ESPP, and have full but non-exclusive authority to interpret the terms of our ESPP and determine eligibility to participate, subject to the conditions of our ESPP, as described below. We expect our compensation committee to administer our ESPP. The administrator will have full and exclusive discretionary authority to construe, interpret, and apply the terms of the ESPP, to delegate ministerial duties to any of our employees, to designate separate offerings under the ESPP, to designate our subsidiaries and affiliates as participating in the 423 Component or Non-423 Component of the ESPP, to determine eligibility, to adjudicate all disputed claims filed under the ESPP and to establish procedures that it deems necessary or advisable for the administration of the ESPP, including, but not

limited to, adopting such procedures, sub-plans, and appendices to the enrollment agreement as are necessary or appropriate to permit participation in the ESPP by employees who are foreign nationals or employed outside the U.S. Unless otherwise determined, employees eligible to participate in each sub-plan will participate in a separate offering or in the Non-423 Component. The administrator's findings, decisions, and determinations are final and binding on all participants to the full extent permitted by law.

Eligibility. Unless otherwise determined by the administrator with respect to the Non-423 Component if required by applicable laws, all of our employees will be eligible to participate if they are customarily employed by us, or any participating subsidiary, for at least 20 hours per week and more than five months in any calendar year. The administrator, in its discretion, prior to an enrollment date for all options granted on such enrollment date in an offering, may determine that an employee who (i) has not completed at least two years of service (or a lesser period of time determined by the administrator) since his or her last hire date, (ii) customarily works not more than 20 hours per week (or a lesser period of time determined by the administrator), (iii) customarily works not more than five months per calendar year (or a lesser period of time determined by the administrator), (iv) is a highly compensated employee within the meaning of Section 414(q) of the Code, and (v) is a highly compensated employee within the meaning of Section 414(q) of the Code with compensation above a certain level or is an officer or subject to disclosure requirements under Section 16(a) of the Exchange Act, is or is not eligible to participate in such offering period.

However, an employee may not be granted rights to purchase shares of our common stock under our ESPP if such employee:

- immediately after the grant would own capital stock possessing 5% or more of the total combined voting power or value of all classes of our capital stock; or
- hold rights to purchase shares of our common stock under all of our employee stock purchase plans that accrue at a rate that exceeds $25,000 worth of shares of our common stock for each calendar year.

Offering periods; purchase periods. Our ESPP includes a component that allows us to make offerings intended to qualify under Section 423 of the Code and a component that allows us to make offerings not intended to qualify under Section 423 of the Code to designated companies, as described in our ESPP. Our ESPP provides for consecutive six-month offering periods. The offering periods are scheduled to start on the first trading day on or after May 15th and November 15th of each year, except for the first offering period, which will commence on the effective date of the registration statement of which this prospectus forms a part and will end on the first trading day on or before May 15, 2020, and the second offering period, which will commence on the first trading day on or after May 15, 2020. The administrator is authorized to change the duration of offering periods and purchase periods, including the starting and ending dates of offering periods and purchase periods, provided that no offering period may have a duration exceeding 27 months. If the fair market value of our common stock on the exercise date is less than the fair market value on the first trading day of the offering period, participants will be withdrawn from the current offering period following their purchase of shares on the purchase date and automatically will be enrolled in a new offering period.

Contributions. Our ESPP permits participants to purchase shares of our common stock through contributions (in the form of payroll deductions or otherwise to the extent permitted by the administrator) of up to 15% of their eligible compensation. A participant may purchase a maximum of 3,000 shares of our common stock during a purchase period.

Exercise of purchase right. Amounts deducted and accumulated by the participant during any offering period will be used to purchase shares of our common stock at the end of each purchase period established by our board of directors. The purchase price of the shares will be 85% of the lower of the fair market value of our common stock on the first trading day of each offering period or on the exercise date. Participants may end their participation at any time during an offering period and will be paid their accrued contributions that have not yet been used to purchase shares of our common stock. Participation ends automatically upon termination of employment with us.

Non-transferability. A participant may not transfer rights granted under our ESPP. If our compensation committee permits the transfer of rights, it may only be done by will, the laws of descent and distribution, or as otherwise provided under our ESPP. A participant may not transfer the shares acquired under the ESPP until the day after the six month anniversary of the day such shares were purchased.

Certain adjustments. In the event of certain changes in our capitalization as set forth in our ESPP, to prevent diminution or enlargement of the benefits or potential benefits available under our ESPP, the administrator will adjust the number and class of shares that may be delivered under our ESPP and/or the number, class and price of shares covered by each outstanding award, and the numerical share limits set forth in our ESPP.

Dissolution or liquidation. In the event of our proposed liquidation or dissolution, the offering period then in progress will be shortened, and a new exercise date occurring before the date of the proposed dissolution or liquidation, unless otherwise provided by the administrator. The administrator will notify each participant that the exercise date has been changed and that the participant's option will be exercised automatically on the new exercise date unless prior to such date the participant has withdrawn from the offering period.

Merger or change in control. Our ESPP provides that in the event of a merger or change in control, as defined under our ESPP, a successor corporation may assume or substitute each outstanding purchase right. If the successor corporation refuses to assume or substitute for the outstanding purchase right, the offering period then in progress will be shortened, and a new exercise date will be set that will be before the date of the proposed merger or change in control. The administrator will notify each participant that the exercise date has been changed and that the participant's option will be exercised automatically on the new exercise date unless prior to such date the participant has withdrawn from the offering period.

Amendment; termination. The administrator has the authority to amend, suspend, or terminate our ESPP, subject to certain exceptions described in our ESPP. Our ESPP automatically will terminate in 2039, unless we terminate it sooner.

Executive Incentive Compensation Plan

In August 2019, our board of directors adopted an Executive Incentive Compensation Plan (the Bonus Plan). The Bonus Plan will be administered by a committee appointed by our board of directors. Unless and until our board of directors determines otherwise, our compensation committee will be the administrator of the Bonus Plan. The Bonus Plan allows our compensation committee to provide cash incentive awards to selected employees, including our named executive officers, determined by our compensation committee, based upon performance goals established by our compensation committee. Our compensation committee, in its sole discretion, will establish a target award for each participant under the Bonus Plan, which may be expressed as a percentage of the participant's average annual base salary for the applicable performance period, a fixed dollar amount, or such other amount or based on such other formula as our compensation committee determines to be appropriate.

Under the Bonus Plan, our compensation committee will determine the performance goals applicable to awards, which goals may include, without limitation: (i) research and development, (ii) regulatory milestones or regulatory-related goals, (iii) gross margin, (iv) financial milestones, (v) new product or business development, (vi) operating margin, (vii) product release timelines or other product release milestones, (viii) publications, (ix) cash flow, (x) cash position, (xi) procurement, (xii) savings, (xiii) internal structure, (xiv) leadership development, (xv) project, function or portfolio-specific milestones, (xvi) partnering, license or research collaboration agreements, (xvii) capital raising, (xviii) initial public offering preparations, (xix) patentability, (xx) revenue, (xxi) revenue growth, (xxii) stock price and (xxiii) individual objectives such as peer reviews or other subjective or objective criteria. As determined by our compensation committee, the performance goals may be based on GAAP or non-GAAP results and any actual results may be adjusted by our compensation committee for one-time items or unbudgeted or unexpected items and/or payments of actual awards under the Bonus Plan when determining whether the performance goals have been met. The goals may be on the basis of any factors our compensation committee determines relevant, and may be on an individual, divisional, business unit, segment or company-wide basis. Any criteria used may be measured on such basis as our compensation committee determines. The performance goals may differ from participant to participant and from award to award. Our compensation committee also may determine that a target award or a portion thereof will not have a performance goal associated with it but instead will be granted (if at all) in the compensation committee's sole discretion.

401(k) Plan

We maintain a tax-qualified 401(k) retirement plan for all U.S. employees who satisfy certain eligibility requirements, including requirements relating to age and length of service. Under our 401(k) plan, employees may

elect to defer up to all eligible compensation, subject to applicable annual Internal Revenue Code limits. We intend for our 401(k) plan to qualify under Section 401(a) and 501(a) of the Code so that contributions by employees to our 401(k) plan, and income earned on those contributions, are not taxable to employees until withdrawn from our 401(k) plan. The 401(k) plan also permits contributions to be made on a post-tax basis for those employees participating in the Roth 401(k) plan component.

Rule 10b5-1 Sales Plans

Our directors and officers may adopt written plans, known as Rule 10b5-1 plans, in which they will contract with a broker to buy or sell shares of our common stock on a periodic basis. Under a Rule 10b5-1 plan, a broker executes trades under parameters established by the director or officer when entering into the plan, without further direction from them. The director or officer may amend a Rule 10b5-1 plan in some circumstances and may terminate a plan at any time. Our directors and executive officers may also buy or sell additional shares outside of a Rule 10b5-1 plan when they do not possess of material nonpublic information, subject to compliance with the terms of our insider trading policy.

Limitation on Liability and Indemnification of Directors and Officers

Our amended and restated certificate of incorporation, which will be in effect upon the completion of this offering, will contain provisions that limit the liability of our current and former directors for monetary damages to the fullest extent permitted by Delaware law. Delaware law provides that directors of a corporation will not be personally liable for monetary damages for any breach of fiduciary duties as directors, except liability for:

- any breach of the director's duty of loyalty to the corporation or its stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- unlawful payments of dividends or unlawful stock repurchases or redemptions; or
- any transaction from which the director derived an improper personal benefit.

Such limitation of liability does not apply to liabilities arising under federal securities laws and does not affect the availability of equitable remedies such as injunctive relief or rescission.

Our amended and restated certificate of incorporation will authorize us to indemnify our directors, officers, employees and other agents to the fullest extent permitted by Delaware law. Our amended and restated bylaws, which will be in effect upon the completion of this offering, will provide that we are required to indemnify our directors and officers to the fullest extent permitted by Delaware law and may indemnify our other employees and agents. Our amended and restated bylaws will also provide that, upon satisfaction of certain conditions, we will advance expenses incurred by a director or officer in advance of the final disposition of any action or proceeding, and permit us to secure insurance on behalf of any officer, director, employee or other agent for any liability arising out of his or her actions in that capacity regardless of whether we would otherwise be permitted to indemnify him or her under the provisions of Delaware law. We have entered and expect to continue to enter into agreements to indemnify our directors, executive officers and other employees as determined by our board of directors. With certain exceptions, these agreements provide for indemnification for related expenses including attorneys' fees, judgments, fines and settlement amounts incurred by any of these individuals in any action or proceeding. We believe that our amended and restated certificate of incorporation, our amended and restated bylaw provisions and these indemnification agreements are necessary to attract and retain qualified persons as directors and officers. We also maintain customary directors' and officers' liability insurance.

The limitation of liability and indemnification provisions in our amended and restated certificate of incorporation and our amended and restated bylaws may discourage stockholders from bringing a lawsuit against our directors for breach of their fiduciary duty. They may also reduce the likelihood of derivative litigation against our directors and officers, even though an action, if successful, might benefit us and other stockholders. Further, a stockholder's investment may be adversely affected to the extent that we pay the costs of settlement and damage awards against directors and officers as required by these indemnification provisions.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted for directors, executive officers or persons controlling us, we have been informed that, in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

CERTAIN RELATIONSHIPS AND RELATED PARTY AND OTHER TRANSACTIONS

The following is a summary of transactions since January 1, 2016 to which we have been a participant, in which:

- the amount involved exceeded or will exceed $120,000; and
- any of our directors, executive officers or holders of more than 5% of our capital stock, or any immediate family member of the foregoing persons (related persons), had or will have a direct or indirect material interest, other than compensation and other arrangements that are described under the section titled “Executive Compensation” or that were approved by our compensation committee.

We believe the terms obtained or consideration that we paid or received, as applicable, in connection with the transactions described below were comparable to terms available or the amounts that would be paid or received, as applicable in arm’s-length transactions.

From December 2017, when we established our Danish holding company structure, until December 2018, IGM Biosciences A/S (Holdco), our Danish holding company, held all of our outstanding equity interests. From December 2018 through the dissolution of Holdco in April 2019, Holdco held 98.6% of our outstanding equity interests, with the balance held primarily by certain of our employees.

The related party transaction disclosures included below reflect transactions between Holdco and related parties from December 2017 to April 2019, the interim period when the holding company structure was in place. For all other times, it includes transactions between us and related parties. We have not reflected any of the intercompany transactions between us and Holdco as related party transactions in this section.

Loans

Since December 2017, Haldor Topsøe Holding A/S (HTH), who is our majority stockholder, has made loans to us pursuant to unsecured promissory notes in the aggregate amount of $37.3 million, $17.3 million of which converted into shares of our Series B convertible preferred stock in the Series B Preferred Stock Transactions described below and $20.0 million of which converted into shares of our Series C convertible preferred stock in the Series C Preferred Stock Transactions described below. The notes bore interest at 3.6% per annum or less, and had short-term or unstated maturity dates. We accrued immaterial amounts of interest under these loans in 2017 and 2018. The largest loan balance outstanding was $20.0 million and the balance of the existing loans immediately prior to conversion was $20.0 million.

Sales of Securities

Series B Preferred Stock Transactions

From February 2016 through October 2018, we issued and sold an aggregate of 5,833,061 shares of our Series B convertible preferred stock at a purchase price of $6.61 per share for an aggregate purchase price of approximately $38.5 million.

The following table summarizes purchases of our Series B convertible preferred stock by related persons.

INVESTOR	SHARES OF SERIES B PREFERRED STOCK	TOTAL PURCHASE PRICE ($)
Haldor Topsøe Holding A/S (1)	5,815,205	38,429,214
Michael Loberg, Ph.D. (2)	4,539	30,000

(1) HTH holds a majority of our capital stock. Ms. Christina Teng Topsøe and Mr. Jakob Haldor Topsøe, each a member of our board of directors, are members of the board of directors of HTH and are affiliated with HTH.
(2) Dr. Michael Loberg is a member of our board of directors.

Series C Preferred Stock Transactions

In June 2019 and July 2019, we issued and sold an aggregate of 7,717,446 shares of our Series C convertible preferred stock at a purchase price of $13.22 per share for an aggregate purchase price of approximately $102.0 million, which included $20.0 million in settlement of indebtedness. The following table summarizes purchases of our Series C convertible preferred stock by related persons.

INVESTOR	SHARES OF SERIES C PREFERRED STOCK	TOTAL PURCHASE PRICE ($)
Entities affiliated with Baker Bros. Advisors LP (1)	2,269,837	30,000,000
Haldor Topsøe Holding A/S (2)	2,269,838	30,000,000
Entities for which Janus Capital Management, LLC is an investment advisor (3)	1,134,919	15,000,000
Entities affiliated with Redmile Group, LLC (4)	1,891,530	25,000,000

(1) Entities affiliated with Baker Bros. Advisors LP holding our securities whose shares are aggregated for purposes of reporting share ownership information include Baker Brothers Life Sciences L.P. and 667, L.P. Dr. Kelvin Neu, a member of our board of directors, is an employee of Baker Bros. Advisors LP.

(2) HTH holds a majority of our capital stock. Ms. Christina Teng Topsøe and Mr. Jakob Haldor Topsøe, each a member of our board of directors, are members of the board of directors of HTH and are affiliated with HTH. Total purchase price paid by HTH includes $20.0 million in settlement of indebtedness.

(3) Janus Capital Management LLC (Janus Capital) is an independent investment advisor registered under the Investment Advisers Act of 1940. Shares held by entities for whom Janus Capital is the investment advisor and who are holding our securities are aggregated for purposes of reporting share ownership information, including Janus Henderson Global Life Sciences Fund and Janus Henderson Capital Funds plc on behalf of its series Janus Henderson Global Life Sciences Fund (together, Janus Henderson).

(4) Entities affiliated with Redmile Group, LLC holding our securities whose shares are aggregated for purposes of reporting share ownership information include Redmile Biopharma Investments II, L.P., RAF, L.P. and Redmile Strategic Master Fund, LP. Mr. Michael Lee, a member of our board of directors, is a Co-Founder and Portfolio Manager at Redmile Group, LLC.

Aspects of Our Preferred Stock

Each share of our convertible preferred stock will automatically convert into one share of our common stock or our non-voting common stock, as applicable, immediately prior to the completion of this offering. All purchasers of our convertible preferred stock are entitled to specified registration rights. See the section titled “Description of Capital Stock—Registration Rights” for more information regarding these registration rights.

Agreements with Haldor Topsøe Holding A/S

Guarantee Arrangements

In February 2017, HTH, our majority stockholder, entered into an agreement to lend its credit and creditworthiness to us by providing a guarantee to allow us to enter into our February 2017 lease agreement for our office space in Mountain View, California in exchange for a guarantee commission of 1.5% per annum of the outstanding balance of the drawdowns on the letter of credit related to this lease. To date, no amounts have been drawn on the letter of credit and, therefore, we have paid no commissions to HTH under this arrangement.

In February 2019, HTH agreed to provide a guarantee to secure a standing letter of credit related to our February 2019 lease agreement for our office, laboratory and manufacturing space in Mountain View, California. HTH receives a guarantee commission of 1.5% per annum of the outstanding balance of any amounts drawn on the letter of credit. To date, no amounts have been drawn on the letter of credit and, therefore, we have paid no commissions to HTH under this arrangement.

Nominating Agreements

On June 28, 2019, we entered into Nominating Agreements with each of HTH, Baker Brothers and Redmile to provide certain rights with respect to their ability to designate members of our board of directors. See the section titled “Management—Board Composition” for additional information regarding the Nominating Agreements.

Investors’ Rights Agreement

We are party to an investors’ rights agreement, as amended, with certain holders of our capital stock, including HTH, Baker Brothers, Redmile and Janus Henderson. Under our investors’ rights agreement, certain holders of our capital

stock have the right to demand that we file a registration statement or request that their shares of our capital stock be covered by a registration statement that we are otherwise filing. See the section titled “Description of Capital Stock—Registration Rights” for additional information regarding these registration rights.

Indemnification Agreements

Our amended and restated certificate of incorporation, which will be in effect upon the completion of this offering, will contain provisions limiting the liability of the members of our board of directors, and our amended and restated bylaws, which will be in effect upon the completion of this offering, will provide that we will indemnify each of our officers and the members of our board of directors to the fullest extent permitted under Delaware law. Our amended and restated certificate of incorporation and amended and restated bylaws will also provide our board of directors with discretion to indemnify our employees and other agents when it determines to be appropriate. In addition, we have entered into or will enter into an indemnification agreement with each of our executive officers and the members of our board of directors requiring us to indemnify them. See the section titled “Executive Compensation—Limitation on Liability and Indemnification of Directors and Officers.”

Participation in this Offering

Certain of our directors and existing stockholders, including certain stockholders affiliated with our directors and that beneficially own more than 5% of our outstanding capital stock, have indicated an interest in purchasing an aggregate of $50.0 million or more in shares of our common stock in this offering at the initial public offering price. However, because indications of interest are not binding agreements or commitments to purchase, the underwriters may determine to sell more, fewer or no shares in this offering to any of these directors or stockholders, or any of these directors or stockholders may determine to purchase more, fewer or no shares in this offering.

Related Party Transaction Policy

Our audit committee will have the primary responsibility for reviewing and approving or disapproving “related party transactions,” which are transactions between us and related persons in which the aggregate amount involved exceeds or may be expected to exceed $120,000 and in which a related person has or will have a direct or indirect material interest. The charter of our audit committee will provide that our audit committee shall review and approve in advance any related party transaction.

We have adopted a formal written policy, which will become effective upon the effectiveness of the registration statement of which this prospectus forms a part, providing that we are not permitted to enter into any transaction that exceeds $120,000 and in which any related person has a direct or indirect material interest without the consent of our audit committee. In approving or rejecting any such transaction, our audit committee is to consider the relevant facts and circumstances available and deemed relevant to our audit committee, including whether the transaction is on terms no less favorable than terms generally available to an unaffiliated third party under the same or similar circumstances and the extent of the related person’s interest in the transaction.

PRINCIPAL STOCKHOLDERS

The following table sets forth information with respect to the beneficial ownership of our shares as of August 31, 2019 by:

- each of our named executive officers;
- each of the members of our board of directors;
- each person or entity known by us to own beneficially more than 5% of our common stock and non-voting common stock; and
- all of our executive officers and directors as a group.

We have determined beneficial ownership in accordance with the rules and regulations of the SEC, and the information is not necessarily indicative of beneficial ownership for any other purpose. Except as indicated by the footnotes below, we believe, based on information furnished to us, that the persons and entities named in the table below have sole voting and sole investment power with respect to all shares that they beneficially own, subject to applicable community property laws.

Certain of our directors and existing stockholders, including certain stockholders affiliated with our directors and that beneficially own more than 5% of our outstanding capital common stock, have indicated an interest in purchasing an aggregate of $50.0 million or more in shares of our common stock in this offering at the initial public offering price. The following table does not reflect the potential purchase of any shares in this offering by these directors and stockholders.

Applicable percentage of shares beneficially owned before the offering is based on 11,526,569 shares of common stock and 6,431,205 shares of non-voting common stock outstanding as of August 31, 2019 assuming the automatic conversion of 10,787,861 outstanding shares of convertible preferred stock into an aggregate of 10,787,861 shares of common stock and 6,431,205 outstanding shares of convertible preferred stock held by Baker Brothers, Redmile and HTH into an aggregate of 6,431,205 shares of non-voting common stock immediately prior to the completion of this offering. The applicable percentage of shares beneficially owned after the offering is based on the sale of 7,812,500 shares of common stock issued in the offering. In computing the number of shares beneficially owned by a person and the percentage ownership of such person, we deemed to be outstanding all shares subject to stock options held by the person that are currently exercisable, or that are exercisable within 60 days of August 31, 2019. However, except as described above, we did not deem such shares outstanding for the purpose of computing the percentage ownership of any other person, except with respect to the percentage ownership of all directors and executive officers as a group. Unless otherwise indicated, the address of each beneficial owner named in the table below and footnotes is c/o IGM Biosciences, Inc., 325 E. Middlefield Road, Mountain View, California 94043.

NAME OF BENEFICIAL OWNER	BENEFICIAL OWNERSHIP BEFORE THE OFFERING					BENEFICIAL OWNERSHIP AFTER THE OFFERING				
	VOTING COMMON STOCK		NON-VOTING COMMON STOCK		% OF TOTAL OUTSTANDING CAPITAL STOCK BEFORE THE OFFERING	VOTING COMMON STOCK		NON-VOTING COMMON STOCK		% OF TOTAL OUTSTANDING CAPITAL STOCK AFTER THE OFFERING
	SHARES	%	SHARES	%		SHARES	%	SHARES	%	
5% or Greater Stockholders:										
Haldor Topsøe Holding A/S (1)	9,039,453	78.4	2,269,838	35.3	63.0	9,039,453	46.7	2,269,838	35.3	43.9
Entities affiliated with Baker Bros. Advisors LP (2)	—	—	2,269,837	35.3	12.6	—	—	2,269,837	35.3	8.8
Entities affiliated with Redmile Group, LLC (3)	—	—	1,891,530	29.4	10.5	—	—	1,891,530	29.4	7.3
Entities for whom Janus Capital Management, LLC is investment advisor (4)	1,134,919	9.8	—	—	6.3	1,134,919	5.9	—	—	4.4
Named Executive Officers:										
Fred Schwarzer (5)	340,168	2.9	—	—	1.9	340,168	1.7	—	—	1.3
Daniel Chen, M.D., Ph.D. (6)	221,835	1.9	—	—	1.2	221,835	1.1	—	—	*
Bruce Keyt, Ph.D. (7)	256,268	2.2	—	—	1.4	256,268	1.3	—	—	1.0
Non-Employee Directors:										
M. Kathleen Behrens, Ph.D.	—	—	—	—	—	—	—	—	—	—
Julie Hambleton, M.D. (8)	4,098	*	—	—	*	4,098	*	—	—	*
Michael Lee (3)	—	—	1,891,530	29.4	10.5	—	—	1,891,530	29.4	7.3
Michael Loberg, Ph.D. (9)	34,803	*	—	—	*	34,803	*	—	—	*
Kelvin Neu, M.D. (2)	—	—	2,269,837	35.3	12.6	—	—	2,269,837	35.3	8.8
William Strohl, Ph.D. (10)	4,098	*	—	—	*	4,098	*	—	—	*
Christina Teng Topsøe (1)	9,039,453	78.4	2,269,838	35.3	63.0	9,039,453	46.7	2,269,838	35.3	43.9
Jakob Haldor Topsøe (1)	9,039,453	78.4	2,269,838	35.3	63.0	9,039,453	46.7	2,269,838	35.3	43.9
All current directors and executive officers as a group (twelve persons) (11)	9,900,723	82.2	6,431,205	100.0	90.9	9,900,723	49.9	6,431,205	100.0	63.4

* Represents beneficial ownership of less than 1%.

(1) Consists of 9,039,453 shares of our common stock and 2,269,838 shares of our non-voting common stock held of record by Haldor Topsøe Holding A/S (HTH). All shares are held directly by HTH. Mr. Jakob Haldor Topsøe, Ms. Christina Teng Topsøe, Mr. Martin Topsøe and Mr. Emil Øigaard, members of the board of directors of HTH, may be deemed to share voting and investment power with respect to the shares reported herein and disclaim beneficial ownership of such shares, except to the extent of his or her pecuniary interest therein, if any. Mr. Jakob Haldor Topsøe and Ms. Christina Teng Topsøe are members of our board of directors. The address of HTH is Haldor Topsøes Allé 1, 2800 Kgs. Lyngby, Denmark.

(2) Consists of (i) 187,942 shares of non-voting common stock held by 667, L.P. (667) and (ii) 2,081,895 shares of non-voting common stock held by Baker Brothers Life Sciences, L.P. (Life Sciences, and together with 667, the BBA Funds). Baker Bros. Advisors LP (BBA) is the management company and investment adviser to the BBA Funds and has the sole voting and investment power with respect to the shares held by the BBA Funds. Baker Bros. Advisors (GP) LLC (BBA-GP) is the sole general partner of BBA. The managing members of BBA-GP are Julian C. Baker and Felix J. Baker. Dr. Kelvin Neu, M.D., a member of our board of directors, is an employee of BBA. The address for BBA, BBA-GP and the BBA Funds is 860 Washington Street, 3rd Floor, New York, NY 10014. shares reported herein and disclaim beneficial ownership of such shares, except to the extent of his pecuniary interest therein, if any. Dr. Neu is a member of our board of directors and an employee of Baker Bros. Advisors LP. The address of the entities listed herein is 860 Washington Street, 3rd Floor, New York, NY 10014.

(3) Consists of (i) 84,850 shares of our non-voting common stock held of record by Redmile Strategic Master Fund, LP, (ii) 1,513,225 shares of our non-voting common stock held of record by Redmile Biopharma Investments II, L.P. and (iii) 293,455 shares of our non-voting common stock held of record by RAF, L.P. Redmile Group, LLC is the investment manager/adviser to each of the private investment vehicles listed in items (i)-(iii) (collectively, the Redmile Affiliates) and, in such capacity, exercises sole voting and investment power over all of the shares held by the Redmile Affiliates and may be deemed to be the beneficial owner of these shares. Jeremy C. Green serves as the managing member of Redmile Group, LLC and also may be deemed to be the beneficial owner of these shares. Redmile Group, LLC, Mr. Green and Mr. Lee each disclaim beneficial ownership of these shares, except to the extent of its or his pecuniary interest in such shares, if any. Mr. Lee is a member of our board of directors and a Co-Founder and Portfolio Manager of Redmile Group, LLC.

(4) Consists of (i) 700,647 shares of our common stock held of record by Janus Henderson Global Life Sciences Fund and (ii) 434,272 shares held of record by Janus Henderson Capital Funds plc on behalf of its series Janus Henderson Global Life Sciences Fund (together, the Janus Funds). Janus Capital Management, LLC, an investment advisor registered under the Investment Advisers Act of 1940 that acts as investment adviser for each of the Janus Funds, has the ability to make decisions with respect to the voting and disposition of the shares reported herein, subject to the oversight of the board of trustees or similar entity of each of the Janus Funds. For purposes of reporting requirements of the Exchange Act, Janus Capital Management LLC may be deemed to be the beneficial owner of all of the shares held by each of Janus Funds; however, Janus Capital Management LLC expressly disclaims that it is, in fact, the beneficial owner of such securities. The address of the entities listed herein is 151 Detroit Street, 4th Floor, Denver, CO 80206.

(5) Consists of (i) 196,718 shares of our common stock held of record by Mr. Schwarzer and (ii) 143,450 shares of our common stock issuable pursuant to options held by Mr. Schwarzer and exercisable within 60 days of August 31, 2019.

(6) Consists of (i) 116,518 shares of our common stock held of record by Dr. Chen, all of which are subject to forfeiture under certain circumstances, and (ii) 105,317 shares of our common stock issuable pursuant to options held by Dr. Chen and exercisable within 60 days of August 31, 2019.

(7) Consists of 256,268 shares of our common stock issuable pursuant to options held by Dr. Keyt and exercisable within 60 days of August 31, 2019.

(8) Consists of 4,098 shares of our common stock issuable pursuant to options held by Dr. Hambleton and exercisable within 60 days of August 31, 2019.

(9) Consists of 34,803 shares of our common stock held of record by Dr. Loberg.

(10) Consists of 4,098 shares of our common stock issuable pursuant to options held by Dr. Strohl and exercisable within 60 days of August 31, 2019.

(11) Consists of (i) 9,387,492 shares of our common stock held of record by our directors and executive officers, 116,518 of which are subject to forfeiture under certain circumstances, (ii) 6,431,205 shares of our non-voting common stock held of record by our directors and executive officers and (iii) 513,231 shares of our common stock issuable pursuant to options held by our directors and executive officers and exercisable within 60 days of August 31, 2019.

DESCRIPTION OF CAPITAL STOCK

General

The following descriptions of our capital stock and certain provisions of our amended and restated certificate of incorporation and amended and restated bylaws are summaries and are qualified by reference to the amended and restated certificate of incorporation and the amended and restated bylaws that will be in effect upon completion of this offering. Copies of these documents will be filed with the SEC as exhibits to our registration statement, of which this prospectus forms a part. The descriptions of the common stock, non-voting common stock and preferred stock reflect changes to our capital structure that will occur upon the completion of this offering.

Immediately prior to the completion of this offering and the filing of our amended and restated certificate of incorporation to be effective upon completion of this offering, our authorized capital stock will consist of 1,206,431,208 shares of capital stock, of which 1,000,000,000 shares are designated as voting common stock, par value $0.01 per share, 6,431,208 shares are designated as non-voting common stock, par value $0.01 per share, and 200,000,000 shares are designated as preferred stock, par value $0.01 per share.

Immediately prior to the completion of this offering, all the outstanding shares of our convertible preferred stock will automatically convert into an aggregate of 17,219,066 shares of our common stock and non-voting common stock.

Based on 11,523,240 shares of common stock and 6,431,205 shares of non-voting common stock outstanding as of June 30, 2019 (including 116,518 shares of restricted stock), and after giving effect to the automatic conversion of all of our outstanding convertible preferred stock (including 3,026,449 shares of Series C convertible preferred stock issued after June 30, 2019) into an aggregate of 10,787,861 shares of common stock and 6,431,205 shares of non-voting common stock immediately prior to the completion of this offering and the issuance of 7,812,500 shares of common stock in this offering, there will be 19,335,740 shares of common stock and 6,431,205 shares of non-voting common stock outstanding upon the completion of this offering. As of June 30, 2019, we had 44 stockholders of record. As of June 30, 2019, there were 1,929,283 shares of common stock subject to outstanding options.

Common Stock and Non-Voting Common Stock

Holders of our common stock and our non-voting common stock have identical rights, provided that, (i) except as otherwise expressly provided in our amended and restated certificate of incorporation or as required by applicable law, on any matter that is submitted to a vote by our stockholders, holders of our common stock are entitled to one vote per share of common stock, and holders of our non-voting common stock are not entitled to any votes per share of non-voting common stock, including for the election of directors, and (ii) holders of our common stock have no conversion rights, while holders of our non-voting common stock shall have the right to convert each share of our non-voting common stock into one share of common stock at such holder's election, provided that as a result of such conversion, such holder, together with its affiliates and any members of a Schedule 13(d) group with such holder, would not beneficially own in excess of 4.99% of our common stock immediately prior to and following such conversion, unless otherwise as expressly provided for in our amended and restated certificate of incorporation. However, this ownership limitation may be increased or decreased to any other percentage designated by such holder of non-voting common stock upon 61 days' notice to us.

Subject to preferences that may be applicable to any then outstanding preferred stock, holders of our common stock and non-voting common stock are entitled to receive ratably those dividends, if any, as may be declared by the board of directors out of legally available funds. In the event of our liquidation, dissolution or winding up, the holders of our common stock and non-voting common stock will be entitled to share ratably in the assets legally available for distribution to stockholders after the payment of or provision for all of our debts and other liabilities, subject to the prior rights of any preferred stock then outstanding. Holders of our common stock and non-voting common stock have no preemptive rights or other subscription rights and there are no redemption or sinking funds provisions applicable to our common stock and non-voting common stock. All outstanding shares of our common stock and non-voting common stock are, and the common stock and non-voting common stock to be outstanding immediately prior to the completion of this offering will be, duly authorized, validly issued, fully paid and nonassessable. The rights, preferences and privileges of holders of our common stock and non-voting common stock are subject to and

may be adversely affected by the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future.

Voting Rights

Our certificate of incorporation and bylaws to be in effect upon the completion of this offering do not provide for cumulative voting rights. Because of this, the holders of a plurality of the shares of our common stock entitled to vote in any election of directors can elect all of the directors standing for election, if they should so choose. With respect to matters other than the election of directors, at any meeting of the stockholders at which a quorum is present or represented, the affirmative vote of a majority of the voting power of the shares present in person or represented by proxy at such meeting and entitled to vote on the subject matter shall be the act of the stockholders, except as otherwise required by law. The holders of a majority of the stock issued and outstanding and entitled to vote, present in person or represented by proxy, shall constitute a quorum for the transaction of business at all meetings of the stockholders.

Dividends

Subject to preferences that may apply to any outstanding shares of convertible preferred stock, holders of our common stock and our non-voting common stock are entitled to receive dividends, if any, that our board of directors may declare from time to time out of funds legally available for that purpose on a non-cumulative basis and shared ratably.

Liquidation

In the event of our liquidation, dissolution or winding up, holders of our common stock and our non-voting common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities, subject to the satisfaction of any liquidation preference granted to the holders of any outstanding shares of convertible preferred stock.

Rights and Preferences

Holders of our common stock and our non-voting common stock have no preemptive, conversion or subscription rights, and there are no redemption or sinking fund provisions applicable to our common stock. The rights, preferences and privileges of the holders of our common stock and our non-voting common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of convertible preferred stock that we may designate and issue in the future.

Preferred Stock

Upon the completion of this offering, our board of directors will have the authority, without further action by the stockholders, to issue up to 200,000,000 shares of preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, redemption rights, liquidation preferences, sinking fund terms and the number of shares constituting any series or the designation of such series, any or all of which may be greater than the rights of common stock. The issuance of preferred stock could adversely affect the voting power of holders of common stock and the likelihood that such holders will receive dividend payments and payments upon liquidation. In addition, the issuance of preferred stock could have the effect of delaying, deferring or preventing change in our control or other corporate action. Upon the completion of this offering, no shares of preferred stock will be outstanding, and we have no present plan to issue any shares of preferred stock.

Stock Options

As of June 30, 2019, 1,929,283 shares of common stock were issuable upon the exercise of outstanding stock options, with a weighted-average exercise price of $1.25 per share, under our 2010 Plan and 2018 Plan. For additional information regarding terms of our equity incentive plans, see the section titled “Executive Compensation—Equity, Benefit and Retirement Plans.”

Registration Rights

We are party to an amended and restated investors’ rights agreement that provides that certain holders of our convertible preferred stock have certain registration rights as set forth below. The registration of shares of our common stock by the exercise of registration rights described below would enable the holders to sell these shares

without restriction under the Securities Act when the applicable registration statement is declared effective. Generally, in an underwritten offering, the managing underwriter, if any, has the right, subject to specified conditions, to limit the number of shares such holders may include.

Demand Registration Rights

After this offering, the holders of an aggregate of 17,494,123 shares of our common stock (including common stock issuable upon conversion to non-voting common stock) will be entitled to certain demand registration rights. At any time beginning 180 days after the completion of this offering and before the 5 year anniversary of the date of the investor rights agreement, the holders of at least 72% of these shares in the aggregate may, on not more than two occasions, request that we register all or a portion of their shares. Such request for registration must cover shares with an anticipated aggregate offering price, net of underwriting discounts and expenses, of at least $10.0 million.

Piggyback Registration Rights

In connection with this offering, the holders of an aggregate of 17,494,123 shares of our common stock (including common stock issuable upon conversion to non-voting common stock) were entitled to, and the necessary percentage of holders waived, their rights to notice of this offering and to include their shares of registrable securities in this offering. After this offering, in the event that we propose to register any of our securities under the Securities Act, either for our own account or for the account of other security holders, the holders of these shares will be entitled to certain piggyback registration rights allowing the holder to include their shares in such registration, subject to certain marketing and other limitations. As a result, whenever we propose to file a registration statement under the Securities Act, the holders of these shares are entitled to notice of the registration and have the right to include their shares in the registration, subject to limitations that the underwriters may impose on the number of shares included in the offering.

S-3 Registration Rights

After this offering, the holders of an aggregate of 17,494,123 shares of our common stock (including common stock issuable upon conversion to non-voting common stock) will be entitled to certain Form S-3 registration rights. The holders of these shares can make a request that we register their shares on Form S-3 if we are qualified to file a registration statement on Form S-3 and if the reasonably anticipated aggregate gross proceeds of the shares offered would equal or exceed $5,000,000. We will not be required to effect more than two registrations on Form S-3 within any consecutive 12-month period.

Indemnification

Our amended and restated investors' rights agreement contains customary cross-indemnification provisions, under which we are obligated to indemnify holders of registrable securities in the event of material misstatements or omissions in the registration statement attributable to us, and they are obligated to indemnify us for material misstatements or omissions attributable to them.

Expenses of Registration

We will pay the registration expenses, other than underwriting discounts and commissions, of the shares registered by the demand, piggyback and Form S-3 registrations described above.

Termination of Registration Rights

The demand, piggyback and Form S-3 registration rights of a stockholder described above will expire upon a Deemed Liquidation (as defined in our amended and restated certificate of incorporation) or such time after the closing of this offering that such stockholder can sell all of its shares entitled to registration rights under Rule 144 of the Securities Act.

Registration Rights Agreement

After this offering, any holder who may be deemed to be an "affiliate" as defined under Rule 144 of the Securities Act and holds at least 756,612 shares of our common stock (including common stock issuable upon conversion of non-voting common stock) issued upon conversion of our Series C convertible preferred stock will be entitled to bind us into entering into a registration rights agreement, through which, following the expiration of the 180-day-lockup period related to this offering, these holders who enter into the agreement with us would be, subject to certain limitations, entitled to certain registration rights. These registration rights would include the right to demand that we file with the SEC a Form S-3 registration statement covering the registration of their common stock for resale, subject to certain conditions, as well as rights to be permitted one underwritten public offering per calendar year, but no more than three underwritten public offerings in total, to effect the sale of their common stock. This registration rights agreement would require us to pay expenses relating to such registrations and indemnify these

holders against certain liabilities. Our registration obligations under this registration rights agreement would continue in effect until the earliest of (i) ten years after the date we enter into the agreement; (ii) when the applicable registrable securities have been resold by the holders pursuant to an effective registration statement; (iii) when the applicable registrable securities have been resold pursuant to Rule 144 (or other similar rule); or (iv) at any time after any of the holders of such registrable securities becomes an affiliate of the Company, when the applicable registrable securities may be resold pursuant to Rule 144 without limitations as to volume or manner of sale.

Anti-Takeover Effects of Certain Provisions of Delaware Law, Our Amended and Restated Certificate of Incorporation and Our Amended and Restated Bylaws

Certain provisions of Delaware law and certain provisions that will be included in our amended and restated certificate of incorporation and amended and restated bylaws summarized below may be deemed to have an anti-takeover effect and may delay, deter or prevent a tender offer or takeover attempt that a stockholder might consider to be in its best interests, including attempts that might result in a premium being paid over the market price for the shares held by stockholders.

Preferred Stock

Our amended and restated certificate of incorporation will contain provisions that permit our board of directors to issue, without any further vote or action by the stockholders, shares of convertible preferred stock in one or more series and, with respect to each such series, to fix the number of shares constituting the series and the designation of the series, the voting rights (if any) of the shares of the series and the powers, preferences or relative, participation, optional and other special rights, if any, and any qualifications, limitations or restrictions, of the shares of such series.

Classified Board

Our amended and restated certificate of incorporation will provide that our board of directors is divided into three classes, designated Class I, Class II and Class III. Each class will be an equal number of directors, as nearly as possible, consisting of one third of the total number of directors constituting the entire board of directors. The term of initial Class I directors shall terminate on the date of the 2020 annual meeting, the term of the initial Class II directors shall terminate on the date of the 2021 annual meeting, and the term of the initial Class III directors shall terminate on the date of the 2022 annual meeting. At each annual meeting of stockholders beginning in 2020, successors to the class of directors whose term expires at that annual meeting will be elected for a three-year term. The classification of directors, together with the limitations on removal of directors and treatment of vacancies, has the effect of making it more difficult for stockholders to change the composition of our board of directors.

Removal of Directors

Our amended and restated certificate of incorporation will provide that stockholders may only remove a director for cause by a vote of no less than a majority of the shares present in person or by proxy at the meeting and entitled to vote.

Director Vacancies

Our amended and restated certificate of incorporation will authorize only our board of directors to fill vacant directorships.

No Cumulative Voting

Our amended and restated certificate of incorporation will provide that stockholders do not have the right to cumulate votes in the election of directors.

Special Meetings of Stockholders

Our amended and restated certificate of incorporation and amended and restated bylaws will provide that, except as otherwise required by law, special meetings of the stockholders may be called only by an officer at the request of a majority of our board of directors, by the Chair of our board of directors or by our Chief Executive Officer.

Advance Notice Procedures for Director Nominations

Our amended and restated bylaws will provide that stockholders seeking to nominate candidates for election as directors at an annual or special meeting of stockholders must provide timely notice thereof in writing. To be timely, a stockholder’s notice generally will have to be delivered to and received at our principal executive offices before

notice of the meeting is issued by the secretary of the company, with such notice being served not less than 90 or more than 120 days before the meeting. Although the amended and restated bylaws will not give the board of directors the power to approve or disapprove stockholder nominations of candidates to be elected at an annual meeting, the amended and restated bylaws may have the effect of precluding the conduct of certain business at a meeting if the proper procedures are not followed or may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect its own slate of directors or otherwise attempting to obtain control of the company.

Action by Written Consent

Our amended and restated certificate of incorporation and amended and restated bylaws will provide that any action to be taken by the stockholders must be effected at a duly called annual or special meeting of stockholders and may not be effected by written consent.

Amending Our Certificate of Incorporation and Bylaws

Our amended and restated certificate of incorporation may be amended or altered in any manner provided by the DGCL. Our amended and restated bylaws may be adopted, amended, altered or repealed by stockholders only upon approval of at least majority of the voting power of all the then outstanding shares of the common stock, except for any amendment of the above provisions, which would require the approval of a two-thirds majority of our then outstanding common stock. Additionally, our amended and restated certificate of incorporation will provide that our bylaws may be amended, altered or repealed by the board of directors.

Authorized But Unissued Shares

Our authorized but unissued shares of common stock and convertible preferred stock will be available for future issuances without stockholder approval, except as required by the listing standards of Nasdaq, and could be utilized for a variety of corporate purposes, including future offerings to raise additional capital, acquisitions and employee benefit plans. The existence of authorized but unissued and unreserved common stock and convertible preferred stock could render more difficult or discourage an attempt to obtain control of the company by means of a proxy contest, tender offer, merger or otherwise.

Exclusive Jurisdiction

Our amended and restated bylaws will provide that, unless we consent to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for (i) any derivative action or proceeding under Delaware statutory or common law brought on our behalf, (ii) any action asserting a claim of breach of fiduciary duty, (iii) any action asserting a claim arising pursuant to the DGCL, (iv) any action regarding our amended and restated certificate of incorporation or amended and restated bylaws, or (v) any action asserting a claim against us that is governed by the internal affairs doctrine. This exclusive forum provision will not apply to any causes of action arising under the Securities Act or the Exchange Act or any other claim for which the federal courts have exclusive jurisdiction. Any person or entity purchasing or otherwise acquiring any interest in our securities shall be deemed to have notice of and consented to this provision. Although we believe these provisions benefit us by providing increased consistency in the application of Delaware law for the specified types of actions and proceedings, the provisions may have the effect of discouraging lawsuits against us or our directors and officers.

Business Combinations with Interested Stockholders

We are governed by Section 203 of the DGCL. Subject to certain exceptions, Section 203 of the DGCL prohibits a public Delaware corporation from engaging in a business combination (as defined in such section) with an “interested stockholder” (defined generally as any person who beneficially owns 15% or more of the outstanding voting stock of such corporation or any person affiliated with such person) for a period of three years following the time that such stockholder became an interested stockholder, unless (1) prior to such time the board of directors of such corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder; (2) upon consummation of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of such corporation at the time the transaction commenced (excluding for purposes of determining the voting stock of such corporation outstanding (but not the outstanding voting stock owned by the interested stockholder) those shares owned (A) by persons who are directors and also officers of such corporation and (B) by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer); or (3) at or subsequent to such time the business combination is approved by the board of directors of such corporation and authorized at a meeting of stockholders (and not by

written consent) by the affirmative vote of at least 66 2/3% of the outstanding voting stock of such corporation not owned by the interested stockholder.

Our amended and restated certificate of incorporation and our amended and restated bylaws will provide that we must indemnify our directors and officers to the fullest extent authorized by the DGCL. We are expressly authorized to, and do, carry directors' and officers' insurance providing coverage for our directors, officers and certain employees for some liabilities. We believe that these indemnification provisions and insurance are useful to attract and retain qualified directors and executive directors.

The limitation on liability and indemnification provisions in our certificate of incorporation and bylaws may discourage stockholders from bringing a lawsuit against directors for breach of their fiduciary duty. These provisions may also have the effect of reducing the likelihood of derivative litigation against directors and officers, even though such an action, if successful, might otherwise benefit us and our stockholders. In addition, your investment may be adversely affected to the extent we pay the costs of settlement and damage awards against directors and officers pursuant to these indemnification provisions.

Listing

We have applied to list our common stock on the Nasdaq Global Select Market under the trading symbol "IGMS."

Transfer Agent and Registrar

Upon completion of this offering, the transfer agent and registrar for our common stock and our non-voting common stock will be American Stock Transfer & Trust Company, LLC. The transfer agent and registrar's address is 6201 15th Avenue, Brooklyn, New York 11219.

SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, there has been no public market for our common stock. Future sales of substantial amounts of our common stock, including shares issued upon the exercise of outstanding stock options, in the public market following this offering, or the possibility of these sales or issuances occurring, could adversely affect the prevailing market price for our common stock or impair our ability to raise equity capital.

Based on our shares outstanding as of June 30, 2019, upon the completion of this offering, a total of 25,766,945 shares of common stock and non-voting common stock will be outstanding, assuming the automatic conversion of all outstanding shares of convertible preferred stock into an aggregate of 10,787,861 shares of common stock and 6,431,205 shares of non-voting common stock (including 3,026,449 shares of our Series C convertible preferred stock issued after June 30, 2019). Of these shares, all shares of common stock sold in this offering by us, plus any shares sold by us upon exercise of the underwriters' option to purchase additional shares, will be freely tradable in the public market without restriction or further registration under the Securities Act, unless these shares are held by "affiliates" as defined in Rule 144 under the Securities Act (Rule 144).

The remaining shares of common stock and our non-voting common stock will be, and shares of common stock subject to stock options will be upon issuance, "restricted securities" as defined in Rule 144. These restricted securities are eligible for public sale only if they are registered under the Securities Act or if they qualify for an exemption from registration under Rule 144 or Rule 701 under the Securities Act (Rule 701), which are summarized below. Restricted securities may also be sold outside of the United States to non-U.S. persons in accordance with Rule 904 of Regulation S under the Securities Act.

In addition, all of our executive officers, directors and holders of substantially all of our common stock (including shares of our non-voting common stock) and securities exercisable for or convertible into our common stock (including shares of our non-voting common stock) have agreed, or will agree, with the underwriters, subject to specific exceptions, not to sell any of our stock for at least 180 days following the date of this prospectus, subject to early release in certain circumstances as described below. As a result of these agreements and the provisions of our amended and restated investors' rights agreement described under the section titled "Description of Capital Stock—Registration Rights," subject to the provisions of Rules 144 or 701, shares will be available for sale in the public market as follows:

- beginning on the date of this prospectus, 7,812,500 shares of common stock sold in this offering will be immediately available for sale in the public market unless these shares are held by "affiliates" as defined in Rule 144; and
- beginning 181 days after the date of this prospectus, 11,523,240 additional shares of common stock and 6,431,205 shares of non-voting common stock (upon conversion to common stock) will become eligible for sale in the public market from time to time thereafter, subject in some cases to the volume and other restrictions of Rule 144, as described below.

Rule 144

In general, under Rule 144 as currently in effect, once we have been subject to public company reporting requirements of Section 13 or 15(d) of the Exchange Act for at least 90 days, an eligible stockholder is entitled to sell such shares without complying with the manner of sale, volume limitation or notice provisions of Rule 144, subject to compliance with the public information requirements of Rule 144. To be an eligible stockholder under Rule 144, such stockholder must not be deemed to have been one of our affiliates for purposes of the Securities Act at any time during the 90 days preceding a sale and must have beneficially owned the shares proposed to be sold for at least six months, including the holding period of any prior owner other than our affiliates. If such a person has beneficially owned the shares proposed to be sold for at least one year, including the holding period of any prior owner other than our affiliates, then such person is entitled to sell such shares without complying with any of the requirements of Rule 144, subject to the expiration of the lock-up agreements described below.

In general, under Rule 144, as currently in effect, our affiliates or persons selling shares on behalf of our affiliates are entitled to sell shares upon expiration of the lock-up agreements described below. Beginning 90 days after the

date of this prospectus, within any three-month period, such stockholders may sell a number of shares that does not exceed the greater of:

- 1% of the number of shares of common stock then outstanding, which will equal approximately shares immediately following this offering, assuming no exercise of the underwriters' option to purchase additional shares; or
- the average weekly trading volume of our common stock during the four calendar weeks preceding the filing of a notice on Form 144 with respect to such sale.

Sales under Rule 144 by our affiliates or persons selling shares on behalf of our affiliates are also subject to certain manner of sale provisions and notice requirements and to the availability of current public information about us.

Rule 701

Rule 701 generally allows a stockholder who was issued shares under a written compensatory plan or contract and who is not deemed to have been our affiliate during the immediately preceding 90 days, to sell these shares in reliance upon Rule 144, but without being required to comply with the public information, holding period, volume limitation or notice provisions of Rule 144. Rule 701 also permits our affiliates to sell their Rule 701 shares under Rule 144 without complying with the holding period requirements of Rule 144. However, all holders of Rule 701 shares are required by Rule 701 to wait until 90 days after the date of this prospectus before selling those shares under Rule 701, subject to the expiration of the lock-up agreements described below.

Form S-8 Registration Statements

We intend to file one or more registration statements on Form S-8 under the Securities Act with the SEC to register the offer and sale of shares of our common stock that are issuable under our 2010 Plan, our 2018 Plan and our ESPP. These registration statements will become effective immediately upon filing. Shares covered by these registration statements will then be eligible for sale in the public markets, subject to vesting restrictions, any applicable lock-up agreements described below and Rule 144 limitations applicable to affiliates.

Lock-Up Agreements

In connection with this offering, we, our directors, our officers and substantially all of the holders of our stock and stock options have agreed, subject to certain exceptions, with the underwriters not to dispose of or hedge any shares of our common stock or securities convertible into or exchangeable for shares of common stock (including shares of our non-voting common stock) during the period from the date of the lock-up agreement continuing through the date 180 days after the date of this prospectus, except with the prior written consent of Jefferies LLC, Piper Jaffray & Co. and Stifel, Nicolaus & Company, Incorporated. See the section titled "Underwriting."

In addition to the restrictions contained in the lock-up agreements described above, we have entered into agreements with certain of our stockholders, including the investors' rights agreement and our standard form option agreement, that contain market stand-off provisions imposing restrictions on the ability of such stockholders to offer, sell or transfer our equity securities for a period of 180 days following the date of this prospectus.

Registration Rights

Upon the completion of this offering, after giving effect to the conversion of all outstanding shares of convertible preferred stock into shares of our common stock and our non-voting common stock, as applicable, the holders of 17,494,123 shares of our common stock (including common stock issuable upon conversion to non-voting common stock), or their transferees, will be entitled to certain rights with respect to the registration of their securities under the Securities Act. If the offer and sale of these shares are registered, they will be freely tradable without restriction under the Securities Act immediately upon the effectiveness of the registration. See the section titled "Description of Capital Stock—Registration Rights."

MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES TO NON-U.S. HOLDERS OF THE OWNERSHIP AND DISPOSITION OF OUR COMMON STOCK

The following is a summary of the material U.S. federal income tax consequences to non-U.S. holders (as defined below) of the ownership and disposition of our common stock issued pursuant to this offering. This discussion is not a complete analysis of all potential U.S. federal income tax consequences relating thereto, does not address the potential application of the Medicare contribution tax on net investment income, and does not address any tax consequences arising under any state, local or foreign tax laws, or any other U.S. federal non-income tax laws. This discussion is based on the Internal Revenue Code of 1986, as amended, or the Code, Treasury Regulations promulgated thereunder, judicial decisions, and published rulings and administrative pronouncements of the Internal Revenue Service, or the IRS, all as in effect on the date of this prospectus. These authorities are subject to differing interpretations and may change, possibly retroactively, resulting in U.S. federal income tax consequences different from those discussed below. We have not requested a ruling from the IRS with respect to the statements made and the conclusions reached in the following summary, and there can be no assurance that the IRS or a court will agree with such statements and conclusions.

This discussion is limited to non-U.S. holders who purchase our common stock pursuant to this offering and who hold our common stock as a "capital asset" within the meaning of Section 1221 of the Code (generally, property held for investment). This discussion does not address all of the U.S. federal income tax consequences that may be relevant to an individual holder in light of such holder's particular circumstances. This discussion also does not consider any specific facts or circumstances that may be relevant to holders subject to special rules under the U.S. federal income tax laws, including:

- certain former citizens or long-term residents of the United States;
- partnerships or other pass-through entities (and investors therein);
- "controlled foreign corporations";
- "passive foreign investment companies";
- corporations that accumulate earnings to avoid U.S. federal income tax;
- banks, financial institutions, investment funds, insurance companies, brokers, dealers or traders in securities;
- tax-exempt organizations and governmental organizations;
- tax-qualified retirement plans;
- persons subject to the alternative minimum tax;
- persons subject to special tax accounting rules under Section 451(b) of the Code;
- persons that own or have owned, actually or constructively, more than 5% of our common stock;
- persons who have elected to mark securities to market; and
- persons holding our common stock as part of a hedging or conversion transaction or straddle, or a constructive sale, or other risk reduction strategy or integrated investment.

If an entity or arrangement that is classified as a partnership for U.S. federal income tax purposes holds our common stock, the U.S. federal income tax treatment of a partner in the partnership will generally depend on the status of the partner, the activities of the partnership and certain determinations made at the partner level. Partnerships holding our common stock and the partners in such partnerships are urged to consult their tax advisors about the particular U.S. federal income tax consequences to them of holding and disposing of our common stock.

THIS DISCUSSION IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT TAX ADVICE. PROSPECTIVE INVESTORS SHOULD CONSULT THEIR TAX ADVISORS REGARDING THE PARTICULAR U.S. FEDERAL INCOME TAX CONSEQUENCES TO THEM OF ACQUIRING, OWNING AND DISPOSING OF OUR COMMON STOCK, AS WELL AS ANY TAX CONSEQUENCES ARISING UNDER ANY STATE, LOCAL OR FOREIGN TAX LAWS AND ANY OTHER U.S. FEDERAL TAX LAWS.

Definition of Non-U.S. Holder

For purposes of this discussion, a non-U.S. holder is any beneficial owner of our common stock that is not a "U.S. person" or a partnership (including any entity or arrangement treated as a partnership) for U.S. federal income tax purposes. A U.S. person is any person that, for U.S. federal income tax purposes, is or is treated as any of the following:

- an individual who is a citizen or resident of the United States;
- a corporation created or organized under the laws of the United States, any state thereof or the District of Columbia;
- an estate, the income of which is includable in gross income for U.S. federal income tax purposes regardless of its source; or
- a trust (1) whose administration is subject to the primary supervision of a U.S. court and which has one or more U.S. persons who have the authority to control all substantial decisions of the trust or (2) that has a valid election in effect under applicable Treasury Regulations to be treated as a U.S. person.

Distributions on Our Common Stock

As described under the section titled "Dividend Policy," we have not paid and do not intend to declare or pay any cash dividends on our capital stock in the foreseeable future. However, if we distribute cash or other property on our common stock, such distributions will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. Amounts not treated as dividends for U.S. federal income tax purposes will constitute a return of capital to the extent of the holder's tax basis in our common stock, but not below zero. Any excess will be treated as gain realized on the sale or other disposition of our common stock and will be treated as described under "—Gain On Disposition of Our Common Stock" below.

Subject to the discussion below regarding effectively connected income, backup withholding and FATCA (as defined below), dividends paid to a non-U.S. holder of our common stock generally will be subject to U.S. federal withholding tax at a rate of 30% of the gross amount of the dividends or such lower rate specified by an applicable income tax treaty. To receive the benefit of a reduced treaty rate, a non-U.S. holder must furnish us or our withholding agent with a valid IRS Form W-8BEN or IRS Form W-8BEN-E (or applicable successor form) certifying such holder's qualification for the reduced rate, and the non-U.S. holder will be required to update such forms and certifications from time to time as required by law. This certification must be provided to us or our withholding agent before the payment of dividends and must be updated periodically. If the non-U.S. holder holds our common stock through a financial institution or other agent acting on the non-U.S. holder's behalf, the non-U.S. holder will be required to provide appropriate documentation to the agent, which then will be required to provide certification to us or our withholding agent, either directly or through other intermediaries.

If dividends paid on our common stock are effectively connected with U.S. trade or business conducted by a non-U.S. holder (and are attributable to such holder's permanent establishment or fixed base in the United States if required by an applicable tax treaty), the non-U.S. holder will be exempt from U.S. federal withholding tax. To claim the exemption, the non-U.S. holder must generally furnish a valid IRS Form W-8ECI (or applicable successor form) certifying eligibility for the exemption to the applicable withholding agent.

However, any such effectively connected dividends paid on our common stock generally will be subject to U.S. federal income tax on a net income basis at the same U.S. federal income tax rates and in the same manner as if such holder were a U.S. person. A non-U.S. holder that is a foreign corporation also may be subject to an additional branch profits tax equal to 30% (or such lower rate specified by an applicable income tax treaty) of its effectively connected earnings and profits for the taxable year, as adjusted for certain items.

Non-U.S. holders that do not provide the required certification on a timely basis, but that qualify for a reduced treaty rate, may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS. Non-U.S. holders should consult their tax advisors regarding any applicable income tax treaties that may provide for different rules.

Gain on Disposition of Our Common Stock

Subject to the discussion below regarding backup withholding, a non-U.S. holder generally will not be subject to U.S. federal income tax on any gain realized on the sale or other disposition of our common stock, unless:

- the gain is effectively connected with the non-U.S. holder's conduct of a trade or business in the United States and, if required by an applicable income tax treaty, is attributable to a permanent establishment or fixed base maintained by the non-U.S. holder in the United States;
- the non-U.S. holder is a nonresident alien individual present in the United States for 183 days or more during the taxable year of the sale or other disposition, and certain other requirements are met; or
- our common stock constitutes a "United States real property interest" by reason of our status as a United States real property holding corporation, or a USRPHC, for U.S. federal income tax purposes at any time within the shorter of the five-year period preceding the disposition or the non-U.S. holder's holding period for our common stock, and our common stock is not regularly traded on an established securities market during the calendar year in which the sale or other disposition occurs.

Determining whether we are a USRPHC depends on the fair market value of our U.S. real property interests relative to the fair market value of our other trade or business assets and our worldwide real property interests. We believe that we are not currently and we do not anticipate becoming a USRPHC for U.S. federal income tax purposes, although there can be no assurance we will not in the future become a USRPHC.

Gain described in the first bullet point above generally will be subject to U.S. federal income tax on a net income basis at the same U.S. federal income tax rates and in the same manner as if such holder were a U.S. person. A non-U.S. holder that is a foreign corporation also may be subject to an additional branch profits tax equal to 30% (or such lower rate specified by an applicable income tax treaty) of its effectively connected earnings and profits for the taxable year, as adjusted for certain items. Gain described in the second bullet point above will be subject to U.S. federal income tax at a flat 30% rate (or such lower rate specified by an applicable income tax treaty), but may be offset by certain U.S.-source capital losses (even though the individual is not considered a resident of the United States), provided that the non-U.S. holder has timely filed U.S. federal income tax returns with respect to such losses. Gain described in the third bullet point above will generally be subject to U.S. federal income tax in the same manner as gain that is effectively connected with the conduct of a U.S. trade or business, except that the branch profits tax generally will not apply.

Non-U.S. holders should consult their tax advisors regarding any applicable income tax treaties that may provide for different rules.

Information Reporting and Backup Withholding

Annual reports are required to be filed with the IRS and provided to each non-U.S. holder indicating the amount of dividends on our common stock paid to such holder and the amount of any tax withheld with respect to those dividends. These information reporting requirements apply even if no withholding was required because the dividends were effectively connected with the holder's conduct of a U.S. trade or business, or withholding was reduced or eliminated by an applicable income tax treaty. This information also may be made available under a specific treaty or agreement with the tax authorities in the country in which the non-U.S. holder resides or is established. Backup withholding, currently at a 24% rate, generally will not apply to payments to a non-U.S. holder of dividends on or the gross proceeds of a disposition of our common stock provided the non-U.S. holder furnishes the required certification for its non-U.S. status, such as by providing a valid IRS Form W-8BEN, IRS Form W-8BEN-E or IRS Form W-8ECI (or other applicable IRS Form W-8), and or certain other requirements are met, and if the payor does not have actual knowledge, or reason to know, that the holder is a U.S. person who is not an exempt recipient.

Backup withholding is not an additional tax. If any amount is withheld under the backup withholding rules, the non-U.S. holder should consult with a U.S. tax advisor regarding the possibility of and procedure for obtaining a refund or a credit against the non-U.S. holder's U.S. federal income tax liability, if any.

Withholding on Foreign Entities

Sections 1471 through 1474 of the Code, which are commonly referred to as FATCA, impose a U.S. federal withholding tax of 30% on certain payments made to a "foreign financial institution" (as specially defined under these rules) unless such institution enters into an agreement with the U.S. government to withhold on certain payments and to collect and provide to the U.S. tax authorities substantial information regarding certain U.S. account holders of such institution (which includes certain equity and debt holders of such institution, as well as certain account holders that are foreign entities with U.S. owners) or an exemption applies. FATCA also generally imposes a U.S. federal withholding tax of 30% on certain payments made to a non-financial foreign entity unless such entity certifies that it does not have any "substantial United States owners" (as defined in the Code) or provides the withholding agent a certification identifying the direct and indirect "substantial United States owners" of the entity and information with respect to such "substantial United States owners," or an exemption applies. An intergovernmental agreement between the United States and the holder's country of tax residence may modify these requirements. Under certain circumstances, a non-U.S. holder might be eligible for refunds or credits of such taxes. FATCA currently applies to dividends paid on our common stock. The U.S. Treasury Department recently released proposed regulations under FATCA which, if finalized in their present form, would eliminate the federal withholding tax of 30% applicable to gross proceeds of a sale or other disposition of our common stock, and has provided that such proposed regulations may be relied upon by taxpayers until final regulations are issued.

Prospective investors are encouraged to consult with their own tax advisors regarding the possible implications of FATCA on their investment in our common stock.

UNDERWRITING

Subject to the terms and conditions set forth in the underwriting agreement, dated , 2019, among us and Jefferies LLC, Piper Jaffray & Co. and Stifel, Nicolaus & Company, Incorporated, as the representatives of the underwriters named below and the joint book-running managers of this offering, we have agreed to sell to the underwriters, and each of the underwriters has agreed, severally and not jointly, to purchase from us, the respective number of shares of common stock shown opposite its name below:

UNDERWRITER	NUMBER OF SHARES
Jefferies LLC	
Piper Jaffray & Co.	
Stifel, Nicolaus & Company, Incorporated	
Guggenheim Securities, LLC	
Total	7,812,500

The underwriting agreement provides that the obligations of the several underwriters are subject to certain conditions precedent such as the receipt by the underwriters of officers' certificates and legal opinions and approval of certain legal matters by their counsel. The underwriting agreement provides that the underwriters will purchase all of the shares of common stock if any of them are purchased. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the nondefaulting underwriters may be increased or the underwriting agreement may be terminated. We have agreed to indemnify the underwriters and certain of their controlling persons against certain liabilities, including liabilities under the Securities Act, and to contribute to payments that the underwriters may be required to make in respect of those liabilities.

Certain of our directors and existing stockholders, including certain stockholders affiliated with our directors and that beneficially own more than 5% of our outstanding capital stock, have indicated an interest in purchasing an aggregate of $50.0 million or more in shares of our common stock in this offering at the initial public offering price. However, because indications of interest are not binding agreements or commitments to purchase, the underwriters may determine to sell more, fewer or no shares in this offering to any of these directors or stockholders, or any of these directors or stockholders may determine to purchase more, fewer or no shares in this offering. The underwriters will receive the same underwriting discounts and commissions on any shares purchased by these directors and stockholders as they will on any other shares sold to the public in this offering.

The underwriters have advised us that, following the completion of this offering, they currently intend to make a market in the common stock as permitted by applicable laws and regulations. However, the underwriters are not obligated to do so, and the underwriters may discontinue any market-making activities at any time without notice in their sole discretion. Accordingly, no assurance can be given as to the liquidity of the trading market for the common stock, that you will be able to sell any of the common stock held by you at a particular time or that the prices that you receive when you sell will be favorable.

The underwriters are offering the shares of common stock subject to their acceptance of the shares of common stock from us and subject to prior sale. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

Commission and Expenses

The underwriters have advised us that they propose to offer the shares of common stock to the public at the initial public offering price set forth on the cover page of this prospectus and to certain dealers, which may include the underwriters, at that price less a concession not in excess of $ per share of common stock. The underwriters may allow, and certain dealers may reallow, a discount from the concession not in excess of $ per share of common stock to certain brokers and dealers. After the offering, the initial public offering price, concession and reallowance to dealers may be reduced by the representatives. No such reduction will change the amount of proceeds to be received by us as set forth on the cover page of this prospectus.

The following table shows the public offering price, the underwriting discounts and commissions that we are to pay the underwriters and the proceeds, before expenses, to us in connection with this offering. Such amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

	PER SHARE		TOTAL	
	WITHOUT OPTION TO PURCHASE ADDITIONAL SHARES	WITH OPTION TO PURCHASE ADDITIONAL SHARES	WITHOUT OPTION TO PURCHASE ADDITIONAL SHARES	WITH OPTION TO PURCHASE ADDITIONAL SHARES
Public offering price	$	$	$	$
Underwriting discounts and commissions paid by us	$	$	$	$
Proceeds to us, before expenses	$	$	$	$

We estimate expenses payable by us in connection with this offering, other than the underwriting discounts and commissions referred to above, will be approximately $3.9 million. We will reimburse the underwriters for their expenses related to the review of this offering by the Financial Industry Regulatory Authority, Inc. in an amount up to $40,000.

Determination of Offering Price

Prior to this offering, there has not been a public market for our common stock. Consequently, the initial public offering price for our common stock will be determined by negotiations between us and the representatives. Among the factors to be considered in these negotiations will be prevailing market conditions, our financial information, market valuations of other companies that we and the underwriters believe to be comparable to us, estimates of our business potential, the present state of our development and other factors deemed relevant.

We offer no assurances that the initial public offering price will correspond to the price at which the common stock will trade in the public market subsequent to the offering or that an active trading market for the common stock will develop and continue after the offering.

Listing

We have applied to have our common stock listed on the Nasdaq Global Select Market under the trading symbol "IGMS".

Stamp Taxes

If you purchase shares of common stock offered in this prospectus, you may be required to pay stamp taxes and other charges under the laws and practices of the country of purchase, in addition to the offering price listed on the cover page of this prospectus.

Option to Purchase Additional Shares

We have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus, to purchase, from time to time, in whole or in part, up to an aggregate of 1,171,875 shares from us at the public offering price set forth on the cover page of this prospectus, less underwriting discounts and commissions. If the underwriters exercise this option, each underwriter will be obligated, subject to specified conditions, to purchase a number of additional shares proportionate to that underwriter's initial purchase commitment as indicated in the table above.

No Sales of Similar Securities

We, our officers, directors option holders and other holders of all or substantially all our outstanding capital stock and other securities have agreed, subject to specified exceptions, not to directly or indirectly:

- sell, offer, contract or grant any option to sell (including any short sale), pledge, transfer, establish an open "put equivalent position" within the meaning of Rule 16a-l(h) under the Securities Exchange Act of 1934, as amended, or

- otherwise dispose of any shares of common stock, options or warrants to acquire shares of common stock, or securities exchangeable or exercisable for or convertible into shares of common stock currently or hereafter owned either of record or beneficially, or
- publicly announce an intention to do any of the foregoing for a period of 180 days after the date of this prospectus without the prior written consent of the representatives.

This restriction terminates after the close of trading of the common stock on and including the 180th day after the date of this prospectus.

The representatives may, in their sole discretion and at any time or from time to time before the termination of the 180-day period release all or any portion of the securities subject to lock-up agreements. There are no existing agreements between the underwriters and any of our shareholders who will execute a lock-up agreement, providing consent to the sale of shares prior to the expiration of the lock-up period.

Stabilization

The underwriters have advised us that they, pursuant to Regulation M under the Exchange Act, certain persons participating in the offering may engage in short sale transactions, stabilizing transactions, syndicate covering transactions or the imposition of penalty bids in connection with this offering. These activities may have the effect of stabilizing or maintaining the market price of the common stock at a level above that which might otherwise prevail in the open market. Establishing short sales positions may involve either “covered” short sales or “naked” short sales.

“Covered” short sales are sales made in an amount not greater than the underwriters’ option to purchase additional shares of our common stock in this offering. The underwriters may close out any covered short position by either exercising their option to purchase additional shares of our common stock or purchasing shares of our common stock in the open market. In determining the source of shares to close out the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the option to purchase additional shares.

“Naked” short sales are sales in excess of the option to purchase additional shares of our common stock. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the shares of our common stock in the open market after pricing that could adversely affect investors who purchase in this offering.

A stabilizing bid is a bid for the purchase of shares of common stock on behalf of the underwriters for the purpose of fixing or maintaining the price of the common stock. A syndicate covering transaction is the bid for or the purchase of shares of common stock on behalf of the underwriters to reduce a short position incurred by the underwriters in connection with the offering. Similar to other purchase transactions, the underwriter’s purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock. As a result, the price of our common stock may be higher than the price that might otherwise exist in the open market. A penalty bid is an arrangement permitting the underwriters to reclaim the selling concession otherwise accruing to a syndicate member in connection with the offering if the common stock originally sold by such syndicate member are purchased in a syndicate covering transaction and therefore have not been effectively placed by such syndicate member.

Neither we nor any of the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our common stock. The underwriters are not obligated to engage in these activities and, if commenced, any of the activities may be discontinued at any time.

The underwriters may also engage in passive market making transactions in our common stock on Nasdaq in accordance with Rule 103 of Regulation M during a period before the commencement of offers or sales of shares of our common stock in this offering and extending through the completion of distribution. A passive market maker must display its bid at a price not in excess of the highest independent bid of that security. However, if all independent bids are lowered below the passive market maker’s bid, that bid must then be lowered when specified purchase limits are exceeded.

Electronic Distribution

A prospectus in electronic format may be made available by e-mail or on the web sites or through online services maintained by one or more of the underwriters or their affiliates. In those cases, prospective investors may view offering terms online and may be allowed to place orders online. The underwriters may agree with us to allocate a specific number of shares of common stock for sale to online brokerage account holders. Any such allocation for online distributions will be made by the underwriters on the same basis as other allocations. Other than the prospectus in electronic format, the information on the underwriters' web sites and any information contained in any other web site maintained by any of the underwriters is not part of this prospectus, has not been approved and/or endorsed by us or the underwriters and should not be relied upon by investors.

Other Activities and Relationships

The underwriter and certain of its affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. The underwriter and certain of its affiliates have, from time to time, performed, and may in the future perform, various commercial and investment banking and financial advisory services for us and our affiliates, for which they received or will receive customary fees and expenses.

In the ordinary course of their various business activities, the underwriter and certain of its affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve securities and/or instruments issued by us and our affiliates. If the underwriters or their respective affiliates have a lending relationship with us, they routinely hedge their credit exposure to us consistent with their customary risk management policies. The underwriters and their respective affiliates may hedge such exposure by entering into transactions which consist of either the purchase of credit default swaps or the creation of short positions in our securities or the securities of our affiliates, including potentially the common stock offered hereby. Any such short positions could adversely affect future trading prices of the common stock offered hereby. The underwriters and certain of their respective affiliates may also communicate independent investment recommendations, market color or trading ideas and/or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

Disclaimers About Non-U.S. Jurisdictions

Canada

(A) Resale Restrictions. The distribution of shares of common stock in Canada is being made only in the provinces of Ontario, Quebec, Alberta and British Columbia on a private placement basis exempt from the requirement that we prepare and file a prospectus with the securities regulatory authorities in each province where trades of these securities are made. Any resale of the shares of common stock in Canada must be made under applicable securities laws which may vary depending on the relevant jurisdiction, and which may require resales to be made under available statutory exemptions or under a discretionary exemption granted by the applicable Canadian securities regulatory authority. Purchasers are advised to seek legal advice prior to any resale of the securities.

(B) Representations of Canadian Purchasers. By purchasing shares of common stock in Canada and accepting delivery of a purchase confirmation, a purchaser is representing to us and the dealer from whom the purchase confirmation is received that:

- the purchaser is entitled under applicable provincial securities laws to purchase the shares of common stock without the benefit of a prospectus qualified under those securities laws as it is an "accredited investor" as defined under National Instrument 45-106 — *Prospectus Exemptions*;
- the purchaser is a "permitted client" as defined in National Instrument 31-103 — *Registration Requirements, Exemptions and Ongoing Registrant Obligations*;
- where required by law, the purchaser is purchasing as principal and not as agent; and
- the purchaser has reviewed the text above under Resale Restrictions.

(C) Conflicts of Interest. Canadian purchasers are hereby notified that the representatives are relying on the exemption set out in section 3A.3 or 3A.4, if applicable, of National Instrument 33-105 —*Underwriting Conflicts* from having to provide certain conflict of interest disclosure in this document.

(D) Statutory Rights of Action. Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if the prospectus (including any amendment thereto) such as this document contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser of these securities in Canada should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

(E) Enforcement of Legal Rights. All of our directors and officers as well as the experts named herein may be located outside of Canada and, as a result, it may not be possible for Canadian purchasers to effect service of process within Canada upon us or those persons. All or a substantial portion of our assets and the assets of those persons may be located outside of Canada and, as a result, it may not be possible to satisfy a judgment against us or those persons in Canada or to enforce a judgment obtained in Canadian courts against us or those persons outside of Canada.

(F) Taxation and Eligibility for Investment. Canadian purchasers of shares of common stock should consult their own legal and tax advisors with respect to the tax consequences of an investment in the shares of common stock in their particular circumstances and about the eligibility of the shares of common stock for investment by the purchaser under relevant Canadian legislation.

Australia

This prospectus is not a disclosure document for the purposes of Australia's Corporations Act 2001 (Cth) of Australia, or Corporations Act, has not been lodged with the Australian Securities & Investments Commission and is only directed to the categories of exempt persons set out below. Accordingly, if you receive this prospectus in Australia:

You confirm and warrant that you are either:

- a "sophisticated investor" under section 708(8)(a) or (b) of the Corporations Act;
- a "sophisticated investor" under section 708(8)(c) or (d) of the Corporations Act and that you have provided an accountant's certificate to the Company which complies with the requirements of section 708(8)(c)(i) or (ii) of the Corporations Act and related regulations before the offer has been made;
- a person associated with the Company under section 708(12) of the Corporations Act; or
- a "professional investor" within the meaning of section 708(11)(a) or (b) of the Corporations Act.

To the extent that you are unable to confirm or warrant that you are an exempt sophisticated investor, associated person or professional investor under the Corporations Act any offer made to you under this prospectus is void and incapable of acceptance.

You warrant and agree that you will not offer any of the securities issued to you pursuant to this prospectus for resale in Australia within 12 months of those securities being issued unless any such resale offer is exempt from the requirement to issue a disclosure document under section 708 of the Corporations Act.

European Economic Area

Any distributor subject to MiFID II that is offering, selling or recommending the shares of common stock is responsible for undertaking its own target market assessment in respect of the shares of common stock and determining its own distribution channels for the purposes of the MiFID product governance rules under Commission Delegated Directive (EU) 2017/593 (the Delegated Directive). Neither we nor the underwriters make any representations or warranties as to a distributor's compliance with the Delegated Directive.

In relation to each member state of the European Economic Area which has implemented the Prospectus Directive (each, a Relevant Member State), an offer to the public of any common shares which are the subject of the offering contemplated by this prospectus may not be made in that Relevant Member State except that an offer to the public

in that Relevant Member State of any common shares may be made at any time under the following exemptions under the Prospectus Directive, if they have been implemented in that Relevant Member State:

- to any legal entity which is a "qualified investor" as defined in the Prospectus Directive;
- to fewer than 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150, natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the underwriters or the underwriters nominated by us for any such offer; or
- in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of common shares shall require us or any of the underwriters to publish a prospectus pursuant to Article 3 of the Prospectus Directive or supplement a prospectus pursuant to Article 16 of the Prospectus Directive.

For the purposes of this provision, the expression an "offer common shares to the public" in relation to the common shares in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the common shares to be offered so as to enable an investor to decide to purchase or subscribe to the common shares, as the same may be varied in that Relevant Member State by any measure implementing the Prospectus Directive in that Relevant Member State and the expression "Prospectus Directive" means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State), and includes any relevant implementing measure in the Relevant Member State and the expression "2010 PD Amending Directive" means Directive 2010/73/EU.

Hong Kong

No securities have been offered or sold, and no securities may be offered or sold, in Hong Kong, by means of any document, other than to persons whose ordinary business is to buy or sell shares or debentures, whether as principal or agent; or to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong (SFO) and any rules made under that Ordinance; or in other circumstances which do not result in the document being a "prospectus" as defined in the Companies Ordinance (Cap. 32) of Hong Kong (CO) or which do not constitute an offer or invitation to the public for the purpose of the CO or the SFO. No document, invitation or advertisement relating to the securities has been issued or may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted under the securities laws of Hong Kong) other than with respect to securities which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the SFO and any rules made under that Ordinance.

This prospectus has not been registered with the Registrar of Companies in Hong Kong. Accordingly, this prospectus may not be issued, circulated or distributed in Hong Kong, and the securities may not be offered for subscription to members of the public in Hong Kong. Each person acquiring the securities will be required, and is deemed by the acquisition of the securities, to confirm that he is aware of the restriction on offers of the securities described in this prospectus and the relevant offering documents and that he is not acquiring, and has not been offered any securities in circumstances that contravene any such restrictions.

Israel

This document does not constitute a prospectus under the Israeli Securities Law, 5728-1968, or the Securities Law, and has not been filed with or approved by the Israel Securities Authority. In Israel, this prospectus is being distributed only to, and is directed only at, and any offer of the shares of common stock is directed only at, (i) a limited number of persons in accordance with the Israeli Securities Law and (ii) investors listed in the first addendum, or the Addendum, to the Israeli Securities Law, consisting primarily of joint investment in trust funds, provident funds, insurance companies, banks, portfolio managers, investment advisors, members of the Tel Aviv Stock Exchange, underwriters, venture capital funds, entities with equity in excess of NIS 50 million and "qualified individuals," each as defined in the Addendum (as it may be amended from time to time), collectively referred to as qualified investors (in each case purchasing for their own account or, where permitted under the Addendum, for the accounts of their clients who are investors listed in the Addendum). Qualified investors are required to submit written confirmation that they fall within the scope of the Addendum, are aware of the meaning of same and agree to it.

Japan

The offering has not been and will not be registered under the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948 of Japan, as amended), or FIEL, and the Initial Purchaser will not offer or sell any securities, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the FIEL and any other applicable laws, regulations and ministerial guidelines of Japan.

Singapore

This prospectus has not been and will not be lodged or registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase of the shares of common stock may not be circulated or distributed, nor may the shares of common stock be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore (the SFA), (ii) to a relevant person pursuant to Section 275(1), or any person pursuant to Section 275(1A), and in accordance with the conditions specified in Section 275, of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the shares of common stock are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

- a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or
- a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities (as defined in Section 239(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the shares of common stock pursuant to an offer made under Section 275 of the SFA except:

- to an institutional investor or to a relevant person defined in Section 275(2) of the SFA, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;
- where no consideration is or will be given for the transfer;
- where the transfer is by operation of law;
- as specified in Section 276(7) of the SFA; or
- as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore.

Switzerland

The securities may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange (SIX) or on any other stock exchange or regulated trading facility in Switzerland. This prospectus has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this prospectus nor any other offering or marketing material relating to the securities or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this prospectus nor any other offering or marketing material relating to the offering, the Company or the securities have been or will be filed with or approved by any Swiss regulatory authority. In particular, this prospectus will not be filed with, and the offer of securities will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA, and the offer of securities has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes (CISA). The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of securities.

United Kingdom

This prospectus is only being distributed to, and is only directed at, persons in the United Kingdom that are qualified investors within the meaning of Article 2(1)(e) of the Prospectus Directive that are also (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the Order) and/or (ii) high net worth entities falling within Article 49(2)(a) to (d) of the Order and other persons to whom it may lawfully be communicated (each such person being referred to as a relevant person).

This prospectus and its contents are confidential and should not be distributed, published or reproduced (in whole or in part) or disclosed by recipients to any other persons in the United Kingdom. Any person in the United Kingdom that is not a relevant person should not act or rely on this document or any of its contents.

LEGAL MATTERS

The validity of the shares of common stock being offered by this prospectus will be passed upon for us by Wilson Sonsini Goodrich & Rosati, Professional Corporation, Palo Alto, California. Certain legal matters in connection with this offering will be passed upon for the underwriters by Cooley LLP, San Francisco, California.

EXPERTS

The financial statements as of and for the years ended December 31, 2017 and December 31, 2018 included in the Prospectus, have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report appearing herein. Such financial statements are included in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We have submitted with the SEC a registration statement on Form S-1, including exhibits and schedules, under the Securities Act, with respect to the shares of common stock being offered by this prospectus. This prospectus, which constitutes part of the registration statement, does not contain all of the information in the registration statement and its exhibits. For further information with respect to us and the shares of common stock offered by this prospectus, we refer you to the registration statement and its exhibits. Statements contained in this prospectus as to the contents of any contract or any other document referred to are not necessarily complete and, in each instance, we refer you to the copy of the contract or other document filed as an exhibit to the registration statement. Each of these statements is qualified in all respects by this reference. The SEC also maintains an internet website that contains reports, proxy statements and other information about issuers, like us, that file electronically with the SEC. The address of that website is www.sec.gov.

Upon the completion of this offering, we will be subject to the information reporting requirements of the Exchange Act, and we will file reports, proxy statements and other information with the SEC. These reports, proxy statements and other information will be available for inspection and copying at the public reference room and web site of the SEC referred to above. We also maintain a website at www.igmbio.com, at which, following the completion of this offering, you may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. Information contained on or accessible through our website is not a part of this prospectus, and the inclusion of our website address in this prospectus is an inactive textual reference only.

IGM BIOSCIENCES, INC.
INDEX TO FINANCIAL STATEMENTS

Audited Financial Statements

Unaudited Financial Statements

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of IGM Biosciences, Inc.

Opinion on the Financial Statements

We have audited the accompanying balance sheets of IGM Biosciences, Inc. (the "Company") as of December 31, 2017 and 2018, the related statements of operations, convertible preferred stock and stockholders' deficit, and cash flows for the years then ended, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2017 and 2018, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2018, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Deloitte & Touche LLP

San Francisco, California
June 28, 2019 (August 30, 2019 as to the effects of the reverse stock split as described in Note 1)

We have served as the Company's auditor since 2019.

IGM BIOSCIENCES, INC.

Balance Sheets
(in thousands, except share and per share amounts)

	DECEMBER 31, 2017	DECEMBER 31, 2018
Assets		
Current assets:		
Cash and cash equivalents	$ 432	$ 1,887
Prepaid expenses and other current assets	223	485
Income tax receivable	—	35
Total current assets	655	2,407
Property and equipment, net	677	1,472
Restricted cash	50	100
Other assets	8	—
Total assets	$ 1,390	$ 3,979
Liabilities, convertible preferred stock and stockholders' deficit		
Current liabilities:		
Accounts payable	$ 225	$ 164
Accrued liabilities	507	3,582
Deferred rent	116	108
Related party loan	—	5,027
Income tax payable	128	—
Other current liabilities	—	9
Total current liabilities	976	8,890
Deferred rent, non-current	125	—
Other long-term liabilities	9	—
Total liabilities	1,110	8,890
Commitments and contingencies (Note 8)		
Convertible preferred stock, $0.01 par value; 9,501,624 authorized as of December 31, 2017 and 2018; 6,384,797 and 9,501,620 shares issued and outstanding as of December 31, 2017 and 2018, respectively; aggregate liquidation preference of $40,868 and $61,466 as of December 31, 2017 and 2018, respectively	40,783	60,917
Stockholders' deficit:		
Common stock, $0.01 par value; 30,264,511 authorized as of December 31, 2017 and 2018; 438,074 issued and outstanding, as of December 31, 2017 and 2018	4	4
Additional paid-in capital	35,479	751
Due from related party	(34,625)	(2,511)
Accumulated deficit	(41,361)	(64,072)
Total stockholders' deficit	(40,503)	(65,828)
Total liabilities, convertible preferred stock and stockholders' deficit	$ 1,390	$ 3,979

The accompanying notes are an integral part of these financial statements.

IGM BIOSCIENCES, INC.

Statements of Operations
(in thousands, except share and per share amounts)

	YEAR ENDED DECEMBER 31,	
	2017	2018
Operating expenses:		
Research and development	$ 8,639	$ 18,962
General and administrative	2,508	3,829
Total operating expenses	11,147	22,791
Loss from operations	(11,147)	(22,791)
Other income, net	93	80
Net loss	$ (11,054)	$ (22,711)
Net loss per share, basic and diluted	$ (25.24)	$ (51.84)
Weighted-average common shares outstanding, basic and diluted	437,942	438,074
Pro forma net loss per share, basic and diluted (unaudited)		$ (3.07)
Pro forma weighted-average common shares outstanding, basic and diluted (unaudited)		7,395,000

The accompanying notes are an integral part of these financial statements.

IGM BIOSCIENCES, INC.

Statements of Convertible Preferred Stock and Stockholders' Deficit
(in thousands, except share amounts)

	CONVERTIBLE PREFERRED STOCK		COMMON STOCK		ADDITIONAL PAID-IN CAPITAL	DUE TO (FROM) RELATED PARTY	ACCUMULATED DEFICIT	TOTAL STOCKHOLDERS' DEFICIT
	SHARES	AMOUNT	SHARES	AMOUNT				
Balance at December 31, 2016	5,238,771	$33,004	434,849	$ 4	$ 600	$ —	$ (30,307)	$ (29,703)
Issuance of Series B convertible preferred stock	1,210,580	8,000	—	—	—	—	—	—
Exercise of stock options	—	—	3,215	—	3	—	—	3
Shares repurchased and retired	(64,554)	(221)	—	—	221	—	—	221
Related party equity transaction	—	—	—	—	34,625	(34,625)	—	—
Tax resulting from related party transactions	—	—	—	—	(128)	—	—	(128)
Capital contribution from related party	—	—	—	—	65	—	—	65
Stock-based compensation expense	—	—	—	—	93	—	—	93
Net loss	—	—	—	—	—	—	(11,054)	(11,054)
Balance at December 31, 2017	6,384,797	40,783	438,074	4	35,479	(34,625)	(41,361)	(40,503)
Issuance of Series B convertible preferred stock, net of issuance costs of $0.5 million	3,116,823	20,134	—	—	(286)	(2,511)	—	(2,797)
Related party equity transaction	—	—	—	—	(34,625)	34,625	—	—
Stock-based compensation expense	—	—	—	—	183	—	—	183
Net loss	—	—	—	—	—	—	(22,711)	(22,711)
Balance at December 31, 2018	9,501,620	$60,917	438,074	$ 4	$ 751	$ (2,511)	$ (64,072)	$ (65,828)

The accompanying notes are an integral part of these financial statements.

IGM BIOSCIENCES, INC.

Statements of Cash Flows
(in thousands)

	YEAR ENDED DECEMBER 31,	
	2017	2018
Operating activities		
Net loss	$(11,054)	$(22,711)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation	161	278
Stock-based compensation expense	93	183
Accrued interest on related party loan	—	27
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	(54)	(262)
Other assets	(8)	8
Income tax receivable	—	(35)
Accounts payable	128	(61)
Accrued liabilities	316	2,791
Income tax payable	—	(128)
Deferred rent	52	(134)
Other current liabilities	—	9
Other long-term liabilities	9	(9)
Net cash used in operating activities	(10,357)	(20,044)
Investing activities		
Purchase of property and equipment	(385)	(788)
Net cash used in investing activities	(385)	(788)
Financing activities		
Proceeds from related party for issuance of Series B convertible preferred stock	8,000	17,337
Proceeds from related party capital contribution	65	—
Proceeds from exercise of stock options	3	—
Proceeds from loan from a related party	—	5,000
Net cash provided by financing activities	8,068	22,337
Net (decrease) increase in cash, cash equivalents, and restricted cash	(2,674)	1,505
Cash, cash equivalents, and restricted cash at beginning of year	3,156	482
Cash, cash equivalents, and restricted cash at end of year	$ 482	$ 1,987
Cash, cash equivalents, and restricted cash at end of year		
Cash and cash equivalents	$ 432	$ 1,887
Restricted cash	50	100
Cash, cash equivalents, and restricted cash at end of year	$ 482	$ 1,987
Supplemental disclosure of cash flow information		
Cash paid for income taxes	$ —	$ 167
Supplemental disclosure of non-cash investing and financing activities		
Acquisition of property and equipment in accrued liabilities	$ 8	$ 292
Stock repurchase paid by related party	$ 221	$ —
Receivable from related party for Series B convertible preferred stock	$ —	$ 2,511
Related party equity transaction	$(34,625)	$ 34,625

The accompanying notes are an integral part of these financial statements.

IGM BIOSCIENCES, INC.

Notes to Financial Statements

1. Organization

Organization

IGM Biosciences, Inc., (the Company), was incorporated in the state of Delaware in August 1993 under the name Palingen, Inc. and the name was subsequently changed to IGM Biosciences, Inc. in 2010. The Company's headquarters are in Mountain View, California. IGM Biosciences, Inc. is a biotechnology company engaged in the development of IgM antibody therapeutics for the treatment of cancer.

In December 2017, the Company established a holding company (Holdco); in April 2019, Holdco was subsequently dissolved and equity interests in Holdco were converted into equity interests in the Company. The information included in these financial statements is consistently presented as if it is that of the Company, even during the interim period when investors held their equity interests in Holdco. For the periods ended December 31, 2017 and 2018, Haldor Topsøe Holding A/S was the majority investor in the Company either through its direct equity ownership or indirectly as the majority owner of Holdco. Haldor Topsøe Holding A/S and Holdco represent a combined entity (Majority Investor) as referenced herein.

Basis of presentation

These financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP).

Reverse Stock Split

In August 2019, the Company filed an amendment to the Company's amended and restated certificate of incorporation to effect a reverse split of shares of the Company's common stock, non-voting common stock and convertible preferred stock, each on a 6.6084-for-1 basis (Reverse Stock Split). The Reverse Stock Split also applied to any outstanding securities or rights convertible into, or exchangeable or exercisable for, common stock, non-voting common stock or convertible preferred stock. The par value of the common stock was not adjusted as a result of the Reverse Stock Split. All references to common stock, non-voting common stock, restricted stock, options to purchase common stock, share data, per share data, convertible preferred stock and related information contained in the financial statements and related footnotes have been retrospectively adjusted to reflect the effect of the Reverse Stock Split for all periods presented. The Reverse Stock Split was effected on August 30, 2019.

Liquidity and capital resources

The Company has incurred net operating losses and negative cash flows from operations since its inception and had an accumulated deficit of $64.1 million at December 31, 2018. As of December 31, 2018, the Company had cash and cash equivalents of $1.9 million. Additionally, in June 2019, the Company entered into an agreement to issue and sell shares of its Series C convertible preferred stock through which the Company has a contractual right to receive gross proceeds of approximately $102.0 million, which includes $20.0 million in conversion of all of the amounts outstanding under an unsecured promissory note (See Note 11). Due to the additional financing, management believes that its existing financial resources are sufficient to continue operating activities at least one year past the issuance date of these financial statements. Future capital requirements will depend on many factors, including the timing and extent of spending on research and development and the market acceptance of the Company's products.

Management plans to raise additional capital through a combination of public equity or private offerings, debt financings, collaborations, strategic alliances, licensing arrangements and other marketing distribution arrangements. There can be no assurance that in the event the Company requires additional financing, such financing will be available at terms acceptable to us, if at all.

Failure to generate sufficient cash flows from operations, raise additional capital, and reduce discretionary spending should additional capital not become available could have a material adverse effect on the Company's ability to achieve its intended business objectives. These factors would have a material adverse effect on the Company's future financial results, financial position, and cash flows.

2. Summary of Significant Accounting Policies

Use of estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. On an ongoing basis, the Company evaluates its estimates, including, but not limited to, those related to manufacturing accruals, accrued research and development expenses, fair value of common stock, stock-based compensation, income tax uncertainties and the valuation of deferred tax assets. The Company bases its estimates on its historical experience and also on assumptions that it believes are reasonable; however, actual results could significantly differ from those estimates.

Unaudited pro forma financial information

Immediately prior to the completion of a Qualified IPO (as defined in Note 5 below) or upon the approval of the holders of at least 66 and 2/3 percent of the outstanding convertible preferred stock, all outstanding shares of convertible preferred stock will convert into common stock and non-voting common stock based on holders' election. Pro forma basic and diluted net loss per share has been computed to give effect to the conversion of all outstanding convertible preferred stock into shares of common stock. The unaudited pro forma net loss per share does not include the shares expected to be sold and related proceeds to be received from the Qualified IPO. The unaudited pro forma net loss per share for the year ended December 31, 2018 was computed using the weighted-average number of shares of common stock outstanding, including the pro forma effect of the conversion of all outstanding shares of convertible preferred stock, as if such conversion had occurred at the beginning of the period, or their issuance dates, if later.

Segments

The Company operates and manages its business as one reportable and operating segment, which is the business of developing engineered IgM antibodies for the treatment of cancer patients. The Company's chief executive officer, who is the chief operating decision maker, reviews financial information on an aggregate basis for allocating and evaluating financial performance. All long-lived assets are maintained in, and all losses are attributable to, the United States of America.

Cash, cash equivalents and restricted cash

The Company considers all highly liquid investments with original maturities of three months or less from the date of purchase to be cash and cash equivalents. Cash equivalents consist primarily of amounts invested in money market accounts and are stated at fair value. Restricted cash consists of a money market account that serves as collateral for a credit card agreement at one of the Company's financial institutions.

Fair value of financial instruments

The Company's financial assets and liabilities are accounted for in accordance with Financial Accounting Standards Board (FASB), Accounting Standards Codification (ASC), *Fair Value Measurements and Disclosures* (ASC 820). ASC 820 defines fair value as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. The fair value hierarchy of ASC 820 requires an entity to maximize the use of observable inputs when measuring fair value and classifies those inputs into three levels:

Level 1—Observable inputs, such as quoted prices in active markets.

Level 2—Inputs, other than the quoted prices in active markets, which are observable either directly or indirectly such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the instrument's anticipated life.

Level 3—Unobservable inputs in which there is little or no market data, which require the reporting entity to develop its own assumptions.

The Company primarily applies the market approach for recurring fair value measurements. The carrying values of the Company's financial instruments, including cash equivalents, accounts payable and accrued liabilities approximate fair value due to the short-term nature of these items.

Concentration of credit risk and other risks and uncertainties

Financial instruments that potentially subject the Company to a concentration of credit risk, consist primarily of cash and cash equivalents including money market funds. The Company maintains bank deposits in federally

insured financial institutions and these deposits may exceed federally insured limits. The Company is exposed to credit risk in the event of default by the financial institutions holding its cash and cash equivalents to the extent recorded in the balance sheet. The Company has not experienced any losses on its deposits of cash and cash equivalents.

The Company's future results of operations involve a number of other risks and uncertainties. Factors that could affect the Company's future operating results and cause actual results to vary materially from expectations include, but are not limited to, uncertainty of results of clinical trials and reaching milestones, uncertainty of regulatory approval of the Company's potential product candidates, uncertainty of market acceptance of the Company's product candidates, competition from substitute products and larger companies, securing and protecting proprietary technology, strategic relationships and dependence on key individuals or sole source suppliers.

The Company's product candidates require approvals from the U.S. Food and Drug Administration and comparable foreign regulatory agencies prior to commercial sales in their respective jurisdictions. There can be no assurance that any product candidates will receive the necessary approvals. If the Company was denied approval, approval was delayed or the Company was unable to maintain approval for any product candidate, it could have a materially adverse impact on the Company.

Property and equipment

Property and equipment are stated at cost, less accumulated depreciation and amortization. Depreciation is determined using the straight-line method over the estimated useful lives of the respective assets, generally three to five years. Leasehold improvements are amortized using the straight-line method over the shorter of the lease term or the estimated useful economic lives of the related assets.

Upon retirement or sale of the assets, the cost and related accumulated depreciation and amortization are removed from the balance sheet and the resulting gain or loss are recorded to the statements of operations. Repairs and maintenance are charged to operations as incurred.

Impairment of long-lived assets

Long-lived assets consist of property and equipment. The Company evaluates the carrying amount of its long-lived assets whenever events or changes in circumstances indicate that the assets may not be recoverable. An impairment loss would be recognized when estimated future cash flows expected to result from the use of the asset and its eventual disposition are less than the carrying amount of the asset. There was no impairment of long-lived assets in 2017 and 2018.

Convertible preferred stock

The Company records shares of convertible preferred stock at their respective fair values on the dates of issuance, net of issuance costs. The convertible preferred stock is recorded outside of stockholders' deficit on the balance sheets because the shares contain liquidation features that are not solely within the Company's control. The Company has elected not to adjust the carrying values of the convertible preferred stock to the liquidation preferences of such shares because of the uncertainty of whether or when such an event would occur. Subsequent adjustments to increase the carrying values to the liquidation preferences will be made only when it becomes probable that such a liquidation event will occur.

Research and development expenses

The Company expenses research and developments costs as they are incurred. Research and development expenses consist primarily of: (i) personnel-related expenses, including salaries, benefits and stock-based compensation expense, for personnel in the Company's research and development functions; (ii) fees paid to third parties such as contractors, consultants and contract research organizations (CROs), for animal studies and other costs related to preclinical testing; (iii) costs related to acquiring and manufacturing research and clinical trial materials, including under agreements with third parties such as contract manufacturing organizations (CMOs), and other vendors; (iv) costs related to the preparation of regulatory submissions; (v) expenses related to laboratory supplies and services; and (vi) depreciation of equipment and facilities expenses.

Accrued research and development expenses

The Company records accruals for estimated costs of research, preclinical, and manufacturing development, which are significant components of research and development expenses. A substantial portion of the Company's ongoing

research and development activities is conducted by third-party service providers, CROs and CMOs. The Company's contracts with the CROs and CMOs generally include fees such as initiation fees, reservation fees, costs related to animal studies and safety tests, verification run costs, materials and reagents expenses, taxes, etc. The financial terms of these contracts are subject to negotiations, which vary from contract to contract and may result in payment flows that do not match the periods over which materials or services are provided to the Company under such contracts. The Company accrues the costs incurred under agreements with these third parties based on estimates of actual work completed in accordance with the respective agreements. The Company determines the estimated costs through discussions with internal personnel and external service providers as to the progress, or stage of completion or actual timeline (start-date and end-date) of the services and the agreed-upon fees to be paid for such services. Through December 31, 2018, there have been no material differences from the Company's estimated accrued research and development expenses to actual expenses.

Patent costs

All patent-related costs incurred in connection with filing and prosecuting patent applications are expensed as incurred due to the uncertainty about the recovery of the expenditure. Amounts incurred are classified as general and administrative expenses in the accompanying statements of operations.

Stock-based compensation

The Company accounts for stock-based compensation by measuring and recognizing compensation expense for all share-based awards made to employees and directors based on estimated grant-date fair values. The Company uses the straight-line method to allocate compensation cost to reporting periods over the requisite service period, which is generally the vesting period, and estimates the fair value of share-based awards to employees and directors using the Black-Scholes option-pricing valuation model. The Company accounts for forfeitures as they occur.

Leases, rent expense, and sublease income

The Company records rent expense on a straight-line basis over the life of the lease. In cases where there is a free rent period or future fixed rent escalations, the Company records a deferred rent liability. Additionally, the receipt of any lease incentives is recorded as a deferred rent liability which is amortized over the lease term as a reduction of rent expense. Building improvements made with the lease incentives or tenant allowances are capitalized as leasehold improvements and included in property and equipment in the balance sheets. In addition, the Company subleases a portion of its office space to a third party. The Company recognizes rental income on a straight-line basis over the life of the sublease.

Income taxes

The Company accounts for income taxes using the liability method, whereby deferred tax asset and liability account balances are determined based on differences between the financial reporting and tax bases of assets and liabilities and are measured using the enacted tax rates and laws that will be in effect when the differences are expected to reverse. The Company provides a valuation allowance when it is more likely than not that some portion, or all of the Company's deferred tax assets will not be realized.

The Company accounts for income tax contingencies using a benefit recognition model. If it considers that a tax position is more likely than not to be sustained upon audit, based solely on the technical merits of the position, it recognizes the benefit. The Company measures the benefit by determining the amount that is greater than 50% likely of being realized upon settlement, presuming that the tax position is examined by the appropriate taxing authority that has full knowledge of all relevant information. The Company's policy is to recognize interest and penalties related to the underpayment of income taxes as a component of income tax expense or benefit. To date, there have been no interest or penalties charged in relation to the unrecognized tax benefits.

Comprehensive loss

There are no components of comprehensive loss for the Company. Thus, comprehensive loss is the same as the net loss for the periods presented.

Net loss per share

Basic net loss per share is calculated by dividing the net loss by the weighted-average number of shares of common stock outstanding during the period, without consideration for common stock equivalents. Diluted net loss per share is the same as basic net loss per share, since the effects of potentially dilutive securities are antidilutive given the net loss for each period presented.

Recent accounting pronouncements

The Company is an emerging growth company (EGC) as defined in the Jumpstart Our Business Startups Act of 2012 (JOBS Act) and may take advantage of reduced reporting requirements that are otherwise applicable to public companies. Section 107 of the JOBS Act exempts emerging growth companies from being required to comply with new or revised financial accounting standards until private companies are required to comply with those standards. The Company has elected to use the extended transition period for complying with new or revised accounting standards; and as a result of this election, its financial statements may not be comparable to companies that comply with public company effective dates. The JOBS Act also exempts the Company from having to provide an auditor attestation of internal controls over financial reporting under Sarbanes-Oxley Act Section 404(b).

The Company will remain an EGC until the earliest of (i) the last day of the fiscal year in which it has total annual gross revenues of $1.07 billion or more, (ii) the last day of the fiscal year following the fifth anniversary of the completion of its IPO, (iii) the date on which it has issued more than $1.0 billion in nonconvertible debt during the previous three years or (iv) the date on which it is deemed to be a large accelerated filer under the rules of the Securities and Exchange Commission (SEC), which generally is when it has more than $700 million in market value of its stock held by non-affiliates, has been a public company for at least 12 months and has filed one annual report on Form 10-K.

From time to time, new accounting pronouncements are issued by the FASB or other standard setting bodies and adopted by the Company as of the specified effective date. Unless otherwise discussed, the impact of recently issued standards that are not yet effective will not have a material impact on the Company's financial position or results of operations upon adoption.

In February 2016, the FASB issued Accounting Standards Update (ASU) 2016-02, *Leases* (ASC 842). ASC 842 supersedes the lease recognition requirements in ASC 840, *Leases*. ASC 842 clarifies the definition of a lease and requires lessees to recognize right-of-use assets and lease liabilities for all leases, including those classified as operating leases under previous lease accounting guidance. ASC 842 is effective for fiscal years beginning after December 15, 2018 and interim periods within those fiscal years. Early adoption is permitted. The Company is currently evaluating the impact that the adoption of ASC 842 will have on its financial statements and related disclosures. The Company expects adoption of ASC 842 will result in the recognition of a right-of-use asset for leased facilities and recognition of a liability for the lease payments remaining on the lease on its balance sheets. The Company does not expect a material change to the statements of operations or cash flows as a result of adopting ASC 842.

In June 2018, the FASB issued ASU 2018-07, *Improvements to Nonemployee Share-Based Payment Accounting*. This ASU simplifies the accounting for share-based awards to nonemployees by aligning it with the accounting for share-based awards to employees, with certain exceptions. This ASU is effective for annual periods beginning after December 15, 2019, and interim periods within annual periods beginning after December 15, 2020. Early adoption is permitted. The Company is currently assessing the impact of this standard on its financial statements and related disclosures.

New accounting pronouncements recently adopted

In May 2014, the FASB issued ASU 2014-09, *Revenue from Contracts with Customers*. The standard replaces existing revenue recognition standards and significantly expands the disclosure requirements for revenue arrangements. The standard must be adopted using either a modified retrospective approach or a full retrospective approach for all periods presented. The Company early adopted the standard as of January 1, 2017 under the full retrospective method. The Company does not have and has never had any contracts that are within the scope of ASU 2014-09 or its predecessor guidance, ASC 605, *Revenue Recognition*. Accordingly, adoption of the standard did not have an impact on the Company's financial position, results of operations or cash flows. However, the adoption of this standard will impact the accounting for potential future revenue transactions.

In January 2016, the FASB issued ASU 2016-01, *Recognition and Measurement of Financial Assets and Financial Liabilities*, which addresses certain aspects of recognition, measurement, presentation and disclosure of financial instruments. The Company early adopted this ASU as of January 1, 2017. The adoption of this ASU had an immaterial impact on the Company's financial statements.

In March 2016, the FASB issued ASU 2016-09, *Compensation—Stock Compensation: Improvements to Employee Share-Based Payment Accounting*. The areas affected by this ASU include accounting for income taxes, classification of excess tax benefits on the statement of cash flows, minimum statutory tax withholding requirements, and classification of employee taxes paid on the statement of cash flows when an employer withholds shares for tax-withholding purposes. In addition, under this guidance, an entity can make an accounting policy election to either estimate the number of awards that are expected to vest or account for forfeitures when they occur. The Company early adopted this ASU as of January 1, 2017 and has elected to account for forfeitures as they occur rather than apply an estimated forfeiture rate to stock-based compensation expense. The adoption of this ASU had an immaterial impact on the Company's financial statements.

In August 2016, the FASB issued ASU 2016-15, *Statement of Cash Flows: Classification of Certain Cash Receipts and Cash Payments* that modifies how certain cash receipts and cash payments are presented and classified in the statement of cash flows. The Company early adopted this ASU as of January 1, 2017. The adoption of this ASU had an immaterial impact on the Company's financial statements.

In November 2016, the FASB issued ASU 2016-18, *Statement of Cash Flows: Restricted Cash*, which requires that the statement of cash flows explain the change in the total amount of restricted cash during the period and other additional disclosures. The Company early adopted this ASU as of January 1, 2017. The adoption of this ASU had an immaterial impact on the Company's financial statements.

In July 2017, the FASB issued ASU 2017-11, *Earnings Per Share: Distinguishing Liabilities from Equity; Derivatives and Hedging, (Part I) Accounting for Certain Financial Instruments with Down Round Features, (Part II) Replacement of the Indefinite Deferral for Mandatorily Redeemable Financial Instruments of Certain Nonpublic Entities and Certain Mandatorily Redeemable Noncontrolling Interests with a Scope Exception*. This ASU allows for the exclusion of a down round feature, when evaluating whether or not an instrument or embedded feature requires derivative classification. The Company early adopted this ASU as of January 1, 2017. The adoption of this ASU had an immaterial impact on the Company's financial statements.

3. Balance Sheet Components

Property and equipment, net

Property and equipment, net consists of the following:

	DECEMBER 31,	
	2017	2018
	(in thousands)	
Laboratory equipment	$ 946	$1,987
Office equipment	95	127
Leasehold improvements	25	25
Property and equipment, gross	1,066	2,139
Less accumulated depreciation	(389)	(667)
Total property and equipment, net	$ 677	$1,472

Depreciation expense was approximately $0.2 million and $0.3 million for the years ended December 31, 2017 and 2018, respectively.

Accrued liabilities

Accrued liabilities consisted of the following:

	DECEMBER 31,	
	2017	2018
	(in thousands)	
Accrued research and development materials and services	$137	$2,395
Accrued professional services	145	563
Accrued compensation	42	177
Other	183	447
Total accrued liabilities	$507	$3,582

4. License Agreements

Adimab agreement

In January 2017, the Company entered into an option and license agreement with Adimab LLC (Adimab) pursuant to which the Company acquired a non-exclusive license to conduct research to evaluate certain Adimab antibodies in the context of the Company's proprietary platform constructs directed to selected targets, and an option to be granted a non-exclusive license to develop and commercialize antibody products incorporating or derived from such Adimab antibodies. The Company may exercise such option on a research program-by-research program basis during a specified period after the expiration of the discovery and evaluation term. The Company is obligated to pay license fees of up to approximately $1.0 million in the aggregate to Adimab under this agreement during the evaluation term. Upon exercise of the Company's option for an antibody covered by the agreement, it will be required to pay additional amounts aggregating up to either $7.4 million or $16.0 million per product incorporating each such antibody upon the option exercise and subsequent achievement of specified development and regulatory milestones, depending on the nature of the Adimab antibody incorporated in such product. In addition, the Company is obligated to pay Adimab either low or mid single-digit royalties based on net sales of each optioned antibody by the Company and its affiliates and sublicensees, subject to specified reductions. During the year ended December 31, 2017 and 2018, the Company recognized zero and $0.3 million, respectively, in research and development expenses incurred under this agreement in its statements of operations.

LakePharma agreement

In May 2018, the Company and LakePharma, Inc. (LakePharma) entered into an agreement for screening services aimed towards discovering certain antibodies. If the Company elects to enter into a license to develop and commercialize one or more of the antibodies discovered under this agreement, the Company will be obligated to make payments to LakePharma aggregating up to $10.3 million based on achieving specified development and regulatory milestones for each such antibody. During the year ended December 31, 2018, the Company recognized $0.3 million in research and development expenses incurred under this agreement in its statements of operations.

5. Capital Structure

Common stock

The Company is authorized to issue 30,264,511 shares of common stock, par value $0.01 per share. Common stockholders are entitled to dividends when and if declared by the Company's Board of Directors and after any convertible preferred share dividends are fully paid. The holder of each share of common stock is entitled to one vote. As of December 31, 2018, the Company has never declared a dividend.

Common stock reserved for future issuance, on an as converted basis, consists of the following:

	DECEMBER 31,	
	2017	2018
Preferred stock, issued and outstanding	6,384,797	9,501,620
Restricted stock, issued and outstanding	—	116,518
Stock options, issued and outstanding	768,763	1,523,285
Stock options, authorized for future issuance	760	456,818
Total	7,154,320	11,598,241

Convertible preferred stock

Convertible preferred stock consisted of the following:

	DECEMBER 31, 2017				
	AUTHORIZED SHARES	SHARES ISSUED AND OUTSTANDING	ORIGINAL ISSUE PRICE	CARRYING VALUE	AGGREGATE LIQUIDATION PREFERENCE
	(in thousands, except share and per share amounts)				
Series A convertible preferred stock	401,004	401,004	$ 3.3042	$ 1,325	$ 1,325
Series B convertible preferred stock	9,100,620	5,983,793	$ 6.6084	39,458	39,543
Total	9,501,624	6,384,797		$ 40,783	$ 40,868

	DECEMBER 31, 2018				
	AUTHORIZED SHARES	SHARES ISSUED AND OUTSTANDING	ORIGINAL ISSUE PRICE	CARRYING VALUE	AGGREGATE LIQUIDATION PREFERENCE
	(in thousands, except share and per share amounts)				
Series A convertible preferred stock	401,004	401,004	$ 3.3042	$ 1,325	$ 1,325
Series B convertible preferred stock	9,100,620	9,100,616	$ 6.6084	59,592	60,141
Total	9,501,624	9,501,620		$ 60,917	$ 61,466

During 2017, the Company issued 1,210,580 shares of Series B convertible preferred stock for proceeds of $8.0 million.

During 2018, the Company issued 3,116,823 shares of Series B convertible preferred stock for proceeds of $20.1 million, net of issuance costs.

In October 2018, the Company exchanged its existing common shares into 438,074 shares of common stock, 401,004 shares of Series A convertible preferred stock and 9,100,616 shares of Series B convertible preferred stock. All of the share information referenced throughout the financial statements and notes to the financial statements have been retroactively adjusted to reflect the change in capital structure. As a result of this change in capital structure, there was no additional stock-based compensation expense recorded.

As of December 31, 2018, the holders of the convertible preferred stock had the following rights and preferences:

Voting rights

Each share of convertible preferred stock has a number of votes equal to the number of shares of common stock into which it is convertible. The holders of the convertible preferred stock shall vote together with the holders of common stock as a single class upon any matter submitted to stockholders for a vote or written consent.

Convertible preferred stock holders are entitled to vote in the election of board members based on the conversion of each preferred stock to common stock. The approval of the holders of (i) a majority of the voting power of the outstanding shares of convertible preferred stock, voting together as a single class and on an as-converted to common stock basis and (ii) a majority of the voting power of the outstanding shares of Series B convertible preferred stock, voting together as a single class on an as-converted-to-common-stock basis are required in order to take the following actions: amend or repeal any provisions in the charter or bylaws if it would adversely impact the convertible preferred stock holders, authorize, issue or obligate the issuance of options or shares (or securities convertible or exchangeable for options or shares) of any class superior to or on a parity with the convertible preferred stock, reclassify any common stock into shares having rights superior to or on a parity with the convertible preferred stock, increase the authorized number of shares of preferred stock, reduce the authorized number of members of the board of directors below three, and create or hold capital stock in any subsidiary not wholly owned by the Company, dispose of any capital stock of any subsidiary or permit any subsidiary to dispose of all or substantially all of the assets of such subsidiary.

Dividends

Holders of convertible preferred stock are entitled, when and as declared by the Company's Board of Directors, to receive non-cumulative dividends that accrue at an annual rate of $0.26 per share of Series A convertible preferred stock and $0.53 per share of Series B convertible preferred stock. These convertible preferred stock dividends are payable in preference and priority to any payment of any dividend on shares of common stock.

Conversion

Any share of convertible preferred stock may, at the option of the holder, be converted at any time into such number of fully-paid as is determined by dividing $3.30 and $6.61 for the Series A convertible preferred stock and Series B convertible preferred stock, respectively, by the conversion price for such series in effect at the time of conversion. As of December 31, 2017 and 2018, the Series A and Series B conversion prices equaled $3.30 and $6.61, respectively, and thus were convertible into common stock at a one-for-one basis. The conversion price for each series of convertible preferred stock is subject to an adjustment in the event of stock split, combination, common stock dividend or distribution, reclassification, exchange, substitution, or reorganization. The shares of convertible preferred stock are subject to anti-dilution protection if there are subsequent issuances of common stock without consideration or for a consideration per share less than the Series A conversion price in the case of Series A convertible preferred stock and the Series B conversion price in the case of Series B convertible preferred stock, in each case in effect immediately prior to the issuance of such additional share.

Each share of convertible preferred stock is automatically converted into common stock upon the earlier of the event of (i) the approval of at least 66 and 2/3 percent of the outstanding convertible preferred stock, or (ii) closing of an initial public offering where the price per share is not less than $14.54, adjusted for any stock splits, combinations, consolidations, or stock distributions or dividends, and the gross proceeds to the Company are not less than $20.0 million (Qualified IPO).

Liquidation

Upon any liquidation, dissolution, or winding up of the Company, whether voluntary or involuntary, before any distribution or payment shall be made to the holders of any common stock, the holders of convertible preferred stock shall be entitled to be paid out of the assets of the Company legally available for distribution for each share of convertible preferred stock held by them, an amount per share of convertible preferred stock equal to $3.30 per share and $6.61 per share, respectively, for each share of Series A convertible preferred stock and Series B convertible preferred stock held by them, as adjusted for stock splits, combinations, consolidations, or stock distributions or dividends, plus all declared and unpaid dividends thereon. If, upon any such liquidation event, the assets of the Company are insufficient to make payment in full to all holders of convertible preferred stock of the liquidation preference, then such assets shall be distributed among the holders of the convertible preferred stock at the time outstanding, ratably in proportion to the full amounts to which they would otherwise be respectively entitled. After completion of payment to the convertible preferred stock holders noted above, common stock holders will receive $0.01 per share for each share of common stock, or if the assets and funds are insufficient to permit the payment to such holders of the full aforesaid amount, then the entire assets and funds of the Company legally available for distribution shall be distributed ratably. Any remaining assets and funds, after payment of the preferential aforementioned amounts to the preferred and common, if the assets and funds are insufficient to permit the payment to such holders of the full aforesaid amount, then the entire assets and funds of the Company legally

available for distribution shall be distributed ratably. Any remaining assets and funds, after payment of the preferential aforementioned amounts to the preferred and common, shall be distributed ratably among holders of common stock and preferred stock in proportion to the number of common stock that would be held by each shareholder if all convertible preferred stock were converted into common stock immediately prior to liquidation, dissolution, or winding up, utilizing the then conversion price. As of December 31, 2018, in the event of any liquidation, dissolution, winding up of the Company, the holders of Series A convertible preferred stock were entitled to receive an amount equal to $3.30 per share and the holders of Series B convertible preferred stock were entitled to receive an amount equal to $6.61 per share.

A liquidation transaction is deemed to occur if the Company (i) merges or consolidates with any other company, and the stockholders of the Company no longer own at least 50% of the voting power of the surviving entity, (ii) sells all or substantially all of the Company's assets, and (iii) sells or disposes of one or more subsidiaries holding substantially all of the Company's assets, to a party not owned by the Company.

Redemption

The convertible preferred stock is not redeemable.

6. Stock-Based Compensation

In 2010, the Company's Board of Directors adopted the 2010 Stock Plan, as amended and restated (2010 Plan), which provided for the granting of stock options to employees, consultants, and outside directors of the Company. In 2018, the Company's Board of Directors adopted the 2018 Omnibus Incentive Plan (2018 Plan), which provided for the granting of stock-based awards including stock options and restricted stock awards to employees, consultants and outside directors of the Company.

Stock options

The amount, terms of grants, and exercisability provisions are determined and set by the Company's Board of Directors. The term of the options may be up to 10 years, and options are exercisable in cash or as otherwise determined by the Company's Board of Directors. Options granted to new employees generally vest over four years at a rate of 25% on the first anniversary of the date of grant and monthly thereafter over the next three years. Options granted to existing employees generally vest monthly over four years.

As of December 31, 2017 and 2018, the Company had authorized 769,538 shares for grant under the 2010 Plan. As of December 31, 2018, the Company had authorized 1,210,580 shares for grant under the 2018 Plan.

The following table summarizes stock option activity under the 2010 Plan and 2018 Plan:

		OUTSTANDING OPTIONS			
	SHARES AVAILABLE TO GRANT	NUMBER OF OPTIONS	WEIGHTED-AVERAGE EXERCISE PRICE	WEIGHTED-AVERAGE REMAINING CONTRACTUAL TERM (YEARS)	AGGREGATE INTRINSIC VALUE (in thousands)
Balance at December 31, 2016	151,638	650,545	$ 0.93		
Addition (reduction)—Option pool	(29,445)	—	—		
Granted	(124,837)	124,837	$ 1.00		
Exercised	—	(3,215)	$ 0.93		
Forfeited	3,404	(3,404)	$ 0.93		
Balance at December 31, 2017	760	768,763	$ 0.94	6.9	$ 195
Addition—Option pool	1,210,580				
Granted	(754,522)	754,522	$ 1.39		
Exercised	—	—	—		
Forfeited	—	—	—		
Balance at December 31, 2018	456,818	1,523,285	$ 1.16	7.9	$ 347
Exercisable at December 31, 2018		779,168	$ 0.99	6.2	$ 309

As of December 31, 2017 and 2018, there was approximately $0.1 million and $0.8 million, respectively, of unrecognized stock-based compensation, which the Company expects to recognize over a weighted-average period of 2.1 and 2.9 years.

The aggregate intrinsic values of options outstanding and exercisable were calculated as the difference between the exercise price of the options and the estimated fair value of the Company's common stock as determined by the Company's Board of Directors as of December 31, 2017 and 2018.

Determination of fair value

The fair value of each employee option grant was estimated on the date of grant using the Black-Scholes option-pricing model with the following weighted-average assumptions:

	YEAR ENDED DECEMBER 31,	
	2017	2018
Expected term (years)	6.0	5.9
Expected volatility	73.2%	77.5%
Risk-free interest rate	2.1%	2.9%
Expected dividends	—%	—%

Expected term—The expected term of the options represents the average period the stock options are expected to remain outstanding. As the Company does not have sufficient historical information to develop reasonable expectations about future exercise patterns and post-vesting employment termination behavior, the expected term of options granted is derived from the average midpoint between the weighted-average vesting and the contractual term, also known as the simplified method.

Expected volatility—Since the Company is private and does not have any trading history for its common stock, the expected volatility is based on the historical volatilities of the common stock of comparable publicly traded companies. The Company selected companies with comparable characteristics, including enterprise value, risk profiles, position within the industry, and with historical share price information, where applicable, sufficient to meet the expected life of the Company's stock-based awards.

Risk-free interest rate—The risk-free interest rate is based on the yield of U.S. Treasury notes as of the grant date with terms commensurate with the expected term of the option.

Expected dividends—The expected dividends assumption is based on the Company's expectation of not paying dividends in the foreseeable future; therefore, the Company used an expected dividend yield of zero.

For the years ended December 31, 2017 and 2018, the weighted-average fair value of options granted was $0.66 and $0.93 per share, respectively. The total fair value of options that vested during the years ended December 31, 2017 and 2018 was approximately $0.1 million and $0.2 million, respectively.

Restricted stock

During 2018, the Company issued 116,518 shares of common stock to an executive officer under a restricted stock agreement at a grant date fair value of $1.39 per share that vests over two years. The unvested shares are subject to forfeiture in the case that the grantee's service terminates prior to vesting of the restricted stock. At December 31, 2018, no shares of the restricted stock agreement had vested and the related stock-based compensation was immaterial. As of December 31, 2018, there was $0.2 million of unrecognized stock-based compensation related to restricted stock, which the Company expects to recognize over a weighted-average period of 1.6 years.

Total stock-based compensation

Total stock-based compensation expense related to the 2010 Plan and 2018 Plan was recorded in the statements of operations and allocated as follows:

	YEAR ENDED DECEMBER 31,	
	2017	2018
	(in thousands)	
Research and development	$ 35	$ 51
General and administrative	58	132
Total	$ 93	$ 183

7. Income Taxes

Income taxes

The Company had no income tax expense for the years ended December 31, 2017 and 2018. The following is a reconciliation of the statutory federal income tax rate to the Company's effective tax rate:

	YEAR ENDED DECEMBER 31,	
	2017	2018
Federal tax (benefit) at statutory rate	34.0%	21.0%
State tax (benefit), net of federal benefit	4.9	5.5
Permanent differences and other	(1.5)	(0.8)
Research and development credits	5.3	5.4
Tax Cuts and Jobs Act impact	(4.3)	0.0
Change in valuation allowance	(38.4)	(31.1)
Effective income tax rate	—%	—%

Deferred tax assets and liabilities consist of the following:

	DECEMBER 31,	
	2017	2018
	(in thousands)	
Deferred tax assets:		
Net operating loss carryforwards	$ 1,331	$ 7,076
Accrued liabilities and reserves	168	457
Stock-based compensation	122	150
Intangible assets	—	9,040
Research and development credits	1,807	3,023
Total deferred tax assets	3,428	19,746
Deferred tax liabilities:		
Property and equipment	(124)	(109)
Total deferred tax liabilities	(124)	(109)
Valuation allowance	(3,304)	(19,637)
Net deferred tax assets	$ —	$ —

The provisions of ASC Topic 740, *Accounting for Income Taxes* (ASC 740), require an assessment of both positive and negative evidence when determining whether it is more likely than not that deferred tax assets are recoverable. For the years ended December 31, 2017 and 2018, based on all available objective evidence, including the existence of cumulative losses, the Company determined that it was not more likely than not that the net deferred tax assets were fully realizable. Accordingly, the Company established a full valuation allowance against its deferred tax assets. The Company intends to maintain a full valuation allowance on net deferred tax assets until sufficient positive evidence exists to support reversal of the valuation allowance. During the years ended December 31, 2017 and 2018, the valuation allowance decreased by $9.2 million and increased by $16.3 million, respectively.

At December 31, 2018, the Company had net operating loss carryforwards available to reduce future taxable income, if any, for federal and California income tax purposes of approximately $25.8 million and $23.5 million, respectively. Of the federal net operating loss carryforwards at December 31, 2018, $4.3 million and $21.5 million can be carried forward indefinitely, subject to an annual limitation of 80% of taxable income. The California net operating loss carryforward begins expiring in 2036.

At December 31, 2018, the Company also had federal and California research and development tax credit carryforwards of $2.5 million and $1.9 million, respectively, available to offset future income tax, if any. The federal credit carryforwards begins expiring in 2030, and the California credits can be carried forward indefinitely.

Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, if a corporation undergoes an “ownership change,” the ability to use its pre-change net operating loss carryforwards and other pre-change attributes, such as research tax credits, to offset its post-change income may be limited. In general, an “ownership change” will occur if there is a cumulative change in the Company’s ownership by “5-percent shareholders” that exceeds 50 percentage points over a rolling three-year period. Similar rules may apply under state tax laws. Therefore, certain of the Company’s carryforward tax attributes may be subject to an annual limitation regarding their utilization against taxable income in future periods. The Company believes that, with its initial public offering and other transactions that have occurred in the past, the Company may have triggered or could trigger an “ownership change” limitation. The Company plans to complete a Section 382 analysis, and its ability to use the remaining net loss operating carryforwards and other tax attributes to offset its future taxable income may be limited if the Company has experienced an ownership change in connection with prior changes in stock ownership, including its initial public offering.

Uncertain tax positions

The Company adopted the provisions of ASC 740, which requires companies to determine whether it is “more likely than not” that a tax position will be sustained upon examination by the appropriate taxing authorities before any tax benefit can be recorded in the financial statements. It also provides guidance on the recognition, measurement, classification and interest and penalties related to uncertain tax positions.

The following table summarizes the activity related to the Company’s gross unrecognized tax benefits:

	DECEMBER 31,	
	2017	2018
	(in thousands)	
Beginning balance	$440	$ 665
Additions for tax positions related to current year	225	448
Ending balance	$665	$1,113

The unrecognized tax benefits, if recognized, would not affect the effective income tax rate due to the valuation allowance that currently offsets deferred tax assets. Interest and penalties were zero. The Company does not expect the unrecognized tax benefits to change significantly over the next 12 months.

The Company files federal and California income tax returns. All periods since inception are subject to examination by federal and state authorities, where applicable. There are currently no pending income tax examinations.

Impact of the Tax Cuts and Jobs Act

The U.S. government enacted the Tax Cuts and Jobs Act (Tax Act) on December 22, 2017. The Tax Act incorporates broad and complex changes to the U.S. tax code. A main provision of the Tax Act reduces the corporate federal tax rate from a maximum rate of 34% to a flat rate of 21%, effective January 1, 2018. The Tax Act also contains a number of provisions that may impact the Company in future years.

As a result of the reduction in the corporate federal tax rate, the Company has remeasured its U.S. deferred tax assets and liabilities as of December 31, 2017 to reflect the lower rate expected to apply when these temporary differences reverse. The remeasurement resulted in a reduction in deferred tax assets of $0.5 million and a corresponding decrease in the valuation allowance.

As of December 31, 2018, the Company has completed its accounting for all of the enactment-date income tax effects of the Tax Act based upon the Company's current interpretation of the Tax Act. The Company will continue to monitor ongoing guidance in this area, as the U.S. Treasury Department, the Internal Revenue Service (IRS), and other standard-setting bodies could interpret or issue guidance on how provisions of the Tax Act will be applied or otherwise administered that is different from the Company's interpretation.

8. Commitments and Contingencies

Operating leases

The Company leases its headquarters with its main offices and laboratory facilities in Mountain View, California under a sublease agreement that ends in October 2019. Rent expense for the years ended December 31, 2017 and 2018, was $0.8 million and $0.7 million, respectively. Future minimum lease payments under this lease are $0.7 million in 2019. The Company entered into a new lease agreement in February 2019 as discussed further in Note 11.

In February 2017, the Company entered into an agreement wherein it subleases a portion of its office space to a third party through October 2019. For each of the years ended December 31, 2017 and 2018, the Company recognized $0.1 million as other income, net in the statements of operations in connection with this sublease.

Employee benefit plan

The Company sponsors a 401(k) defined contribution plan for its employees. This plan provides for tax-deferred salary deductions for all employees. Employee contributions are voluntary. Employees may contribute up to 100% of their annual compensation to this plan, as limited by an annual maximum amount as determined by the IRS.

Legal proceedings

The Company, from time to time, may be party to litigation arising in the ordinary course of business. The Company was not subject to any material legal proceedings during the years ended December 31, 2017 and 2018, and, to the best of its knowledge, no material legal proceedings are currently pending or threatened.

Indemnification

In the ordinary course of business, the Company enters into agreements that may include indemnification provisions. Pursuant to such agreements, the Company may indemnify, hold harmless and defend an indemnified party for losses suffered or incurred by the indemnified party. Some of the provisions will limit losses to those arising from third party actions. In some cases, the indemnification will continue after the termination of the agreement. The maximum potential amount of future payments the Company could be required to make under these provisions is not determinable. The Company has never incurred material costs to defend lawsuits or settle claims related to these indemnification provisions. The Company has also entered into indemnification agreements with its directors and officers that may require the Company to indemnify its directors and officers against liabilities that may arise by reason of their status or service as directors or officers to the fullest extent permitted by Delaware corporate law. The Company currently has directors' and officers' insurance.

9. Related Party Transactions with its Majority Investor

The following are transactions that occurred between the Company and the Majority Investor, as defined in Note 1.

Lease guarantee

In February 2017, the Majority Investor entered into an agreement to lend its credit and creditworthiness to the Company by providing a guarantee to allow the Company to enter into the lease agreement for its facilities in Mountain View, California in exchange for a guarantee commission of 1.5% per annum of the outstanding balance of the drawdowns on the letter of credit to this lease. The Company has not drawn on the guarantee nor incurred any related commission expense through December 31, 2018.

2017 Series B issuance

In 2017, the Company issued 1,210,580 shares of Series B convertible preferred stock to the Majority Investor for proceeds of $8.0 million.

Share repurchase

In December 2017, the Company repurchased 62,044 shares of Series A convertible preferred stock and 2,510 shares of Series B convertible preferred stock from the Company's minority stockholders at the original issue price of $3.30 and $6.61 per share, respectively. As the share repurchase was settled by the Majority Investor on behalf of the Company, the Majority Investor's payment to the minority stockholders of $0.2 million was treated as a capital contribution to the Company.

Related party equity transaction

In December 2017, in exchange for all of the Company's intellectual property rights (IP Rights), the Majority Investor issued a note receivable of $34.6 million to the Company, which accrued interest at 4.8% on an annual basis, with principal and interest payments starting in 2020, and had a term of 8 years. In August 2018, the Majority Investor returned the IP Rights to the Company and the note receivable and accrued interest due were cancelled.

2018 Series B issuance

In 2018, the Company issued 3,116,823 shares of Series B convertible preferred stock to the Majority Investor for proceeds of $20.1 million, net of issuance costs of $0.5 million, including a note receivable in the amount of $2.5 million.

In accordance with ASC, Topic 310-10, *Receivables*, specifically ASC 310-S99-2 and S-99-3, the Company records the receivables described above from the Majority Investor as contra-equity (rather than as an asset).

Related party loan

During 2018, the Company issued an unsecured promissory note to the Majority Investor for proceeds of $5.0 million, which is recorded on the accompanying balance sheets as a loan from a related party, along with accrued interest on these notes as of December 31, 2018. The promissory note accrues interest at 3.6% per annum and matures on December 31, 2019.

10. Net Loss and Unaudited Pro Forma Net Loss Per Share

The following table sets forth the computation of the basic and diluted net loss per share:

	YEAR ENDED DECEMBER 31,	
	2017	2018
	(in thousands, except share and per share amounts)	
Numerator:		
Net loss	$ (11,054)	$ (22,711)
Denominator:		
Weighted-average common shares outstanding used to compute net loss per share, basic and diluted	437,942	483,074
Net loss per share, basic and diluted	$ (25.24)	$ (51.84)

Since the Company was in a loss position for all periods presented, basic net loss per share is the same as diluted net loss per share for all periods as the inclusion of all common stock equivalents outstanding would have been anti-dilutive. Potentially dilutive securities that were not included in the diluted per share calculations because they would be anti-dilutive were as follows:

	DECEMBER 31,	
	2017	2018
Series A convertible preferred stock	401,004	401,004
Series B convertible preferred stock	5,983,793	9,100,616
Restricted stock	—	116,518
Stock options	768,763	1,523,285
Total	7,153,560	11,141,423

The following table sets forth the computation of the Company's unaudited pro forma basic and diluted net loss per share:

	YEAR ENDED DECEMBER 31, 2018 (in thousands, except share and per share amounts)
Numerator:	
Net loss	$ (22,711)
Denominator:	
Common weighted-average common shares outstanding used to compute net loss per share, basic and diluted	438,074
Pro forma adjustment to reflect assumed conversion of preferred stock, basic and diluted	6,956,926
Common weighted-average common shares outstanding used to compute pro forma net loss per share, basic and diluted	7,395,000
Pro forma net loss per share, basic and diluted	$ (3.07)

11. Subsequent Events

The Company evaluated subsequent events through June 28, 2019, the date on which the accompanying financial statements were issued, and through August 30, 2019, as it relates to the Reverse Stock Split.

In 2019, the Company received $15.0 million in gross proceeds pursuant to an unsecured promissory note with the Majority Investor bearing interest at a rate of 3.6% per year with a maturity of December 31, 2019.

In February 2019, the Company increased the number of shares of common stock authorized for issuance under the 2018 Plan from 1.2 million shares to 1.6 million shares. In February and March 2019, the Company granted a total of 0.6 million stock options under the 2018 Plan.

In February 2019, the Company entered into a lease agreement for office, laboratory and manufacturing space in Mountain View, California, which commenced on May 1, 2019 and expires six years from the commencement date. The total minimum lease payments throughout the lease term are $11.4 million.

In June 2019, the Company entered into an agreement to issue and sell shares of its Series C convertible preferred stock for gross proceeds of approximately $102.0 million, which includes $20.0 million in settlement of all of the amounts outstanding under the unsecured promissory note with the Majority Investor.

IGM BIOSCIENCES, INC.

Condensed Balance Sheets
(unaudited)
(in thousands, except share and per share amounts)

	DECEMBER 31, 2018	JUNE 30, 2019	PRO FORMA AS OF JUNE 30, 2019
Assets			
Current assets:			
Cash and cash equivalents	$ 1,887	$ 42,672	$ 82,672
Prepaid expenses and other current assets	485	1,238	1,238
Income tax receivable	35	35	35
Total current assets	2,407	43,945	83,945
Property and equipment, net	1,472	2,386	2,386
Restricted cash	100	100	100
Other assets	—	2,086	2,000
Total assets	$ 3,979	$ 48,517	$ 88,431
Liabilities, convertible preferred stock and stockholders' (deficit) equity			
Current liabilities:			
Accounts payable	$ 164	$ 2,134	$ 2,134
Accrued liabilities	3,582	4,048	4,048
Deferred rent	108	35	35
Related party loan	5,027	297	297
Other current liabilities	9	—	—
Total current liabilities	8,890	6,514	6,514
Deferred rent, non-current	—	187	187
Total liabilities	8,890	6,701	6,701
Commitments and contingencies (Note 7)			
Convertible preferred stock, $0.01 par value; 9,501,624 and 17,219,074 shares authorized as of December 31, 2018 and June 30, 2019, respectively; 9,501,620 and 14,192,617 shares issued and outstanding as of December 31, 2018 and June 30, 2019, respectively; aggregate liquidation preference of $61,466 and $123,466 as of December 31, 2018 and June 30, 2019, respectively; 0 shares authorized, issued and outstanding, pro forma	60,917	122,785	—
Stockholders' (deficit) equity:			
Common stock, $0.01 par value; 30,264,511 shares authorized as of December 31, 2018 and 33,669,269 shares authorized as of June 30, 2019; 438,074 shares issued and outstanding as of December 31, 2018 and 618,861 shares issued and outstanding as of June 30, 2019; 33,669,269 shares authorized, 11,406,722 shares issued and outstanding, pro forma	4	6	114
Non-voting common stock, $0.01 par value; 0 shares and 4,161,370 shares authorized as of December 31, 2018 and June 30, 2019, respectively; 0 shares issued and outstanding as of December 31, 2018 and June 30, 2019; 6,431,205 shares issued and outstanding, pro forma	—	—	64
Additional paid-in capital	751	1,243	163,770
Due from related party	(2,511)	—	—
Accumulated deficit	(64,072)	(82,218)	(82,218)
Total stockholders' (deficit) equity	(65,828)	(80,969)	81,730
Total liabilities, convertible preferred stock and stockholders' deficit	$ 3,979	$ 48,517	$ 88,431

The accompanying notes are an integral part of these condensed financial statements.

IGM BIOSCIENCES, INC.

Condensed Statements of Operations
(unaudited)
(in thousands, except share and per share amounts)

	SIX MONTHS ENDED JUNE 30,	
	2018	2019
Operating expenses:		
Research and development	$ 5,976	$ 14,215
General and administrative	1,224	3,673
Total operating expenses	7,200	17,888
Loss from operations	(7,200)	(17,888)
Other income (expense), net	59	(258)
Net loss	$ (7,141)	$ (18,146)
Net loss per share, basic and diluted	$ (16.30)	(36.17)
Weighted-average common shares outstanding, basic and diluted	438,074	501,716
Pro forma net loss per share, basic and diluted		$ (1.80)
Pro forma weighted-average common and non-voting common shares outstanding, basic and diluted		10,081,088

The accompanying notes are an integral part of these condensed financial statements.

IGM BIOSCIENCES, INC.

Condensed Statements of Convertible Preferred Stock and Stockholders' Deficit
(unaudited)
(in thousands, except share and per share amounts)

	CONVERTIBLE PREFERRED STOCK		COMMON STOCK		ADDITIONAL PAID-IN CAPITAL	DUE TO (FROM) RELATED PARTY	ACCUMULATED DEFICIT	TOTAL STOCKHOLDERS' DEFICIT
	SHARES	AMOUNT	SHARES	AMOUNT				
Balance at December 31, 2017	6,384,797	$40,783	438,074	$ 4	$ 35,479	$(34,625)	$ (41,361)	$ (40,503)
Related party equity transaction	—	—	—	—	835	3,041	—	3,876
Stock-based compensation expense	—	—	—	—	44	—	—	44
Net loss	—	—	—	—	—	—	(7,141)	(7,141)
Balance at June 30, 2018	6,384,797	$40,783	438,074	$ 4	$ 36,358	$(31,584)	$ (48,502)	$ (43,724)

	CONVERTIBLE PREFERRED STOCK		COMMON STOCK		ADDITIONAL PAID-IN CAPITAL	DUE TO (FROM) RELATED PARTY	ACCUMULATED DEFICIT	TOTAL STOCKHOLDERS' DEFICIT
	SHARES	AMOUNT	SHARES	AMOUNT				
Balance at December 31, 2018	9,501,620	$ 60,917	438,074	$ 4	$ 751	$ (2,511)	$ (64,072)	$ (65,828)
Issuance of Series C convertible preferred stock, net of issuance costs of $0.1 million	4,690,997	61,868	—	—	—	—	—	—
Exercise of stock options	—	—	173,222	2	162			164
Issuance of common stock	—	—	7,565	—	11	—	—	11
Related party equity transaction	—	—	—	—	16	2,511	—	2,527
Capital contribution from related party	—	—	—	—	23	—	—	23
Stock-based compensation expense	—	—	—	—	280	—	—	280
Net loss	—	—	—	—	—	—	(18,146)	(18,146)
Balance at June 30, 2019	14,192,617	$122,785	618,861	$ 6	$ 1,243	$ —	$ (82,218)	$ (80,969)

The accompanying notes are an integral part of these condensed financial statements.

IGM BIOSCIENCES, INC.

Condensed Statements of Cash Flows
(in thousands)
(unaudited)

	SIX MONTHS ENDED JUNE 30,	
	2018	2019
Operating activities		
Net loss	$(7,141)	$(18,146)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation	120	259
Stock-based compensation expense	44	280
Accrued interest on related party loan	—	270
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	(647)	(753)
Other assets	(1)	—
Income tax receivable	(35)	—
Accounts payable	(209)	1,421
Accrued liabilities	94	(1,105)
Income tax payable	(128)	—
Deferred rent	(59)	114
Other current liabilities	9	(9)
Other long-term liabilities	(9)	—
Net cash used in operating activities	(7,962)	(17,669)
Investing activities		
Purchase of property and equipment	(321)	(1,148)
Net cash used in investing activities	(321)	(1,148)
Financing activities		
Proceeds from new investors for issuance of Series C convertible preferred stock	—	32,000
Proceeds from related party for issuance of Series C convertible preferred stock	—	10,000
Proceeds from related party capital contribution	3,876	2,549
Proceeds from loan from a related party	5,000	15,000
Proceeds from common stock issuance	—	11
Proceeds from the exercise of stock options	—	164
Payment of deferred offering costs	—	(122)
Net cash provided by financing activities	8,876	59,602
Net increase in cash, cash equivalents, and restricted cash	593	40,785
Cash, cash equivalents, and restricted cash at beginning of year	482	1,987
Cash, cash equivalents, and restricted cash at end of year	$ 1,075	$ 42,772
Cash, cash equivalents, and restricted cash at end of year		
Cash and cash equivalents	1,025	42,672
Restricted cash	50	100
Cash, cash equivalents, and restricted cash at end of year	$ 1,075	$ 42,772
Supplemental disclosure of cash flow information		
Cash paid for income taxes	$ (166)	$ —
Supplemental disclosure of non-cash investing and financing activities		
Acquisition of property and equipment in accounts payable and accrued liabilities	$ —	$ 334
Deferred offering costs included in accounts payable and accrued liabilities	$ —	$ 1,879
Series C convertible preferred stock offering costs included in accounts payable and accrued liabilities	$ —	$ 218
Settlement of related party loan through issuance of Series C convertible preferred stock	$ —	$ 20,000

The accompanying notes are an integral part of these condensed financial statements.

IGM BIOSCIENCES, INC.

Notes to Condensed Financial Statements

(unaudited)

1. Organization

Organization

IGM Biosciences, Inc., (the Company), was incorporated in the state of Delaware in August 1993 under the name Palingen, Inc. and the name was subsequently changed to IGM Biosciences, Inc. in 2010. The Company's headquarters are in Mountain View, California. IGM Biosciences, Inc. is a biotechnology company engaged in the development of IgM antibody therapeutics for the treatment of cancer.

In December 2017, the Company established a holding company (Holdco); in April 2019, Holdco was subsequently dissolved and equity interests in Holdco were converted into equity interests in the Company. The information included in these financial statements is consistently presented as if it is that of the Company, even during the interim period when investors held their equity interests in Holdco. For the periods ended December 31, 2017 and 2018 and the six months ended June 30, 2019, Haldor Topsøe Holding A/S was the majority investor in the Company either through its direct equity ownership or indirectly as the majority owner of Holdco. Haldor Topsøe Holding A/S and Holdco represent a combined entity (Majority Investor) as referenced herein.

Reverse Stock Split

In August 2019, the Company filed an amendment to the Company's amended and restated certificate of incorporation to effect a reverse split of shares of the Company's common stock, non-voting common stock and convertible preferred stock, each on a 6.6084-for-1 basis (Reverse Stock Split). The Reverse Stock Split also applied to any outstanding securities or rights convertible into, or exchangeable or exercisable for, common stock, non-voting common stock or convertible preferred stock. The par value of the common stock was not adjusted as a result of the Reverse Stock Split. All references to common stock, non-voting common stock, restricted stock, options to purchase common stock, share data, per share data, convertible preferred stock and related information contained in the condensed financial statements and related footnotes have been retrospectively adjusted to reflect the effect of the Reverse Stock Split for all periods presented. The Reverse Stock Split was effected on August 30, 2019.

Liquidity and capital resources

The Company has incurred net operating losses and negative cash flows from operations since its inception and had an accumulated deficit of $82.2 million at June 30, 2019. As of June 30, 2019, the Company had cash and cash equivalents of $42.7 million. In June 2019, the Company entered into an agreement to issue and sell $102.0 million of shares of its Series C convertible preferred stock, which includes $20.0 million in settlement of all of the principal amounts outstanding under its promissory note. As of June 30, 2019, $62.0 million of gross proceeds were received, which includes $20.0 million in settlement of all of the principal amounts outstanding under the Company's promissory note. In July 2019, the Company received the remaining gross proceeds of $40.0 million. Due to the additional financing, management believes that its existing financial resources are sufficient to continue operating activities at least one year past the issuance date of these financial statements. Future capital requirements will depend on many factors, including the timing and extent of spending on research and development and the market acceptance of the Company's products.

Management plans to raise additional capital through a combination of public equity or private offerings, debt financings, collaborations, strategic alliances, licensing arrangements and other marketing distribution arrangements. There can be no assurance that in the event the Company requires additional financing, such financing will be available at terms acceptable to the Company, if at all.

Failure to generate sufficient cash flows from operations, raise additional capital, and reduce discretionary spending should additional capital not become available could have a material adverse effect on the Company's ability to achieve its intended business objectives. These factors would have a material adverse effect on the Company's future financial results, financial position, and cash flows.

2. Summary of Significant Accounting Policies

Interim condensed financial statements

These interim condensed financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP) and applicable rules and regulations of the U.S. Securities and Exchange Commission (SEC) for interim reporting. As permitted under those rules and regulations, certain footnotes or other financial information normally included in financial statements prepared in accordance with U.S. GAAP have been condensed or omitted. The interim condensed financial statements have been prepared on the same basis as the annual financial statements and, in the opinion of management, reflect all adjustments, which include only normal, recurring adjustments that are necessary to present fairly the Company's results for the interim periods presented. The interim condensed balance sheet as of December 31, 2018, is derived from the Company's audited financial statements included elsewhere in this prospectus. The results of operations for the six months ended June 30, 2019, are not necessarily indicative of the results to be expected for the year ending December 31, 2019, or for any other future annual or interim period. These interim condensed financial statements should be read in conjunction with the Company's audited financial statements included elsewhere in this prospectus.

Use of estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. On an ongoing basis, the Company evaluates its estimates, including, but not limited to, those related to manufacturing accruals, accrued research and development expenses, fair value of common stock, stock-based compensation, income tax uncertainties and the valuation of deferred tax assets. The Company bases its estimates on its historical experience and also on assumptions that it believes are reasonable; however, actual results could significantly differ from those estimates.

Pro forma financial information

Pro forma financial information reflects (i) the issuance of 3,026,449 shares of the Company's Series C convertible preferred stock and related gross proceeds of $40.0 million subsequent to June 30, 2019 and (ii) the automatic conversion of all outstanding shares of the Company's convertible preferred stock, (including the shares referenced in (i)) into an aggregate of 10,787,861 shares of common stock and 6,431,205 shares of non-voting common stock as if such conversion had occurred on June 30, 2019. Pro forma basic and diluted net loss per share has been computed to give effect to the conversion of all outstanding convertible preferred stock into shares of common stock. The pro forma net loss per share does not include the shares expected to be sold and related proceeds to be received from this offering. The pro forma net loss per share for the six months ended June 30, 2019 was computed using the weighted-average number of shares of common stock outstanding, including the pro forma effect of the conversion of all outstanding shares of convertible preferred stock (excluding the 3,026,449 shares of Series C convertible preferred stock described in (i) above), as if such conversion had occurred at January 1, 2019, or their issuance dates, if later.

Segments

The Company operates and manages its business as one reportable and operating segment, which is the business of developing engineered IgM antibodies for the treatment of cancer patients. The Company's chief executive officer, who is the chief operating decision maker, reviews financial information on an aggregate basis for allocating and evaluating financial performance. All long-lived assets are maintained in, and all losses are attributable to, the United States of America.

Cash, cash equivalents and restricted cash

The Company considers all highly liquid investments with original maturities of three months or less from the date of purchase to be cash and cash equivalents. Cash equivalents consist primarily of amounts invested in money market accounts and are stated at fair value. Restricted cash consists of a money market account that serves as collateral for a credit card agreement at one of the Company's financial institutions.

Fair value of financial instruments

The Company's financial assets and liabilities are accounted for in accordance with Financial Accounting Standards Board (FASB), Accounting Standards Codification (ASC), *Fair Value Measurements and Disclosures* (ASC 820). ASC 820 defines fair value as the exchange price that would be received for an asset or paid to transfer a liability (an exit

price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. The fair value hierarchy of ASC 820 requires an entity to maximize the use of observable inputs when measuring fair value and classifies those inputs into three levels:

Level 1—Observable inputs, such as quoted prices in active markets.

Level 2—Inputs, other than the quoted prices in active markets, which are observable either directly or indirectly such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the instrument's anticipated life.

Level 3—Unobservable inputs in which there is little or no market data, which require the reporting entity to develop its own assumptions.

The Company primarily applies the market approach for recurring fair value measurements. The carrying values of the Company's financial instruments, including cash equivalents, accounts payable and accrued liabilities approximate fair value due to the short-term nature of these items.

Concentration of credit risk and other risks and uncertainties

Financial instruments that potentially subject the Company to a concentration of credit risk, consist primarily of cash and cash equivalents including money market funds. The Company maintains bank deposits in federally insured financial institutions and these deposits may exceed federally insured limits. The Company is exposed to credit risk in the event of default by the financial institutions holding its cash and cash equivalents to the extent recorded in the balance sheet. The Company has not experienced any losses on its deposits of cash and cash equivalents.

The Company's future results of operations involve a number of other risks and uncertainties. Factors that could affect the Company's future operating results and cause actual results to vary materially from expectations include, but are not limited to, uncertainty of results of clinical trials and reaching milestones, uncertainty of regulatory approval of the Company's potential product candidates, uncertainty of market acceptance of the Company's product candidates, competition from substitute products and larger companies, securing and protecting proprietary technology, strategic relationships and dependence on key individuals or sole source suppliers.

The Company's product candidates require approvals from the U.S. Food and Drug Administration and comparable foreign regulatory agencies prior to commercial sales in their respective jurisdictions. There can be no assurance that any product candidates will receive the necessary approvals. If the Company was denied approval, approval was delayed or the Company was unable to maintain approval for any product candidate, it could have a materially adverse impact on the Company.

Convertible preferred stock

The Company records shares of convertible preferred stock at their respective fair values on the dates of issuance, net of issuance costs. The convertible preferred stock is recorded outside of stockholders' deficit on the balance sheets because the shares contain liquidation features that are not solely within the Company's control. The Company has elected not to adjust the carrying values of the convertible preferred stock to the liquidation preferences of such shares because of the uncertainty of whether or when such an event would occur. Subsequent adjustments to increase the carrying values to the liquidation preferences will be made only when it becomes probable that such a liquidation event will occur.

Research and development expenses

The Company expenses research and developments costs as they are incurred. Research and development expenses consist primarily of: (i) personnel-related expenses, including salaries, benefits and stock-based compensation expense, for personnel in the Company's research and development functions; (ii) fees paid to third parties such as contractors, consultants and contract research organizations (CROs), for animal studies and other costs related to preclinical and planned clinical studies; (iii) costs related to acquiring and manufacturing research and clinical trial materials, including under agreements with third parties such as contract manufacturing organizations (CMOs), and other vendors; (iv) costs related to the preparation of regulatory submissions; (v) expenses related to laboratory supplies and services; and (vi) depreciation of equipment and facilities expenses.

Accrued research and development expenses

The Company records accruals for estimated costs of research, preclinical, and manufacturing development, which are significant components of research and development expenses. A substantial portion of the Company's ongoing

research and development activities is conducted by third-party service providers, CROs and CMOs. The Company's contracts with the CROs and CMOs generally include fees such as initiation fees, reservation fees, costs related to animal and planned clinical studies and safety tests, verification run costs, materials and reagents expenses, taxes, etc. The financial terms of these contracts are subject to negotiations, which vary from contract to contract and may result in payment flows that do not match the periods over which materials or services are provided to the Company under such contracts. The Company accrues the costs incurred under agreements with these third parties based on estimates of actual work completed in accordance with the respective agreements. The Company determines the estimated costs through discussions with internal personnel and external service providers as to the progress, or stage of completion or actual timeline (start-date and end-date) of the services and the agreed-upon fees to be paid for such services. Through June 30, 2019, there have been no material differences from the Company's estimated accrued research and development expenses to actual expenses.

Stock-based compensation

The Company accounts for stock-based compensation by measuring and recognizing compensation expense for all share-based awards made to employees and directors based on estimated grant-date fair values. The Company uses the straight-line method to allocate compensation cost to reporting periods over the requisite service period, which is generally the vesting period, and estimates the fair value of share-based awards to employees and directors using the Black-Scholes option-pricing valuation model. The Company accounts for forfeitures as they occur.

Leases, rent expense, and sublease income

The Company records rent expense on a straight-line basis over the life of the lease. In cases where there is a free rent period or future fixed rent escalations, the Company records a deferred rent liability. Additionally, the receipt of any lease incentives is recorded as a deferred rent liability which is amortized over the lease term as a reduction of rent expense. Building improvements made with the lease incentives or tenant allowances are capitalized as leasehold improvements and included in property and equipment in the condensed balance sheets. In addition, the Company subleases a portion of its office space to a third party. The Company recognizes rental income on a straight-line basis over the life of the sublease.

Comprehensive loss

There are no components of other comprehensive loss for the Company. Thus, comprehensive loss is the same as the net loss for the periods presented.

Net loss per share

Basic net loss per share is calculated by dividing the net loss by the weighted-average number of shares of common stock outstanding during the period, without consideration for common stock equivalents. Diluted net loss per share is the same as basic net loss per share, since the effects of potentially dilutive securities are antidilutive given the net loss for each period presented.

Deferred offering costs

The Company capitalizes certain legal, professional accounting and other third-party fees that are directly associated with in-process equity financings as deferred offering costs until such financings are consummated. After consummation of the equity financing, these costs are recorded in stockholders' deficit as a reduction of additional paid-in capital generated as a result of the equity financing. Should the in-process equity financing be abandoned, the deferred offering costs will be expensed immediately as a charge to operating expenses in the statements of operations. As of June 30, 2019, $2.1 million of deferred offering costs were capitalized on the condensed balance sheets. There were no deferred offering costs as of December 31, 2018.

New accounting pronouncements recently adopted

In June 2018, the FASB issued ASU No. 2018-07, *Improvements to Nonemployee Share-Based Payment Accounting (ASU 2018-07).* The new standard simplifies the accounting for share-based payments to nonemployees by aligning it with the accounting for share-based payments to employees, with certain exceptions. The Company early adopted ASU 2018-07 effective January 1, 2019. The early adoption of this new standard did not have a material impact on the Company's condensed financial statements.

3. Balance Sheet Components

Property and equipment, net

Property and equipment, net consists of the following:

	DECEMBER 31, 2018	JUNE 30, 2019
	(in thousands)	
Laboratory equipment	$ 1,987	$ 3,127
Office equipment	127	141
Leasehold improvements	25	44
Property and equipment, gross	2,139	3,312
Less accumulated depreciation	(667)	(926)
Total property and equipment, net	$ 1,472	$ 2,386

Depreciation expense was approximately $0.1 million and $0.3 million for the six months ended June 30, 2018 and 2019, respectively.

Accrued liabilities

Accrued liabilities consisted of the following:

	DECEMBER 31, 2018	JUNE 30, 2019
	(in thousands)	
Accrued research and development materials and services	$ 2,395	$ 1,197
Accrued professional services	563	2,158
Accrued compensation	177	529
Other	447	164
Total accrued liabilities	$ 3,582	$ 4,048

4. License Agreements

Adimab agreement

In January 2017, the Company entered into an option and license agreement with Adimab LLC (Adimab) pursuant to which the Company acquired a non-exclusive license to conduct research to evaluate certain Adimab antibodies in the context of the Company's proprietary platform constructs directed to selected targets, and an option to be granted a non-exclusive license to develop and commercialize antibody products incorporating or derived from such Adimab antibodies. During the six months ended June 30, 2019, the Company recognized $0.1 million in research and development expenses under this agreement in its statements of operations.

LakePharma agreement

In May 2018, the Company and LakePharma, Inc. (LakePharma) entered into an agreement for screening services aimed towards discovering certain antibodies. During the six months ended June 30, 2019, the Company recognized $0.1 million in research and development expenses under this agreement in its statements of operations.

5. Capital Structure

Common stock

On June 27, 2019, the Company amended and restated the Certification of Incorporation in connection with the issuance of its Series C convertible preferred stock, which resulted in two classes of common stock: common stock and non-voting common stock. Unless otherwise noted, all references in these condensed consolidated financial statements to the Company's "common stock" and "common shares" refer to the Company's voting common stock. The Company is authorized to issue 33,669,269 shares of common stock and 4,161,370 shares of non-voting

common stock, par value $0.01 per share. Common stockholders and non-voting common stockholders are entitled to dividends when and if declared by the Company's Board of Directors and after any convertible preferred share dividends are fully paid. The holder of each share of common stock is entitled to one vote. The non-voting common stock have the same rights and powers, and rank equally to, share ratably with, and are identical in all respects as the common stock, except that the non-voting common stock shall be non-voting and convertible into common stock at the non-voting common stock holder's election upon an IPO, or upon written notice to Company, subject to certain limitations. As of June 30, 2019, there are no shares outstanding of the non-voting common stock. As of June 30, 2019, the Company has never declared a dividend.

Common stock reserved for future issuance, on an as converted basis, consists of the following:

	DECEMBER 31, 2018	JUNE 30, 2019
Preferred stock, issued and outstanding	9,501,620	14,192,617
Restricted stock, issued and outstanding	116,518	116,518
Stock options, issued and outstanding	1,523,285	1,929,283
Stock options, authorized for future issuance	456,818	247,572
Total	11,598,241	16,485,990

Convertible preferred stock

Convertible preferred stock consisted of the following:

	DECEMBER 31, 2018				
	AUTHORIZED SHARES	SHARES ISSUED AND OUTSTANDING	ORIGINAL ISSUE PRICE	CARRYING VALUE	AGGREGATE LIQUIDATION PREFERENCE
	(in thousands, except share and per share amounts)				
Series A convertible preferred stock	401,004	401,004	$ 3.3042	$ 1,325	$ 1,325
Series B convertible preferred stock	9,100,620	9,100,616	$ 6.6084	59,592	60,141
Total	9,501,624	9,501,620		$ 60,917	$ 61,466

	JUNE 30, 2019				
	AUTHORIZED SHARES	SHARES ISSUED AND OUTSTANDING	ORIGINAL ISSUE PRICE	CARRYING VALUE	AGGREGATE LIQUIDATION PREFERENCE
	(in thousands, except share and per share amounts)				
Series A convertible preferred stock	401,004	401,004	$ 3.3042	$ 1,325	$ 1,325
Series B convertible preferred stock	9,100,620	9,100,616	$ 6.6084	59,592	60,141
Series C convertible preferred stock	7,717,450	4,690,997	$ 13.2168	61,868	62,000
Total	17,219,074	14,192,617		$ 122,785	$ 123,466

As of June 30, 2019, the holders of the convertible preferred stock had the following rights and preferences:

Voting rights

Each share of convertible preferred stock has a number of votes equal to the number of shares of common stock into which it is convertible. The holders of the convertible preferred stock shall vote together with the holders of common stock as a single class upon any matter submitted to stockholders for a vote or written consent.

Convertible preferred stock holders are entitled to vote in the election of board members based on the conversion of each preferred stock to common stock. The approval of the holders of a majority of the voting power of the outstanding

shares of Series A and Series B convertible preferred stock, voting together as a single class on an as-converted-to-common-stock basis are required in order to take the following actions, so long as an aggregate of 4,750,812 shares of Series A and Series B convertible preferred stock are outstanding: amend or repeal any provisions in the charter or bylaws if it would disproportionately adversely impact the Series A and Series B convertible preferred stock holders, or change the authorized number of shares of Series A and B convertible preferred stock. The approval of (i) Baker Bros. Advisors LP (BBA) and Redmile Group (RG) or (ii) if BBA and RG do not each hold at least 1,134,919 and 945,765 shares of Series C convertible preferred stock, respectively, then holders of a majority of the outstanding Series C convertible preferred stock, are required in order to take the following actions, so long as at least 3,783,063 shares of Series C convertible preferred stock remain outstanding: liquidate, dissolve or wind-up the business or otherwise effect a deemed liquidation, change the Company's certificate of incorporation or bylaws in a manner that is disproportionately adverse to the Series C convertible preferred stock, create any equity security having rights, preferences or privileges senior to the Series C convertible preferred stock, purchase or redeem or pay any dividend on any capital shares prior to the Series C convertible preferred stock, create any debt security if the Company's aggregate indebtedness would exceed $500,000 unless approved by the Company's board of directors including one director designated by holders of the Series C convertible preferred stock, create or hold capital stock in any subsidiary that is not wholly owned, dispose of any capital stock of any Company subsidiary, permit any subsidiary to dispose of all or substantially all of its assets, change the size of the Company's board of directors, or sell or cause any of its subsidiaries to sell blockchain-based assets.

Dividends

Holders of convertible preferred stock are entitled, when and as declared by the Company's Board of Directors, to receive non-cumulative dividends that accrue at an annual rate of $0.26 per share of Series A convertible preferred stock, $0.53 per share of Series B convertible preferred stock, and $1.06 per share of any Series C convertible preferred stock. Dividends with respect to Series C convertible preferred stock shall rank in preference and priority to any payment of any dividend on Series A or Series B convertible preferred stock. These convertible preferred stock dividends are payable in preference and priority to any payment of any dividend on shares of common stock.

Conversion

Any share of convertible preferred stock may, at the option of the holder, be converted at any time into such number of fully-paid as is determined by dividing an amount equal to $3.30 for the Series A convertible preferred stock, $6.61 for the Series B convertible preferred stock, and $13.22 for the Series C convertible preferred stock, by the conversion price for such series in effect at the time of conversion. As of June 30, 2019, the Series A, Series B and Series C conversion prices equaled $3.30, $6.61, and $13.22 respectively, and thus were convertible into common stock at a one-for-one basis. The conversion price for each series of convertible preferred stock is subject to an adjustment in the event of stock split, combination, common stock dividend or distribution, reclassification, exchange, substitution, or reorganization. The shares of convertible preferred stock are subject to anti-dilution protection if there are subsequent issuances of common stock without consideration or for a consideration per share less than the Series A conversion price in the case of Series A convertible preferred stock; the Series B conversion price in the case of Series B convertible preferred stock, and the Series C conversion price in the case of the Series C convertible preferred stock in each case in effect immediately prior to the issuance of such additional share.

Each share of convertible preferred stock is automatically converted into common stock upon the earlier of the event of (i) the written consent of BBA and RG so long as they each hold at least 1,134,919 and 945,765 shares of Series C Preferred Stock, respectively (Requisite Holders), and holders of 4,519,726 shares of the Series A and/or Series B convertible preferred stock (ii) immediately prior to the closing of a firm-commitment underwritten public offering covering the sale of stock on a nationally recognized stock exchange to the public, if such IPO is approved by any two of BBA, RG or Major Investor, or (iii) immediately prior to the closing of a firm commitment underwritten IPO at a price per share (before deduction of underwriter discounts and commissions and offering costs) of not less than $14.54, adjusted for any stock splits, combinations, consolidations, or stock distributions or dividends, and the gross proceeds to the Company are not less than $75.0 million (Qualified IPO).

In the event of an IPO, certain holders may elect to convert their Series C convertible preferred shares into shares of non-voting common stock, subject to certain limitations.

Liquidation

Upon any liquidation, dissolution, or winding up of the Company, whether voluntary or involuntary, before any distribution or payment shall be made to the holders of any common stock and non-voting common stock, Series A convertible preferred stock or Series B convertible preferred stock, the holders of Series C convertible preferred stock shall be entitled to receive $13.22 for each share of Series C convertible preferred stock held by them, as adjusted for stock splits, combinations, consolidations, or stock distributions or dividends, plus all declared and unpaid dividends thereon. If the assets and funds thus distributed among the holders of the Series C convertible preferred stock are insufficient to permit the payment to the holders of Series C convertible preferred stock of the liquidation preference, then all of the assets and funds of the Company legally available for distribution shall be distributed ratably among the holders of the Series C convertible preferred stock in proportion to the full amounts to which they would otherwise be respectively entitled. After completion of the payment to holders of the Series C convertible preferred stock described above, the holders of Series A and Series B convertible preferred stock shall be entitled to receive $3.30 per share and $6.61 per share, respectively, for each share of Series A convertible preferred stock and Series B convertible preferred stock held by them, as adjusted for stock splits, combinations, consolidations, or stock distributions or dividends, plus all declared and unpaid dividends thereon. If, upon any such liquidation event, the assets of the Company are insufficient to make payment in full to all holders of Series A and Series B convertible preferred stock of the liquidation preference after payment of the liquidation preference of the series C convertible preferred stock, then such assets shall be distributed among the holders of the Series A and Series B convertible preferred stock at the time outstanding, ratably in proportion to the full amounts to which they would otherwise be respectively entitled. After completion of payment to the convertible preferred stock holders noted above, common stockholders and non-voting common stockholders will receive $0.01 per share for each share of common stock and non-voting common stock, or if the assets and funds are insufficient to permit the payment to such holders of the full aforesaid amount, then the entire assets and funds of the Company legally available for distribution shall be distributed ratably among the holders of the common stock and non-voting common stock. Any remaining assets and funds, after payment of the preferential aforementioned amounts to the holders of the convertible preferred and common stock and non-voting common stock, shall be distributed ratably among holders of common stock and non-voting common stock and preferred stock in proportion to the number of shares of common stock that would be held by each shareholder if all convertible preferred stock were converted into common stock immediately prior to liquidation, dissolution, or winding up, utilizing the then conversion price. As of June 30, 2019 in the event of any liquidation, dissolution, winding up of the Company, the holders of Series A convertible preferred stock were entitled to receive an amount equal to $3.30 per share, the holders of Series B convertible preferred stock were entitled to receive an amount equal to $6.61 per share and the holders of Series C convertible preferred stock were entitled to receive an amount equal to $13.22 per share.

A liquidation transaction is deemed to occur if the Company (i) merges or consolidates with any other company, and the stockholders of the Company no longer own at least 50% of the voting power of the surviving entity, (ii) enters into a sale, lease, transfer, exclusive license, or other disposition of all or substantially all of the assets of the Company.

Redemption

The convertible preferred stock is not redeemable.

6. Stock-Based Compensation

As of June 30, 2019, the Company had authorized 1,588,886 shares of common stock for grant under the 2018 Plan. The 2010 Plan was terminated in June 2019, which resulted in a decrease to the option pool of 8,322 shares.

The following table summarizes stock option activity:

	SHARES AVAILABLE TO GRANT	OUTSTANDING OPTIONS			
		NUMBER OF OPTIONS	WEIGHTED-AVERAGE EXERCISE PRICE	WEIGHTED-AVERAGE REMAINING CONTRACTUAL TERM (YEARS)	AGGREGATE INTRINSIC VALUE (in thousands)
Balance at December 31, 2018	456,818	1,523,285			
Addition—Option pool	369,983	—			
Granted(1)	(586,795)	586,795	$ 1.39		
Exercised	—	(173,222)	$ 0.95		
Cancelled	7,566	(7,575)	$ 0.93		
Balance at June 30, 2019	247,572	1,929,283	$ 1.25	8.2	$ 17,352
Exercisable at June 30, 2019		705,307	$ 1.06	6.1	$ 6,491

(1) These options were granted prior to March 31, 2019.

As of June 30, 2019 there was approximately $1.1 million of unrecognized stock-based compensation, which the Company expects to recognize over a weighted-average period of 3.0 years.

The aggregate intrinsic values of options outstanding and exercisable were calculated as the difference between the exercise price of the options and the estimated fair value of the Company's common stock as determined by the Company's Board of Directors as of June 30, 2019.

For the six months ended June 30, 2019, the weighted-average fair value of options granted was $0.99 per share. The total fair value of options that vested during the six months ended June 30, 2019 was approximately $0.1 million.

Restricted stock

During December 2018, the Company issued 116,518 shares of common stock to an executive officer under a restricted stock agreement at a grant date fair value of $1.39 per share that vests over two years. Any unvested shares are subject to forfeiture in the case that the grantee's service terminates. For the six months ended June 30, 2019, the related stock-based compensation was immaterial. As of June 30, 2019, there was $0.1 million of unrecognized stock-based compensation related to restricted stock, which the Company expects to recognize over a remaining weighted-average period of 1.1 years.

Total stock-based compensation

Total stock-based compensation expense related to the 2010 Plan and 2018 Plan was recorded in the statements of operations and allocated as follows:

	SIX MONTHS ENDED JUNE 30,	
	2018	2019
	(in thousands)	
Research and development	$ 26	$ 214
General and administrative	18	66
Total	$ 44	$ 280

7. Commitments and Contingencies

Operating leases

The Company leases its headquarters with its main offices and laboratory facilities in Mountain View, California under a lease agreement that ends in April 2025. Rent expense for the six months ended June 30, 2018 and June 30, 2019 was $0.4 million and $0.7 million, respectively. Future minimum lease payments under this lease are $11.5 million as of June 30, 2019.

In February 2017, the Company entered into an agreement wherein it subleases a portion of its office space to a third party through October 2019. For the six months ended June 30, 2018 and June 30, 2019, the Company recognized $59,000 and $12,000, respectively, as other income (expense), net in the condensed statements of operations in connection with this sublease.

Employee benefit plan

The Company sponsors a 401(k) defined contribution plan for its employees. This plan provides for tax-deferred salary deductions for all employees. Employee contributions are voluntary. Employees may contribute up to 100% of their annual compensation to this plan, as limited by an annual maximum amount as determined by the IRS.

Legal proceedings

The Company, from time to time, may be party to litigation arising in the ordinary course of business. The Company was not subject to any material legal proceedings during the six months ended June 30, 2019 and, to the best of its knowledge, no material legal proceedings are currently pending or threatened.

Indemnification

In the ordinary course of business, the Company enters into agreements that may include indemnification provisions. Pursuant to such agreements, the Company may indemnify, hold harmless and defend an indemnified party for losses suffered or incurred by the indemnified party. Some of the provisions will limit losses to those arising from third party actions. In some cases, the indemnification will continue after the termination of the agreement. The maximum potential amount of future payments the Company could be required to make under these provisions is not determinable. The Company has never incurred material costs to defend lawsuits or settle claims related to these indemnification provisions. The Company has also entered into indemnification agreements with its directors and officers that may require the Company to indemnify its directors and officers against liabilities that may arise by reason of their status or service as directors or officers to the fullest extent permitted by Delaware corporate law. The Company currently has directors' and officers' insurance.

8. Related Party Transactions with its Majority Investor

The following are transactions that occurred between the Company and the Majority Investor, as defined in Note 1.

Lease guarantee

In February 2019, the Majority Investor entered into an agreement to lend its credit and creditworthiness to the Company by providing a guarantee to allow the Company to enter into the lease agreement for its facilities in Mountain View, California. The Company has not drawn on the guarantee nor incurred any related commission expense through June 30, 2019.

Settlement of related party receivable

In April 2019, the Company received $2.5 million in cash from the Majority Investor in settlement of the outstanding note receivable as of December 31, 2018.

Related party loan

During January, February and April 2019, the Company issued an unsecured promissory note to the Majority Investor for proceeds of $15.0 million. In June 2019, the outstanding unsecured promissory note, amounting to $20.0 million, issued by the Majority Investor was settled as shares of Series C convertible preferred stock (see below).

2019 Series C issuance

In June 2019, the Company issued 2,269,838 shares of Series C convertible preferred stock to the Majority Investor for $30.0 million. A portion of the shares of Series C convertible preferred stock were issued to satisfy the settlement of the unsecured promissory note amounting to $20.0 million issued by the Majority Investor.

9. Net Loss and Unaudited Pro Forma Net Loss Per Share

The following table sets forth the computation of the basic and diluted net loss per share:

	SIX MONTHS ENDED JUNE 30,	
	2018	2019
	(in thousands, except share and per share amounts)	
Numerator:		
Net loss	$ (7,141)	$ (18,146)
Denominator:		
Weighted-average common shares outstanding used to compute net loss per share, basic and diluted	438,074	501,716
Net loss per share, basic and diluted	$ (16.30)	$ (36.17)

Since the Company was in a loss position for all periods presented, basic net loss per share is the same as diluted net loss per share for all periods as the inclusion of all common stock equivalents outstanding would have been anti-dilutive. Potentially dilutive securities that were not included in the diluted per share calculations because they would be anti-dilutive were as follows:

	JUNE 30,	
	2018	2019
Series A convertible preferred stock	401,004	401,004
Series B convertible preferred stock	5,983,793	9,100,616
Series C convertible preferred stock	—	4,690,997
Restricted stock	—	116,518
Stock options	768,762	1,929,283
Total	7,153,559	16,238,418

The following table sets forth the computation of the Company's pro forma basic and diluted net loss per share:

	SIX MONTHS ENDED JUNE 30, 2019
	(in thousands, except share and per share amounts)
Numerator:	
Net loss	$ (18,146)
Denominator:	
Weighted-average common shares outstanding used to compute net loss per share, basic and diluted	501,716
Pro forma adjustment to reflect assumed conversion of preferred stock, basic and diluted(1)	9,579,372
Weighted-average common and non-voting common shares outstanding used to compute pro forma net loss per share, basic and diluted	10,081,088
Pro forma net loss per share, basic and diluted	$ (1.80)

(1) This excludes the 3,026,449 shares of Series C convertible preferred stock issued subsequent to June 30, 2019.

10. Subsequent Events

The Company evaluated subsequent events through August 9, 2019, the date on which the accompanying unaudited interim financial statements were issued, and through August 30, 2019, as it relates to the Reverse Stock Split.

In June 2019, the Company entered into an agreement to issue and sell 7,717,450 shares of its Series C convertible preferred stock for $102.0 million. As of June 30, 2019, $62.0 million of gross proceeds were received, which includes $20.0 million in settlement of all of the principal amounts outstanding under its promissory note. In July 2019, the Company sold the remaining 3,026,449 shares for gross proceeds of $40.0 million.

In August 2019, the Company filed an amendment to the Company's amended and restated certificate of incorporation to effect the Reverse Stock Split (See Note 1) and amended the number of shares of common and non-voting common stock authorized for issuance to be 33,669,269 and 6,431,208, respectively.

7,812,500 Shares

IGM Biosciences, Inc.

Common Stock

PRELIMINARY PROSPECTUS

Jefferies

Piper Jaffray

Stifel

Guggenheim Securities

, 2019

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution.

The following table sets forth all expenses to be paid by the Registrant, other than underwriting discounts and commissions, in connection with this offering. All amounts shown are estimates except for the Securities and Exchange Commission (SEC) registration fee, the Financial Industry Regulatory Authority, Inc. (FINRA) filing fee and listing fee.

	AMOUNT PAID OR TO BE PAID
SEC registration fee	$ 18,512
FINRA filing fee	23,411
Nasdaq listing fee	150,000
Legal fees and expenses	2,124,000
Accounting fees and expenses	961,000
Printing and engraving expenses	351,300
Transfer agent and registrar fees and expenses	10,000
Miscellaneous fees and expenses	261,777
Total	$ 3,900,000

Item 14. Indemnification of Directors and Officers.

Section 145 of the Delaware General Corporation Law empowers a corporation to indemnify its directors and officers and to purchase insurance with respect to liability arising out of their capacity or status as directors and officers, provided that the person acted in good faith and in a manner the person reasonably believed to be in our best interests, and, with respect to any criminal action, had no reasonable cause to believe the person's actions were unlawful. The Delaware General Corporation Law further provides that the indemnification permitted thereunder shall not be deemed exclusive of any other rights to which the directors and officers may be entitled under the corporation's bylaws, any agreement, a vote of stockholders or otherwise. The certificate of incorporation of the registrant to be in effect upon the completion of this offering provides for the indemnification of the registrant's directors and officers to the fullest extent permitted under the Delaware General Corporation Law. In addition, the bylaws of the registrant to be in effect upon the completion of this offering require the registrant to fully indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding (whether civil, criminal, administrative or investigative) by reason of the fact that such person is or was a director or officer of the registrant, or is or was a director or officer of the registrant serving at the registrant's request as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorney's fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding, to the fullest extent permitted by applicable law.

Section 102(b)(7) of the Delaware General Corporation Law permits a corporation to provide in its certificate of incorporation that a director of the corporation shall not be personally liable to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except (1) for any breach of the director's duty of loyalty to the corporation or its stockholders, (2) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (3) for payments of unlawful dividends or unlawful stock repurchases or redemptions or (4) for any transaction from which the director derived an improper personal benefit. The registrant's certificate of incorporation to be in effect upon the completion of this offering provides that the registrant's directors shall not be personally liable to it or its stockholders for monetary damages for breach of fiduciary duty as a director and that if the Delaware General Corporation Law is amended to authorize corporate action further eliminating or

limiting the personal liability of directors, then the liability of the registrant's directors shall be eliminated or limited to the fullest extent permitted by the Delaware General Corporation Law, as so amended.

Section 174 of the Delaware General Corporation Law provides, among other things, that a director who willfully or negligently approves of an unlawful payment of dividends or an unlawful stock purchase or redemption may be held liable for such actions. A director who was either absent when the unlawful actions were approved, or dissented at the time, may avoid liability by causing his or her dissent to such actions to be entered in the books containing minutes of the meetings of the board of directors at the time such action occurred or immediately after such absent director receives notice of the unlawful acts.

As permitted by the Delaware General Corporation Law, the registrant has entered into separate indemnification agreements with each of the registrant's directors and executive officers which would require the registrant, among other things, to indemnify them against certain liabilities which may arise by reason of their status as directors or executive officers.

The registrant expects to obtain and maintain insurance policies under which its directors and officers are insured, within the limits and subject to the limitations of those policies, against certain expenses in connection with the defense of, and certain liabilities which might be imposed as a result of, actions, suits or proceedings to which they are parties by reason of being or having been directors or officers. The coverage provided by these policies may apply whether or not the registrant would have the power to indemnify such person against such liability under the provisions of the Delaware General Corporation Law.

These indemnification provisions and the indemnification agreements entered into between the registrant and the registrant's officers and directors may be sufficiently broad to permit indemnification of the registrant's officers and directors for liabilities (including reimbursement of expenses incurred) arising under the Securities Act of 1933, as amended.

The underwriting agreement between the registrant and the underwriters to be filed as Exhibit 1.1 to this registration statement provides for the indemnification by the underwriters of the registrant's directors and officers and certain controlling persons against specified liabilities, including liabilities under the Securities Act with respect to information provided by the underwriters specifically for inclusion in the registration statement. The investors' rights agreement with certain holders of our capital stock also provides for cross-indemnification in connection with the registration of our common stock on behalf of such holders.

Item 15. Recent Sales of Unregistered Securities.

The following sets forth information regarding all unregistered securities issued and sold by us since January 1, 2016. No underwriters were involved in the sales.

Preferred and Common Stock Issuances

(1) In February 2016, September 2016, March 2017 and August 2017, we issued an aggregate of 2,716,238 shares of our Series B convertible preferred stock (convertible into 2,716,238 shares of our common stock) to one accredited investor, Haldor Topsøe Holding A/S (HTH), at a price of $6.61 per share for aggregate consideration of approximately $17.9 million.

(2) In November and December 2017, IGM Biosciences A/S, a Danish company (Holdco), issued an aggregate of 39,543,307 shares of Series B convertible preferred stock of Holdco (convertible into 39,543,307 shares of common stock of Holdco), 2,650,000 shares of Series A convertible preferred stock of Holdco (convertible into 2,650,000 shares of common stock of Holdco), and 2,895,000 shares of common stock of Holdco, to certain of our stockholders in exchange for the equivalent number (prior to giving effect to a 6.6084-for-1 reverse stock split of our common stock, non-voting common stock and convertible preferred stock effected in August 2019) of corresponding shares of our Series B convertible preferred stock, Series A convertible preferred stock and common stock, respectively.

(3) In December 2017, we merged with Ravnholm Merger Corp., a Delaware corporation wholly owned by Holdco, in a merger in which all of our outstanding capital stock was cancelled and the 1,000 shares of common stock of

Ravnholm Merger Corp. became 1,000 outstanding shares of our common stock (prior to giving effect to a 6.6084-for-1 reverse stock split of our common stock, non-voting common stock and convertible preferred stock effected in August 2019), all of which were held by Holdco such that we became a wholly owned subsidiary of Holdco.

(4) In September 2018, Holdco issued an aggregate of 20,597,231 shares of Series B convertible preferred stock of Holdco (convertible into 20,597,231 shares of common stock of Holdco) (not giving effect to our reverse stock split) to five of its stockholders at a purchase price of approximately $20.6 million.

(5) In October 2018, we reclassified the 1,000 outstanding shares of our common stock (prior to giving effect to a 6.6084-for-1 reverse stock split of our common stock, non-voting common stock and convertible preferred stock effected in August 2019), all of which were then held by Holdco, into 9,100,616 shares of our Series B convertible preferred stock (convertible into 9,100,616 shares of our common stock), 401,004 shares of our Series A convertible preferred stock (convertible into 401,004 shares of our common stock), and 438,074 shares of our common stock.

(6) In December 2018, we issued 116,518 shares of our common stock to an employee.

(7) In June 2019 and July 2019, we issued an aggregate of 7,717,446 shares of our Series C convertible preferred stock (convertible into 7,717,446 shares of our common stock and non-voting common stock in aggregate) to nine accredited investors, at a price of $13.22 per share for aggregate consideration of approximately $102.0 million, which included $20.0 million in settlement of indebtedness.

Plan-Related Issuances

(8) From March 2016 through August 2017, we granted options to purchase an aggregate of 155,097 shares of our common stock, at exercise prices per share ranging from $0.93 to $1.00, to a total of 17 service providers under our 2010 Stock Plan (2010 Plan).

(9) From August 2016 through the date of this prospectus, we issued and sold to 13 service providers an aggregate of 184,460 shares of our common stock upon the exercise of options under the 2010 Plan, at purchase prices per share ranging from $0.93 to $1.00, for aggregate consideration of approximately $171,100.

(10) From December 2018 through the date of this prospectus, we granted options to purchase an aggregate of 1,526,380 shares of our common stock, at exercise prices per share ranging from $1.39 to $10.24, to a total of 52 service providers under our 2018 Omnibus Incentive Plan (2018 Plan).

(11) From December 2018 through the date of this prospectus, we have issued and sold to four service providers an aggregate of 11,193 shares of our common stock upon the exercise of options under the 2018 Plan, at a purchase price per share of $1.39, for aggregate consideration of approximately $15,535.

(12) On the effective date of this registration statement, we will grant stock options to purchase an aggregate of 118,361 shares of common stock under our 2018 Plan to 12 service providers at an exercise price per share equal to the initial public offering price of our common stock.

The offers, sales and issuances of the securities described in this Item 15 were deemed to be exempt from registration under the Securities Act under (i) Rule 701 promulgated under the Securities Act as offers and sale of securities pursuant to certain compensatory benefit plans and contracts relating to compensation in compliance with Rule 701, (ii) Section 4(a)(2) of the Securities Act (and Regulation D promulgated thereunder) as transactions by an issuer not involving any public offering or (iii) transactions with a non-U.S. person (including Regulation S promulgated under the Securities Act).

Item 16. Exhibits and Financial Statement Schedules.

(a) Exhibits.

See the Exhibit Index immediately preceding the signature page hereto for a list of exhibits filed as part of this registration statement on Form S-1, which Exhibit Index is incorporated herein by reference.

(b) Financial Statement Schedules.

No financial statement schedules are provided because the information called for is not required or is shown either in the financial statements or related notes.

Item 17. Undertakings.

The undersigned Registrant hereby undertakes to provide to the underwriters at the closing specified in the underwriting agreement certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise the Registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The undersigned Registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the Registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

EXHIBIT INDEX

EXHIBIT NO.	DESCRIPTION OF EXHIBIT
1.1	Form of Underwriting Agreement.
3.1	Amended and Restated Certificate of Incorporation of the Registrant, as amended, as currently in effect.
3.2	Form of Amended and Restated Certificate of Incorporation of the Registrant, to be in effect upon the completion of this offering.
3.3^	Amended and Restated Bylaws of the Registrant, as currently in effect.
3.4	Form of Amended and Restated Bylaws of the Registrant, to be in effect upon the completion of this offering.
4.1	Specimen common stock certificate of the Registrant.
4.2^	Amended and Restated Investor Rights Agreement, by and among the Registrant and certain of its stockholders, dated as of June 28, 2019.
5.1	Opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation.
10.1^+	Amended and Restated 2010 Stock Plan and forms of agreement thereunder.
10.2+	2018 Omnibus Incentive Plan and forms of agreements thereunder.
10.3+	Amended and Restated 2018 Omnibus Incentive Plan and forms of agreements thereunder, to be in effect upon completion of this offering.
10.4+	2019 Employee Stock Purchase Plan and forms of agreements thereunder, to be in effect upon completion of this offering.
10.5+	Form of Indemnification Agreement, by and between the Registrant and each of its directors and executive officers.
10.6^+	Confirmatory Employment Letter, by and between Fred Schwarzer and the Registrant, effective as of August 19, 2019.
10.7^+	Employment Agreement, by and between Daniel Chen and the Registrant, dated as of July 12, 2018.
10.8^+	Restricted Stock Grant Agreement, by and between Daniel Chen and the Registrant, dated as of December 30, 2018.
10.9^+	Confirmatory Employment Letter, by and between Bruce Keyt and the Registrant, effective as of August 19, 2019.
10.10^+	Confirmatory Employment Letter, by and between Misbah Tahir and the Registrant, effective as of August 19, 2019.
10.11^+	Change in Control and Severance Policy.
10.12+	Outside Director Compensation Policy.
10.13^+	Executive Incentive Compensation Plan.
10.14^	Lease by and between Real Property Investments, LLC and the Registrant, dated February 27, 2019.
10.15^	Nominating Agreement, by and among 667, L.P., Baker Brothers Life Sciences, L.P. and the Registrant, dated as of June 28, 2019.
10.16^	Nominating Agreement, by and between Haldor Topsøe Holding A/S and the Registrant, dated as of June 28, 2019.

EXHIBIT NO.	DESCRIPTION OF EXHIBIT
10.17^	Nominating Agreement, by and among Redmile Biopharma Investments II, L.P., RAF, L.P., Redmile Strategic Master Fund, LP and the Registrant, dated as of June 28, 2019.
23.1	Consent of Independent Registered Public Accounting Firm.
23.2	Consent of Wilson Sonsini Goodrich & Rosati, Professional Corporation (reference is made to Exhibit 5.1).
24.1^	Power of Attorney.

^ Previously filed.
+ Indicates management contract or compensatory plan.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant has duly caused this Registration Statement on Form S-1 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Mountain View, State of California, on the 3rd day of September, 2019.

IGM BIOSCIENCES, INC.

/s/ Fred Schwarzer
Fred Schwarzer
Chief Executive Officer and President

SIGNATURE	TITLE	DATE
/s/ Fred Schwarzer Fred Schwarzer	Chief Executive Officer, President and Director *(Principal Executive Officer)*	September 3, 2019
/s/ Misbah Tahir Misbah Tahir	Chief Financial Officer *(Principal Financial and Accounting Officer)*	September 3, 2019
* Michael Loberg, Ph.D.	Chair of the Board of Directors	September 3, 2019
* M. Kathleen Behrens, Ph.D.	Director	September 3, 2019
* Julie Hambleton, M.D.	Director	September 3, 2019
* Michael Lee	Director	September 3, 2019
* Kelvin Neu, M.D.	Director	September 3, 2019
* William Strohl, Ph.D.	Director	September 3, 2019
* Christina Teng Topsøe	Director	September 3, 2019
* Jakob Haldor Topsøe	Director	September 3, 2019

* By: /s/ Fred Schwarzer
Fred Schwarzer, Attorney-in-fact

Exhibit 1.1

[•] Shares

IGM Biosciences, Inc.

UNDERWRITING AGREEMENT

September [•], 2019

JEFFERIES LLC
PIPER JAFFRAY & CO.
STIFEL, NICOLAUS & COMPANY, INCORPORATED
As Representatives of the several Underwriters

c/o JEFFERIES LLC
520 Madison Avenue
New York, New York 10022

c/o PIPER JAFFRAY & CO.
50 California Street, Suite 3100
San Francisco, California 94111

c/o STIFEL, NICOLAUS & COMPANY, INCORPORATED
787 Seventh Avenue, 11th Floor
New York, New York 10019

Ladies and Gentlemen:

Introductory. IGM Biosciences, Inc., a Delaware corporation (the "**Company**"), proposes to issue and sell to the several underwriters named in Schedule A (the "**Underwriters**") an aggregate of [•] shares of its common stock, par value $0.01 per share (the "**Shares**"). The [•] Shares to be sold by the Company are called the "**Firm Shares**." In addition, the Company has granted to the Underwriters an option to purchase up to an additional [•] Shares as provided in Section 2. The additional [•] Shares to be sold by the Company pursuant to such option are collectively called the "**Optional Shares**." The Firm Shares and, if and to the extent such option is exercised, the Optional Shares are collectively called the "**Offered Shares**." Jefferies LLC ("**Jefferies**"), Piper Jaffray & Co. ("**Piper Jaffray**") and Stifel, Nicolaus & Company, Incorporated ("**Stifel**") agreed to act as representatives of the several Underwriters (in such capacity, the "**Representatives**") in connection with the offering and sale of the Offered Shares. To the extent there are no additional underwriters listed on Schedule A, the term "Representatives" as used herein shall mean you, as Underwriters, and the term "Underwriters" shall mean either the singular or the plural, as the context requires.

The Company has prepared and filed with the Securities and Exchange Commission (the "**Commission**") a registration statement on Form S-1, File No. 333-233365 which contains a form of prospectus to be used in connection with the public offering and sale of the Offered Shares. Such registration statement, as amended, including the financial statements, exhibits and schedules thereto, in the form in which it became effective under the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder (collectively, the "**Securities Act**"), including any information deemed to be a part thereof at the time of effectiveness pursuant to Rule 430A under the Securities Act, is called the "**Registration Statement**." Any registration statement filed by the Company pursuant to Rule 462(b)

under the Securities Act in connection with the offer and sale of the Offered Shares is called the "**Rule 462(b) Registration Statement**," and from and after the date and time of filing of any such Rule 462(b) Registration Statement the term "Registration Statement" shall include the Rule 462(b) Registration Statement. The prospectus, in the form first used by the Underwriters to confirm sales of the Offered Shares or in the form first made available to the Underwriters by the Company to meet requests of purchasers pursuant to Rule 173 under the Securities Act, is called the "**Prospectus**." The preliminary prospectus dated September [•], 2019 describing the Offered Shares and the offering thereof is called the "**Preliminary Prospectus**," and the Preliminary Prospectus and any other prospectus in preliminary form that describes the Offered Shares and the offering thereof and is used prior to the filing of the Prospectus is called a "**preliminary prospectus**." As used herein, "**Applicable Time**" is [•][a.m.][p.m.] (New York City time) on September [•], 2019. As used herein, "**free writing prospectus**" has the meaning set forth in Rule 405 under the Securities Act, and "**Time of Sale Prospectus**" means the Preliminary Prospectus together with the free writing prospectuses, if any, identified in Schedule B hereto and the pricing information identified in Schedule C hereto. As used herein, **"Road Show"** means a "road show" (as defined in Rule 433 under the Securities Act) relating to the offering of the Offered Shares contemplated hereby that is a "written communication" (as defined in Rule 405 under the Securities Act). As used herein, "**Section 5(d) Written Communication**" means each written communication (within the meaning of Rule 405 under the Securities Act) that is made in reliance on Section 5(d) of the Securities Act by the Company or any person authorized to act on behalf of the Company to one or more potential investors that are qualified institutional buyers ("**QIBs**") and/or institutions that are accredited investors ("**IAIs**"), as such terms are respectively defined in Rule 144A and Rule 501(a) under the Securities Act, to determine whether such investors might have an interest in the offering of the Offered Shares; "**Section 5(d) Oral Communication**" means each oral communication, if any, made in reliance on Section 5(d) of the Securities Act by the Company or any person authorized to act on behalf of the Company made to one or more QIBs and/or one or more IAIs to determine whether such investors might have an interest in the offering of the Offered Shares; "**Marketing Materials**" means any materials or information provided to investors by, or with the approval of, the Company in connection with the marketing of the offering of the Offered Shares, including any roadshow or investor presentations made to investors by the Company (whether in person or electronically); and "**Permitted Section 5(d) Communication**" means the Section 5(d) Written Communication(s) and Marketing Materials listed on Schedule D attached hereto.

All references in this Agreement to (i) the Registration Statement, any preliminary prospectus (including the Preliminary Prospectus), or the Prospectus, or any amendments or supplements to any of the foregoing, or any free writing prospectus, shall include any copy thereof filed with the Commission pursuant to its Electronic Data Gathering, Analysis and Retrieval System ("**EDGAR**") and (ii) the Prospectus shall be deemed to include any "electronic Prospectus" provided for use in connection with the offering of the Offered Shares as contemplated by Section 3(n) of this Agreement.

The Company hereby confirms its agreement with the Underwriters as follows:

Section 1. Representations and Warranties.

The Company hereby represents, warrants and covenants to each Underwriter, as of the date of this Agreement, as of the First Closing Date (as hereinafter defined) and as of each Option Closing Date (as hereinafter defined), if any, as follows:

(a) ***Compliance with Registration Requirements.*** The Registration Statement has become effective under the Securities Act. The Company has complied, to the Commission's satisfaction with all requests of the Commission for additional or supplemental information, if any. No stop order suspending the effectiveness of the Registration Statement is in effect and no proceedings for such purpose have been instituted or are pending or, to the knowledge of the Company, are contemplated or threatened by the Commission.

(b) ***Disclosure*****.** Each preliminary prospectus and the Prospectus when filed complied in all material respects with the Securities Act and, if filed by electronic transmission pursuant to EDGAR, was identical (except as may be permitted by Regulation S-T under the Securities Act) to the copy thereof delivered to the Underwriters for use in connection with the offer and sale of the Offered Shares. Each of the Registration Statement and any post-effective amendment thereto, at the time it became or becomes effective, complied and will comply in all material respects with the Securities Act and did not and will not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. As of the Applicable Time, the Time of Sale Prospectus did not, and at the First Closing Date (as defined in Section 2) and at each applicable Option Closing Date (as defined in Section 2), will not, contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading. The Prospectus, as of its date, did not, and at the First Closing Date and at each applicable Option Closing Date, will not, contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The representations and warranties set forth in the three immediately preceding sentences do not apply to statements in or omissions from the Registration Statement or any post-effective amendment thereto, or the Prospectus or the Time of Sale Prospectus, or any amendments or supplements thereto, made in reliance upon and in conformity with written information relating to any Underwriter furnished to the Company in writing by the Representatives expressly for use therein, it being understood and agreed that the only such information consists of the information described in Section 9(b) below. There are no contracts or other documents required to be described in the Time of Sale Prospectus or the Prospectus or to be filed as an exhibit to the Registration Statement which have not been described or filed as required.

(c) ***Free Writing Prospectuses; Road Show*****.** As of the determination date referenced in Rule 164(h) under the Securities Act, the Company was not, is not or will not be (as applicable) an "ineligible issuer" in connection with the offering of the Offered Shares pursuant to Rules 164, 405 and 433 under the Securities Act. Each free writing prospectus that the Company is required to file pursuant to Rule 433(d) under the Securities Act has been, or will be, filed with the Commission in accordance with the requirements of the Securities Act. Each free writing prospectus that the Company has filed, or is required to file, pursuant to Rule 433(d) under the Securities Act or that was prepared by or on behalf of or used or referred to by the Company complies or will comply in all material respects with the requirements of Rule 433 under the Securities Act, including timely filing with the Commission, retention and legending, as applicable, and each such free writing prospectus, as of its issue date and at all subsequent times through the completion of the public offer and sale of the Offered Shares did not, does not and will not include any information that conflicted, conflicts or will conflict with the information contained in the Registration Statement, the Prospectus or any preliminary prospectus and not superseded or modified. Except for the free writing prospectuses, if any, identified in Schedule B, and electronic road shows, if any, furnished to the Representatives before first use, the Company has not prepared, used or referred to, and will not, without the Representatives' prior written consent, prepare, use or refer to, any free writing prospectus. Each Road Show, when considered together with the Time of Sale Prospectus, did not, as of the Applicable Time, contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(d) ***Distribution of Offering Material By the Company*****.** Prior to the later of (i) the expiration or termination of the option granted to the several Underwriters in Section 2, (ii) the completion of the Underwriters' distribution of the Offered Shares and (iii) the expiration of 25 days after the date of the Prospectus**,** the Company has not distributed and will not distribute any offering material in connection with

the offering and sale of the Offered Shares other than the Registration Statement, the Time of Sale Prospectus, the Prospectus or any free writing prospectus reviewed and consented to by the Representatives, the free writing prospectuses, if any, identified on Schedule B hereto and any Permitted Section 5(d) Communications.

(e) ***The Underwriting Agreement.*** This Agreement has been duly authorized, executed and delivered by the Company.

(f) ***Authorization of the Offered Shares.*** The Offered Shares have been duly authorized for issuance and sale pursuant to this Agreement and, when issued and delivered by the Company against payment therefor pursuant to this Agreement, will be validly issued, fully paid and nonassessable, and the issuance and sale of the Offered Shares is not subject to any preemptive rights, rights of first refusal or other similar rights to subscribe for or purchase the Offered Shares.

(g) ***No Applicable Registration or Other Similar Rights.*** There are no persons with registration or other similar rights to have any equity or debt securities registered for sale under the Registration Statement or included in the offering contemplated by this Agreement, except for such rights as have been duly waived.

(h) ***No Material Adverse Change.*** Except as otherwise disclosed in the Registration Statement, the Time of Sale Prospectus and the Prospectus, subsequent to the respective dates as of which information is given in the Registration Statement, the Time of Sale Prospectus and the Prospectus: (i) there has been no material adverse change, or any development that would reasonably be expected to result in a material adverse change, in (A) the condition, financial or otherwise, or in the earnings, business, properties, operations, assets, liabilities or prospects**,** whether or not arising from transactions in the ordinary course of business, of the Company (any such change being referred to herein as a "**Material Adverse Change**"); (ii) the Company has not incurred any material liability or obligation, indirect, direct or contingent, including without limitation any losses or interference with its business from fire, explosion, flood, earthquakes, accident or other calamity, whether or not covered by insurance, or from any strike, labor dispute or court or governmental action, order or decree, that are material, individually or in the aggregate, to the Company, and has not entered into any transactions not in the ordinary course of business; and (iii) there has not been any material decrease in the capital stock or any material increase in any short-term or long-term indebtedness of the Company and there has been no dividend or distribution of any kind declared, paid or made by the Company or, or any repurchase or redemption by the Company of any class of capital stock.

(i) ***Independent Accountants.*** Deloitte & Touche LLP, which has expressed its opinion with respect to the financial statements (which term as used in this Agreement includes the related notes thereto) filed with the Commission as a part of the Registration Statement, the Time of Sale Prospectus and the Prospectus, is (i) an independent registered public accounting firm as required by the Securities Act, the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder (collectively, the "**Exchange Act**"), and the rules of the Public Company Accounting Oversight Board ("**PCAOB**"), (ii) in compliance with the applicable requirements relating to the qualification of accountants under Rule 2-01 of Regulation S-X under the Securities Act and (iii) a registered public accounting firm as defined by the PCAOB whose registration has not been suspended or revoked and who has not requested such registration to be withdrawn.

(j) ***Financial Statements.*** The financial statements filed with the Commission as a part of the Registration Statement, the Time of Sale Prospectus and the Prospectus fairly present, in all material respects, the consolidated financial position of the Company as of the dates indicated and the results of its operations, changes in stockholders' equity and cash flows for the periods specified. Such financial

statements have been prepared in conformity with generally accepted accounting principles as applied in the United States ("**GAAP**") applied on a consistent basis throughout the periods involved, except as may be expressly stated in the related notes thereto. No other financial statements or supporting schedules are required to be included in the Registration Statement, the Time of Sale Prospectus or the Prospectus. The financial data set forth in each of the Registration Statement, the Time of Sale Prospectus and the Prospectus under the captions "Prospectus Summary—Summary Financial Data," "Selected Financial Data" and "Capitalization" fairly present, in all material respects, the information set forth therein on a basis consistent with that of the audited financial statements contained in the Registration Statement, the Time of Sale Prospectus and the Prospectus. To the Company's knowledge, no person who has been suspended or barred from being associated with a registered public accounting firm, or who has failed to comply with any sanction pursuant to Rule 5300 promulgated by the PCAOB, has participated in or otherwise aided the preparation of, or audited, the financial statements, supporting schedules or other financial data filed with the Commission as a part of the Registration Statement, the Time of Sale Prospectus and the Prospectus.

(k) ***Company's Accounting System*****.** The Company makes and keeps accurate books and records and maintains a system of internal accounting controls designed to, and which the Company believes is sufficient, to provide reasonable assurance that: (i) transactions are executed in accordance with management's general or specific authorization; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain accountability for assets; (iii) access to assets is permitted only in accordance with management's general or specific authorization; and (iv) the recorded accountability for assets is compared with existing assets at reasonable intervals and appropriate action is taken with respect to any differences.

(l) ***Disclosure Controls and Procedures; Deficiencies in or Changes to Internal Control Over Financial Reporting*****.** The Company has established and maintains disclosure controls and procedures (as defined in Rules 13a-15 and 15d-15 under the Exchange Act), which (i) are designed to ensure that material information relating to the Company is made known to the Company's principal executive officer and its principal financial officer by others within those entities; and (ii) are effective in all material respects to perform the functions for which they were established, particularly during the periods in which the periodic reports required under the Exchange Act are being prepared (it being understood that neither subsection (k) nor this subsection (l) requires the Company to comply with Section 404 of the Sarbanes Oxley Act of 2002 (the "Sarbanes Oxley Act") as of an earlier date than it would otherwise be required to so comply under applicable law). Since the end of the Company's most recent audited fiscal year, there have been no significant deficiencies or material weakness in the Company's internal control over financial reporting (whether or not remediated) and no change in the Company's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting. The Company is not aware of any change in its internal control over financial reporting that has occurred during its most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

(m) ***Incorporation and Good Standing of the Company*****.** The Company has been duly incorporated and is validly existing as a corporation in good standing under the laws of Delaware and has the corporate power and authority to own, lease and operate its properties and to conduct its business as described in the Registration Statement, the Time of Sale Prospectus and the Prospectus and to enter into and perform its obligations under this Agreement. The Company is duly qualified as a foreign corporation to transact business and is in good standing in the State of California and each other jurisdiction in which such qualification is required, whether by reason of the ownership or leasing of property or the conduct of business, except where the failure to be so qualified or in good standing or to have such power or authority would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change.

(n) ***Subsidiaries*****.** The Company has no subsidiaries.

(o) ***Capitalization and Other Capital Stock Matters*****.** The authorized, issued and outstanding capital stock of the Company is as set forth in the Registration Statement, the Time of Sale Prospectus and the Prospectus under the caption "Capitalization" (other than for subsequent issuances, if any, pursuant to employee benefit plans, or upon the exercise of outstanding options or warrants, in each case, as described in the Registration Statement, the Time of Sale Prospectus and the Prospectus). The Shares (including the Offered Shares) conform in all material respects to the description thereof contained in the Time of Sale Prospectus. All of the issued and outstanding Shares have been duly authorized and validly issued, are fully paid and nonassessable and have been issued in compliance with all federal and state securities laws. None of the outstanding Shares were issued in violation of any preemptive rights, rights of first refusal or other similar rights to subscribe for or purchase securities of the Company. There are no authorized or outstanding options, warrants, preemptive rights, rights of first refusal or other rights to purchase, or equity or debt securities convertible into or exchangeable or exercisable for, any capital stock of the Company other than those described in the Registration Statement, the Time of Sale Prospectus and the Prospectus. The descriptions of the Company's stock option, stock bonus and other stock plans or arrangements, and the options or other rights granted thereunder, set forth in the Registration Statement, the Time of Sale Prospectus and the Prospectus accurately and fairly presents, in all material respects, the information required to be shown with respect to such plans, arrangements, options and rights.

(p) ***Stock Exchange Listing*****.** The Offered Shares have been approved for listing on The Nasdaq Global Select Market (the "**Nasdaq**"), subject only to official notice of issuance.

(q) ***Non-Contravention of Existing Instruments; No Further Authorizations or Approvals Required*****.** The Company is not in violation of its charter or by-laws, partnership agreement or operating agreement or similar organizational documents, as applicable, or is in default (or, with the giving of notice or lapse of time, would be in default) ("**Default**") under any indenture, loan, credit agreement, note, lease, license agreement, contract, franchise or other instrument (including, without limitation, any pledge agreement, security agreement, mortgage or other instrument or agreement evidencing, guaranteeing, securing or relating to indebtedness) to which the Company is a party or by which it or any of them may be bound, or to which any of its properties or assets are subject (each, an "**Existing Instrument**"), except for such Defaults as would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change. The Company's execution, delivery and performance of this Agreement, consummation of the transactions contemplated hereby and by the Registration Statement, the Time of Sale Prospectus and the Prospectus and the issuance and sale of the Offered Shares (including the use of proceeds from the sale of the Offered Shares as described in the Registration Statement, the Time of Sale Prospectus and the Prospectus under the caption "Use of Proceeds") (i) have been duly authorized by all necessary corporate action and will not result in any violation of the provisions of the charter or by-laws, partnership agreement or operating agreement or similar organizational documents, as applicable, of the Company (ii) will not conflict with or constitute a breach of, or Default or a Debt Repayment Triggering Event (as defined below) under, or result in the creation or imposition of any lien, charge or encumbrance upon any property or assets of the Company pursuant to, or require the consent of any other party to, any Existing Instrument and (iii) will not result in any violation of any law, administrative regulation or administrative or court decree applicable to the Company, except in the case of clauses (ii) and (iii) as would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change. No consent, approval, authorization or other order of, or registration or filing with, any court or other governmental or regulatory authority or agency, is required for the Company's execution, delivery and performance of this Agreement and consummation of the transactions contemplated hereby and by the Registration Statement, the Time of Sale Prospectus and the Prospectus, except such as have been obtained or made by the Company and are in full force and effect under the Securities Act and such as may be required under applicable state securities or blue sky laws or the Financial Industry Regulatory Authority, Inc. ("**FINRA**"). As used herein, a "**Debt Repayment Triggering Event**" means any event or condition which gives, or with the giving of notice or lapse of time would give, the holder of any note, debenture or other evidence of indebtedness (or any person acting on such holder's behalf) the right to require the repurchase, redemption or repayment of all or a portion of such indebtedness by the Company.

(r) ***Compliance with Laws.*** The Company has been and is in compliance with all applicable laws, rules and regulations, except where failure to be so in compliance would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change.

(s) ***No Material Actions or Proceedings*****.** There is no action, suit, proceeding, inquiry or investigation brought by or before any legal or governmental entity now pending or, to the knowledge of the Company, threatened, against or affecting the Company, which would reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change or materially and adversely affect the consummation of the transactions contemplated by this Agreement or the performance by the Company of its obligations hereunder. No material labor dispute with the employees of the Company, or with the employees of any principal supplier, manufacturer, customer or contractor of the Company, exists or, to the knowledge of the Company, is threatened or imminent.

(t) ***Intellectual Property Rights.*** The Company owns, or has obtained valid and enforceable licenses for, the inventions, patent applications, patents, trademarks, trade names, service names, copyrights, trade secrets and other intellectual property described in the Registration Statement, the Time of Sale Prospectus and the Prospectus as being owned (collectively, "**Company Intellectual Property**") or licensed (collectively, "**Licensed Intellectual Property**") by them and which are necessary for the conduct of its business as currently conducted or as currently proposed to be conducted, and to the Company's knowledge, the conduct of its business does not and, to the Company's knowledge, will not upon the commercialization of any product or program disclosed in the Registration Statement, the Time of Sale Prospectus or the Prospectus as under development infringe, misappropriate or otherwise conflict in any material respect with any such rights of others. The Company Intellectual Property has not been adjudged by a court of competent jurisdiction to be invalid or unenforceable, in whole or in part, and the Company is unaware of any facts that would form a reasonable basis for any such adjudication. To the Company's knowledge: (i) there are no third parties who have rights to any Company Intellectual Property; and (ii) there is no current infringement by third parties of Company Intellectual Property. There is no pending or, to the Company's knowledge, threatened action, suit, proceeding or claim by others: (A) challenging the Company's rights in or to any Company Intellectual Property, and the Company is unaware of any facts that would form a reasonable basis for any such action, suit, proceeding or claim; (B) challenging the validity, enforceability or scope of any Company Intellectual Property, and the Company is unaware of any facts that would form a reasonable basis for any such action, suit, proceeding or claim; or (C) asserting that the Company infringes or otherwise violates, or would, upon the commercialization of any product or service described in the Registration Statement, the Time of Sale Prospectus or the Prospectus as under development, infringe or violate, any patent, trademark, trade name, service name, copyright, trade secret or other proprietary rights of others, and the Company is unaware of any facts that would form a reasonable basis for any such action, suit, proceeding or claim. The Company has complied with the terms of each agreement pursuant to which Licensed Intellectual Property has been licensed to the Company, and all such agreements are in full force and effect. To the Company's knowledge, there are no material defects in any of the patents or patent applications included in the Company Intellectual Property. The Company has taken all reasonable steps to protect, maintain and safeguard Company Intellectual Property, including the execution of appropriate nondisclosure, confidentiality agreements and invention assignment agreements and invention assignments with its employees, and to the knowledge of the Company no employee of the Company is in or has been in violation of any term of any employment contract, patent disclosure agreement, invention assignment agreement, non-competition agreement, non-solicitation agreement, nondisclosure agreement, or any restrictive covenant to or with a former employer where the basis of such violation relates to such employee's employment with the Company. The duty of candor and good faith as required by the United States Patent and Trademark Office during the prosecution of the United States

patents and patent applications included in the Company Intellectual Property have been reasonably complied with; and in all foreign offices having similar requirements, all such requirements have been reasonably complied with. To the Company's knowledge, none of the Company Intellectual Property or technology (including information technology and outsourced arrangements) employed by the Company has been obtained or is being used by the Company in violation of any contractual obligation binding on the Company or any of its officers, directors or employees or otherwise in violation of the rights of any persons. The product candidates described in the Registration Statement, the Time of Sale Prospectus and the Prospectus as under development by the Company and/or their described use fall within the scope of the claims of one or more patents or pending patent applications owned by the Company.

(u) ***All Necessary Permits, etc*****.** The Company possesses such valid and current certificates, authorizations or permits required by state, federal or foreign regulatory agencies or bodies to conduct its business as currently conducted and as described in the Registration Statement, the Time of Sale Prospectus or the Prospectus ("**Permits**"), except where the failure to so possess would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change. The Company is not in violation of, or in default under, any of the Permits and has not received any notice of proceedings relating to the revocation or modification of, or non-compliance with, any such certificate, authorization or permit, except where such violation or default would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change.

(v) ***Title to Properties*****.** The Company has good and marketable title to all of the personal property and other assets reflected as owned in the financial statements referred to in Section 1(j) above (or elsewhere in the Registration Statement, the Time of Sale Prospectus or the Prospectus), in each case free and clear of any security interests, mortgages, liens, encumbrances, equities, adverse claims and other defects, except as would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change. The real property, improvements, equipment and personal property held under lease by the Company is held under valid and enforceable leases, with such exceptions as are not material and do not materially interfere with the use made or proposed to be made of such real property, improvements, equipment or personal property by the Company. The Company does not own any real property.

(w) ***Tax Law Compliance*****.** The Company has filed all necessary federal, state and foreign income and franchise tax returns or has properly requested extensions thereof, except where the failure to so file would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change, and has paid all taxes required to be paid by it and, if due and payable, any related or similar assessment, fine or penalty levied against it except as may be being contested in good faith and by appropriate proceedings or where the failure to make such payment would not reasonably be expected to result in a Material Adverse Change. The Company has made adequate charges, accruals and reserves in the applicable financial statements referred to in Section 1(j) above in respect of all federal, state and foreign income and franchise taxes for all periods as to which the tax liability of the Company has not been finally determined.

(x) ***Insurance*****.** The Company is insured by recognized, financially sound and reputable institutions with policies in such amounts and with such deductibles and covering such risks as are generally deemed adequate and customary for its business including, but not limited to, policies covering real and personal property owned or leased by the Company against theft, damage, destruction, and acts of vandalism and policies covering the Company for product liability claims and clinical trial liability claims. The Company has no reason to believe that it will not be able (i) to renew its existing insurance coverage as and when such policies expire or (ii) to obtain comparable coverage from similar institutions as may be necessary or appropriate to conduct its business as now conducted and at a cost that would not reasonably be expected to result in a Material Adverse Change. The Company has not been denied any insurance coverage which it has sought or for which it has applied.

(y) ***Compliance with Environmental Laws*****.** Except as would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change: (i) the Company is not in violation of any federal, state, local or foreign statute, law, rule, regulation, ordinance, code, policy or rule of common law or any judicial or administrative interpretation thereof, including any judicial or administrative order, consent, decree or judgment, relating to pollution or protection of human health, the environment (including, without limitation, ambient air, surface water, groundwater, land surface or subsurface strata) or wildlife, including, without limitation, laws and regulations relating to the release or threatened release of chemicals, pollutants, contaminants, wastes, toxic substances, hazardous substances, petroleum or petroleum products (collectively, "**Hazardous Materials**") or to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of Hazardous Materials (collectively, "**Environmental Laws**"); (ii) the Company has all permits, authorizations and approvals required under any applicable Environmental Laws and is in compliance with its requirements; (iii) there are no pending or, to the Company's knowledge, threatened administrative, regulatory or judicial actions, suits, demands, demand letters, claims, liens, notices of noncompliance or violation, investigation or proceedings relating to any Environmental Law against the Company; and (iv) to the Company's knowledge, there are no events or circumstances that might reasonably be expected to form the basis of an order for clean-up or remediation, or an action, suit or proceeding by any private party or governmental body or agency, against or affecting the Company relating to Hazardous Materials or any Environmental Laws.

(z) ***ERISA Compliance*****.** The Company and any "employee benefit plan" (as defined under the Employee Retirement Income Security Act of 1974, as amended, and the regulations and published interpretations thereunder (collectively, "**ERISA**")) established or maintained by the Company, or, to the knowledge of the Company, its "ERISA Affiliates" (as defined below) are in compliance in all material respects with ERISA. "**ERISA Affiliate**" means, with respect to the Company, any member of any group of organizations described in Sections 414(b), (c), (m) or (o) of the Internal Revenue Code of 1986, as amended, and the regulations and published interpretations thereunder (the "**Code**") of which the Company is a member. No "reportable event" (as defined under ERISA) has occurred or is reasonably expected to occur with respect to any "employee benefit plan" established or maintained by the Company or any of its ERISA Affiliates. No "employee benefit plan" established or maintained by the Company or any of its ERISA Affiliates, if such "employee benefit plan" were terminated, would have any "amount of unfunded benefit liabilities" (as defined under ERISA). Neither the Company nor any of its ERISA Affiliates has incurred or reasonably expects to incur any liability under (i) Title IV of ERISA with respect to termination of, or withdrawal from, any "employee benefit plan" or (ii) Sections 412, 4971, 4975 or 4980B of the Code. Each employee benefit plan established or maintained by the Company or any of its ERISA Affiliates that is intended to be qualified under Section 401(a) of the Code is so qualified and, to the Company's knowledge, nothing has occurred, whether by action or failure to act, which would cause the loss of such qualification.

(aa) ***Company Not an "Investment Company."*** The Company is not, and will not be, either after receipt of payment for the Offered Shares or after the application of the proceeds therefrom as described under "Use of Proceeds" in the Registration Statement, the Time of Sale Prospectus or the Prospectus, required to register as an "investment company" under the Investment Company Act of 1940, as amended (the **"Investment Company Act")**.

(bb) ***No Price Stabilization or Manipulation; Compliance with Regulation M*****.** The Company has not taken, directly or indirectly, any action designed to or that would reasonably be expected to cause or result in stabilization or manipulation of the price of the Shares or of any "reference security" (as defined in Rule 100 of Regulation M under the Exchange Act (**"Regulation M"**)) with respect to the Shares, whether to facilitate the sale or resale of the Offered Shares or otherwise, and has not taken any action which would directly or indirectly violate Regulation M.

(cc) ***Related-Party Transactions*****.** There are no business relationships or related-party transactions involving the Company or any other person required to be described in the Registration Statement, the Time of Sale Prospectus or the Prospectus that have not been described as required.

(dd) ***FINRA Matters*****.** All of the information provided to the Underwriters or to counsel for the Underwriters by the Company, its officers and directors and, to the Company's knowledge, its counsel and the holders of any securities (debt or equity) or options to acquire any securities of the Company in connection with the offering of the Offered Shares is true, complete and correct in all material respects and compliant with FINRA's rules and any letters, filings or other supplemental information provided to FINRA pursuant to FINRA Rules or NASD Conduct Rules is true, complete and correct in all material respects.

(ee) ***Parties to Lock-Up Agreements*****.** The Company has furnished to the Underwriters a letter agreement in the form attached hereto as Exhibit A (the "**Lock-up Agreement**") from each director and officer and from substantially all of the securityholders of the Company. If any additional persons shall become directors or executive officers of the Company prior to the end of the Company Lock-up Period (as defined below), the Company shall cause each such person, prior to or contemporaneously with their appointment or election as a director or executive officer of the Company, to execute and deliver to the Representatives a Lock-up Agreement.

(ff) ***Statistical and Market-Related Data*****.** All statistical, demographic and market-related data included in the Registration Statement, the Time of Sale Prospectus or the Prospectus are based on or derived from sources that the Company believes, after reasonable inquiry, to be reliable and accurate in all material respects. To the extent required, the Company has obtained the written consent to the use of such data from such sources.

(gg) ***No Unlawful Contributions or Other Payments*****.** Neither the Company nor, to the Company's knowledge, any employee or agent of the Company, has made any contribution or other payment to any official of, or candidate for, any federal, state or foreign office in violation of any law or of the character required to be disclosed in the Registration Statement, the Time of Sale Prospectus or the Prospectus.

(hh) ***Anti-Corruption and Anti-Bribery Laws*****.** Neither the Company nor, to the knowledge of the Company, any director, officer or employee of the Company, or any agent, affiliate or other person acting on behalf of the Company has, in the course of its actions for, or on behalf of, the Company (i) used any corporate funds for any unlawful contribution, gift, entertainment or other unlawful expenses relating to political activity; (ii) made or taken any act in furtherance of an offer, promise, or authorization of any direct or indirect unlawful payment or benefit to any foreign or domestic government official or employee, including of any government-owned or controlled entity or public international organization, or any political party, party official, or candidate for political office; (iii) violated or is in violation of any provision of the U.S. Foreign Corrupt Practices Act of 1977, as amended (the "**FCPA**"), the UK Bribery Act 2010, or any other applicable anti-bribery or anti-corruption law; or (iv) made, offered, authorized, requested, or taken an act in furtherance of any unlawful bribe, rebate, payoff, influence payment, kickback or other unlawful payment or benefit. The Company and, to the knowledge of the Company, the Company's affiliates have conducted its business in compliance with the FCPA and have instituted and maintain policies and procedures designed to ensure, and which are reasonably expected to continue to ensure, continued compliance therewith.

(ii) ***Money Laundering Laws*****.** The operations of the Company is, and has been conducted at all times, in compliance with applicable financial recordkeeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all applicable jurisdictions, the rules and regulations thereunder and any related or similar applicable rules, regulations or guidelines, issued, administered or enforced by any governmental agency (collectively, the "**Money Laundering Laws**") and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company with respect to the Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

(jj) ***Sanctions*****.** Neither the Company nor, to the knowledge of the Company, after due inquiry, any of its directors, officers, employees, agents, affiliates or other person acting on behalf of the Company is currently the subject or the target of any U.S. sanctions administered by the Office of Foreign Assets Control of the U.S. Department of the Treasury ("**OFAC**") or the U.S. Department of State, the United Nations Security Council, the European Union, Her Majesty's Treasury of the United Kingdom, or other relevant sanctions authority (collectively, "**Sanctions**"); nor is the Company located, organized or resident in a country or territory that is the subject or the target of Sanctions, including, without limitation, Crimea, Cuba, Iran, North Korea, and Syria; and the Company will not directly or indirectly use the proceeds of this offering, or lend, contribute or otherwise make available such proceeds to any joint venture partner or other person or entity, for the purpose of financing the activities of or business with any person, or in any country or territory, that at the time of such financing, is the subject or the target of Sanctions or in any other manner that will result in a violation by any person (including any person participating in the transaction whether as underwriter, advisor, investor or otherwise) of applicable Sanctions. For the past five years, the Company has not knowingly engaged in and is not now knowingly engaged in any dealings or transactions with any person that at the time of the dealing or transaction is or was the subject or the target of Sanctions or with any Sanctioned Country.

(kk) ***Brokers*****.** Except pursuant to this Agreement, there is no broker, finder or other party that is entitled to receive from the Company any brokerage or finder's fee or other fee or commission as a result of any transactions contemplated by this Agreement.

(ll) ***Forward-Looking Statements.*** Each financial or operational projection or other "forward-looking statement" (as defined by Section 27A of the Securities Act or Section 21E of the Exchange Act) contained in the Registration Statement, the Time of Sale Prospectus or the Prospectus (i) was so included by the Company in good faith and with reasonable basis after due consideration by the Company of the underlying assumptions, estimates and other applicable facts and circumstances and (ii) is accompanied by meaningful cautionary statements identifying those factors that could cause actual results to differ materially from those in such forward-looking statement. No such statement, at the time it was made, was made with the knowledge of an executive officer or director of the Company that it was false or misleading.

(mm) ***No Outstanding Loans or Other Extensions of Credit***. The Company does not have any outstanding extension of credit, in the form of a personal loan, to or for any director or executive officer (or equivalent thereof) of the Company except for such extensions of credit as are expressly permitted by Section 13(k) of the Exchange Act.

(nn) ***Cybersecurity***. Except as would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change, the Company's information technology assets and equipment, computers, systems, networks, hardware, software, websites, applications, and databases (collectively, "**IT Systems**") are adequate for, and operate and perform in all material respects as required in connection with the operation of the business of the Company as currently conducted, free and clear of all bugs, errors, defects, Trojan horses, time bombs, malware and other corruptants. The Company has

implemented and maintained commercially reasonable physical, technical and administrative controls, policies, procedures, and safeguards to maintain and protect their material confidential information and the integrity, continuous operation, redundancy and security of all IT Systems and data, including "Personal Data," used in connection with their businesses. "**Personal Data**" means (i) a natural person's name, street address, telephone number, e-mail address, photograph, social security number or tax identification number, driver's license number, passport number, credit card number, bank information, or customer or account number; (ii) any information which would qualify as "personally identifying information" under the Federal Trade Commission Act, as amended; (iii) "personal data" as defined by GDPR; (iv) any information which would qualify as "protected health information" under the Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Health Act (collectively, "**HIPAA**"); and (v) any other piece of information that allows the identification of such natural person, or his or her family, or permits the collection or analysis of any data related to an identified person's health or sexual orientation. Except as would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change, there have been no breaches, violations, outages or unauthorized uses of or accesses to same, except for those that have been remedied without cost or liability or the duty to notify any other person, nor any incidents under internal review or investigations relating to the same. The Company is presently in material compliance with all applicable laws or statutes and all judgments, orders, rules and regulations of any court or arbitrator or governmental or regulatory authority, internal policies and contractual obligations relating to the privacy and security of IT Systems and Personal Data and to the protection of such IT Systems and Personal Data from unauthorized use, access, misappropriation or modification.

(oo) ***Compliance with Data Privacy Laws***. The Company is, and at all prior times was, in material compliance with all applicable state and federal data privacy and security laws and regulations, including without limitation HIPAA, and the Company has taken commercially reasonable actions to prepare to comply with, and since May 25, 2018, has been and currently is in compliance with, the European Union General Data Protection Regulation ("**GDPR**") (EU 2016/679) (collectively, the "**Privacy Laws**"). To ensure compliance with the Privacy Laws, the Company has in place, complies with, and takes appropriate steps reasonably designed to ensure compliance in all material respects with its policies and procedures relating to data privacy and security and the collection, storage, use, disclosure, handling, and analysis of Personal Data (the "**Policies**"). The Company has, except as would not reasonably be expected, individually or in the aggregate, to result in material liability to the Company, at all times made all disclosures to users or customers required by applicable laws and regulatory rules or requirements, and none of such disclosures made or contained in any Policy have, to the knowledge of the Company, been inaccurate or in violation of any applicable laws and regulatory rules or requirements in any material respect. The Company further certifies that it: (i) has not received notice of any actual or potential liability under or relating to, or actual or potential violation of, any of the Privacy Laws, and has no knowledge of any event or condition that would reasonably be expected to result in any such notice; (ii) is not currently conducting or paying for, in whole or in part, any investigation, remediation, or other corrective action pursuant to any Privacy Law; or (iii) is not a party to any order, decree, or agreement that imposes any obligation or liability under any Privacy Law.

(pp) ***Emerging Growth Company Status***. From the time of initial confidential submission of the Registration Statement to the Commission (or, if earlier, the first date on which the Company engaged in any Section 5(d) Written Communication or any Section 5(d) Oral Communication) through the date hereof, the Company has been and is an "emerging growth company," as defined in Section 2(a) of the Securities Act (an "**Emerging Growth Company**").

(qq) ***Communications***. The Company (i) has not alone engaged in communications with potential investors in reliance on Section 5(d) of the Securities Act other than Section 5(d) Oral Communications and Permitted Section 5(d) Communications with the consent of the Representatives with entities that are QIBs or IAIs and (ii) has not authorized anyone other than the Representatives to engage in such communications; the Company reconfirms that the Representatives have been authorized to act on its behalf in undertaking Marketing Materials, Section 5(d) Oral Communications and Section 5(d) Written Communications; as of the Applicable Time, each Permitted Section 5(d) Communication, when considered together with the Time of Sale Prospectus, did not, as of the Applicable Time, include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; and each Permitted Section 5(d) Communication, if any, does not, as of the date hereof, conflict with the information contained in the Registration Statement, the Preliminary Prospectus and the Prospectus; and the Company has filed publicly on EDGAR at least 15 calendar days prior to any "road show" (as defined in Rule 433 under the Securities Act), any confidentially submitted registration statement and registration statement amendments relating to the offer and sale of the Offered Shares.

(rr) ***Clinical Data and Regulatory Compliance.*** The preclinical tests and clinical trials, and other studies (collectively, "studies") being conducted by the Company that are described in, or the results of which are referred to in, the Registration Statement, the Time of Sale Prospectus or the Prospectus were and, if still pending, are being conducted in all material respects in accordance with the protocols, procedures and controls designed and approved for such studies and with standard medical and scientific research procedures; each description of the results of such studies is accurate and complete in all material respects and fairly presents the data derived from such studies, and the Company has no knowledge of any other studies the results of which are inconsistent with, or otherwise call into question, the results described or referred to in the Registration Statement, the Time of Sale Prospectuses or the Prospectus; the Company has made all such filings and obtained all such approvals as may be required by the Food and Drug Administration of the U.S. Department of Health and Human Services or from any other U.S. or foreign government or drug regulatory agency, or health care facility Institutional Review Board (collectively, the "**Regulatory Agencies**") for the conduct of its business as described in the Registration Statement, the Time of Sale Prospectus and the Prospectus, except where the failure to do so would not reasonably be expected to result in a Material Adverse Change; the Company has not received any notice of, or correspondence from, any Regulatory Agency requiring the termination or suspension of any clinical trials that are described or referred to in the Registration Statement, the Time of Sale Prospectus or the Prospectus; and the Company has operated and currently is in compliance in all material respects with all applicable rules, regulations and policies of the Regulatory Agencies, except where any noncompliance with such rules and regulations would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change.

(ss) ***Compliance with Health Care Laws***. The Company is, and at all times has been, in compliance with all applicable Health Care Laws, except where the failure to do so would not reasonably be expected to result in a Material Adverse Change. For purposes of this Agreement, "Health Care Laws" means: (i) the Federal Food, Drug, and Cosmetic Act (21 U.S.C. Section 301 et seq.), the Public Health Service Act (42 U.S.C. Section 201 et seq.), and the regulations promulgated thereunder; (ii) all applicable federal, state, local and foreign health care fraud and abuse laws, including, without limitation, the Anti-Kickback Statute (42 U.S.C. Section 1320a-7b(b)), the Civil False Claims Act (31 U.S.C. Section 3729 et seq.), the criminal false statements law (42 U.S.C. Section 1320a-7b(a)), 18 U.S.C. Sections 286 and 287, the health care fraud criminal provisions under HIPAA (42 U.S.C. Section 1320d et seq.), the Stark Law (42 U.S.C. Section

1395nn), the civil monetary penalties law (42 U.S.C. Section 1320a-7a), the exclusion law (42 U.S.C. Section 1320a-7), the Physician Payments Sunshine Act (42 U.S.C. Section 1320-7h), and applicable laws governing government funded or sponsored healthcare programs; (iii) the Patient Protection and Affordable Care Act of 2010, as amended by the Health Care and Education Reconciliation Act of 2010; (iv) licensure, quality, safety and accreditation requirements under applicable federal, state, local or foreign laws or regulatory bodies; (v) all other local, state, federal, national, supranational and foreign laws, relating to the regulation of the Company, and (vi) the directives and regulations promulgated pursuant to such statutes and any state or non-U.S. counterpart thereof. The Company has not received written notice of any claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from any court or arbitrator or governmental or regulatory authority or third party alleging that any product operation or activity is in violation of any Health Care Laws nor, to the Company's knowledge, is any such claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action threatened. The Company has filed, maintained or submitted all material reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by any Health Care Laws, and all such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were complete and accurate on the date filed in all material respects (or were corrected or supplemented by a subsequent submission). The Company is not a party to any corporate integrity agreements, monitoring agreements, consent decrees, settlement orders, or similar agreements with or imposed by any governmental or regulatory authority. Additionally, neither the Company nor any of its employees, officers, directors, or agents has been excluded, suspended or debarred from participation in any U.S. federal health care program or human clinical research or, to the knowledge of the Company, is subject to a governmental inquiry, investigation, proceeding, or other similar action that could reasonably be expected to result in debarment, suspension, or exclusion.

(tt) ***No Rights to Purchase Preferred Stock.*** The issuance and sale of the Shares as contemplated hereby will not cause any holder of any shares of capital stock, securities convertible into or exchangeable or exercisable for capital stock or options, warrants or other rights to purchase capital stock or any other securities of the Company to have any right to acquire any shares of preferred stock of the Company.

(uu) ***No Contract Terminations.*** The Company has not sent or received any communication regarding termination of, or intent not to renew, any of the contracts or agreements referred to or described in any preliminary prospectus, the Prospectus or any free writing prospectus, or referred to or described in, or filed as an exhibit to, the Registration Statement, and no such termination or non-renewal has been threatened by the Company or, to the Company's knowledge, any other party to any such contract or agreement, which threat of termination or non-renewal has not been rescinded as of the date hereof.

(vv) ***No Ratings***. There are (and prior to the Closing Date, will be) no debt securities or preferred stock issued or guaranteed by the Company that are rated by a "nationally recognized statistical rating organization", as such term is defined in Section 3(a)(62) of the Exchange Act.

(ww) ***Sarbanes Oxley Act.*** There is and has been no failure on the part of the Company or, to the Company's knowledge, any of the Company's directors or officers, in their capacities as such, to comply with any applicable provision of the Sarbanes Oxley Act, applicable as of the effective date of the Registration Statement, including Section 402 related to loans.

Any certificate signed by any officer of the Company and delivered to any Underwriter or to counsel for the Underwriters in connection with the offering, or the purchase and sale, of the Offered Shares shall be deemed a representation and warranty by the Company to each Underwriter as to the matters covered thereby.

The Company has a reasonable basis for making each of the representations set forth in this Section 1. The Company acknowledges that the Underwriters and, for purposes of the opinions to be delivered pursuant to Section 6 hereof, counsel to the Company and counsel to the Underwriters, will rely upon the accuracy and truthfulness of the foregoing representations and hereby consents to such reliance.

Section 2. Purchase, Sale and Delivery of the Offered Shares.

(a) ***The Firm Shares*****.** Upon the terms herein set forth, the Company agrees to issue and sell to the several Underwriters an aggregate of [•] Firm Shares. On the basis of the representations, warranties and agreements herein contained, and upon the terms but subject to the conditions herein set forth, the Underwriters agree, severally and not jointly, to purchase from the Company the respective number of Firm Shares set forth opposite their names on Schedule A. The purchase price per Firm Share to be paid by the several Underwriters to the Company shall be $[•] per share.

(b) ***The First Closing Date*****.** Delivery of the Firm Shares to be purchased by the Underwriters and payment therefor shall be made at the offices of Cooley LLP (or such other place as may be agreed to by the Company and the Representatives) at 9:00 a.m. New York City time, on September [•], 2019**,** or such other time and date not later than 1:30 p.m. New York City time, on September [•], 2019 as the Representatives shall designate by notice to the Company (the time and date of such closing are called the "**First Closing Date**"). The Company hereby acknowledges that circumstances under which the Representatives may provide notice to postpone the First Closing Date as originally scheduled include, but are not limited to, any determination by the Company or the Representatives to recirculate to the public copies of an amended or supplemented Prospectus or a delay as contemplated by the provisions of Section 11.

(c) ***The Optional Shares; Option Closing Date*****.** In addition, on the basis of the representations, warranties and agreements herein contained, and upon the terms but subject to the conditions herein set forth, the Company hereby grants an option to the several Underwriters to purchase, severally and not jointly, up to an aggregate of [•] Optional Shares from the Company at the purchase price per share to be paid by the Underwriters for the Firm Shares. The option granted hereunder may be exercised at any time and from time to time in whole or in part upon notice by the Representatives to the Company, which notice may be given at any time within 30 days from the date of this Agreement. Such notice shall set forth (i) the aggregate number of Optional Shares as to which the Underwriters are exercising the option and (ii) the time, date and place at which the Optional Shares will be delivered (which time and date may be simultaneous with, but not earlier than, the First Closing Date; and in the event that such time and date are simultaneous with the First Closing Date, the term "**First Closing Date**" shall refer to the time and date of delivery of the Firm Shares and such Optional Shares). Any such time and date of delivery, if subsequent to the First Closing Date, is called an "**Option Closing Date**," and shall be determined by the Representatives and shall not be earlier than two or later than five full business days after delivery of such notice of exercise. If any Optional Shares are to be purchased, each Underwriter agrees, severally and not jointly, to purchase the number of Optional Shares (subject to such adjustments to eliminate fractional shares as the Representatives may determine) that bears the same proportion to the total number of Optional Shares to be purchased as the number of Firm Shares set forth on Schedule A opposite the name of such Underwriter bears to the total number of Firm Shares. The Representatives may cancel the option at any time prior to its expiration by giving written notice of such cancellation to the Company.

(d) ***Public Offering of the Offered Shares*****.** The Representatives hereby advise the Company that the Underwriters intend to offer for sale to the public, initially on the terms set forth in the Registration Statement, the Time of Sale Prospectus and the Prospectus, their respective portions of the Offered Shares as soon after this Agreement has been executed and the Registration Statement has been declared effective as the Representatives, in their sole judgment, have determined is advisable and practicable.

(e) ***Payment for the Offered Shares*****.** (i) Payment for the Offered Shares shall be made at the First Closing Date (and, if applicable, at each Option Closing Date) by wire transfer of immediately available funds to the order of the Company.

(ii) It is understood that the Representatives have been authorized, for their own account and the accounts of the several Underwriters, to accept delivery of and receipt for, and make payment of the purchase price for, the Firm Shares and any Optional Shares the Underwriters have agreed to purchase. Each of Jefferies, Piper Jaffray and Stifel, individually and not as the Representatives of the Underwriters, may (but shall not be obligated to) make payment for any Offered Shares to be purchased by any Underwriter whose funds shall not have been received by the Representatives by the First Closing Date or the applicable Option Closing Date, as the case may be, for the account of such Underwriter, but any such payment shall not relieve such Underwriter from any of its obligations under this Agreement.

(f) ***Delivery of the Offered Shares*****.** The Company shall deliver, or cause to be delivered, through the facilities of the Depository Trust Company ("**DTC**") unless the Representatives otherwise instruct, to the Representatives for the accounts of the several Underwriters the Firm Shares at the First Closing Date, against release of a wire transfer of immediately available funds for the amount of the purchase price therefor. The Company shall also deliver, or cause to be delivered, through the facilities of DTC unless the Representatives otherwise instruct, to the Representatives for the accounts of the several Underwriters, the Optional Shares the Underwriters have agreed to purchase at the First Closing Date or the applicable Option Closing Date, as the case may be, against the release of a wire transfer of immediately available funds for the amount of the purchase price therefor. The Offered Shares shall be registered in such names and denominations as the Representatives shall have requested at least two full business days prior to the First Closing Date (or the applicable Option Closing Date, as the case may be) and shall be made available for inspection on the business day preceding the First Closing Date (or the applicable Option Closing Date, as the case may be) at a location in New York City as the Representatives may designate. Time shall be of the essence, and delivery at the time and place specified in this Agreement is a further condition to the obligations of the Underwriters.

Section 3. Additional Covenants. The Company further covenants and agrees with each Underwriter as follows:

(a) ***Delivery of Registration Statement, Time of Sale Prospectus and Prospectus.*** The Company shall furnish to the Representatives in New York City, without charge, prior to 10:00 a.m. New York City time on the second business day following the date of this Agreement and during the period when a prospectus relating to the Offered Shares is required by the Securities Act to be delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule) in connection with sales of the Offered Shares, as many copies of the Time of Sale Prospectus, the Prospectus and any supplements and amendments thereto or to the Registration Statement as the Representatives may reasonably request.

(b) ***Representatives' Review of Proposed Amendments and Supplements.*** During the period when a prospectus relating to the Offered Shares is required by the Securities Act to be delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule), the Company (i) will furnish to the Representatives for review, a reasonable period of time prior to the proposed time of filing of any proposed amendment or supplement to the Registration Statement, a copy of each such amendment or supplement and (ii) will not amend or supplement the Registration Statement without the Representatives' prior written consent, which consent shall not be unreasonably withheld, conditioned or delayed. Prior to amending or supplementing any preliminary prospectus, the Time of Sale Prospectus or the Prospectus, the Company shall furnish to the Representatives for review, a reasonable amount of time prior to the time of filing or use of the proposed amendment or supplement, a copy of each such proposed

amendment or supplement. The Company shall not file or use any such proposed amendment or supplement without the Representatives' prior written consent, which consent shall not be unreasonably withheld, conditioned or delayed. The Company shall file with the Commission within the applicable period specified in Rule 424(b) under the Securities Act any prospectus required to be filed pursuant to such Rule.

(c) ***Free Writing Prospectuses.*** The Company shall furnish to the Representatives for review, a reasonable amount of time prior to the proposed time of filing or use thereof, a copy of each proposed free writing prospectus or any amendment or supplement thereto prepared by or on behalf of, used by, or referred to by the Company, and the Company shall not file, use or refer to any proposed free writing prospectus or any amendment or supplement thereto without the Representatives' prior written consent, which consent shall not be unreasonably withheld, conditioned or delayed. The Company shall furnish to each Underwriter, without charge, as many copies of any free writing prospectus prepared by or on behalf of, used by or referred to by the Company as such Underwriter may reasonably request. If at any time when a prospectus is required by the Securities Act to be delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule) in connection with sales of the Offered Shares (but in any event if at any time through and including the First Closing Date) there occurred or occurs an event or development as a result of which any free writing prospectus prepared by or on behalf of, used by, or referred to by the Company conflicted or would conflict with the information contained in the Registration Statement or included or would include an untrue statement of a material fact or omitted or would omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances prevailing at such time, not misleading, the Company shall promptly amend or supplement such free writing prospectus to eliminate or correct such conflict so that the statements in such free writing prospectus as so amended or supplemented will not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances prevailing at such time, not misleading, as the case may be; *provided*, *however*, that prior to amending or supplementing any such free writing prospectus, the Company shall furnish to the Representatives for review, a reasonable amount of time prior to the proposed time of filing or use thereof, a copy of such proposed amended or supplemented free writing prospectus, and the Company shall not file, use or refer to any such amended or supplemented free writing prospectus without the Representatives' prior written consent, which consent shall not be unreasonably withheld, conditioned or delayed.

(d) ***Filing of Underwriter Free Writing Prospectuses.*** The Company shall not take any action that would result in an Underwriter or the Company being required to file with the Commission pursuant to Rule 433(d) under the Securities Act a free writing prospectus prepared by or on behalf of such Underwriter that such Underwriter otherwise would not have been required to file thereunder.

(e) ***Amendments and Supplements to Time of Sale Prospectus.*** If the Time of Sale Prospectus is being used to solicit offers to buy the Offered Shares at a time when the Prospectus is not yet available to prospective purchasers, and any event shall occur or condition exist as a result of which it is necessary to amend or supplement the Time of Sale Prospectus so that the Time of Sale Prospectus does not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances when delivered to a prospective purchaser, not misleading, or if any event shall occur or condition exist as a result of which the Time of Sale Prospectus conflicts with the information contained in the Registration Statement, or if, in the opinion of counsel for the Underwriters, it is necessary to amend or supplement the Time of Sale Prospectus to comply with applicable law, the Company shall (subject to Section 3(b) and Section 3(c) hereof) promptly prepare, file with the Commission and furnish, at its own expense, to the Underwriters and to any dealer upon request, either amendments or supplements to the Time of Sale Prospectus so that the statements in the Time of Sale Prospectus as so amended or supplemented will not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances when delivered to a prospective purchaser, not misleading or so that the Time of Sale Prospectus, as amended or supplemented, will no longer conflict with the information contained in the Registration Statement, or so that the Time of Sale Prospectus, as amended or supplemented, will comply with applicable law.

(f) ***Certain Notifications and Required Actions.*** After the date of this Agreement, the Company shall promptly advise the Representatives in writing of: (i) the receipt of any comments of, or requests for additional or supplemental information from, the Commission relating to the Registration Statement received by the Company; (ii) the time and date of any filing of any post-effective amendment to the Registration Statement or any amendment or supplement to any preliminary prospectus, the Time of Sale Prospectus, any free writing prospectus or the Prospectus; (iii) the time and date that any post-effective amendment to the Registration Statement becomes effective; and (iv) the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or any post-effective amendment thereto or any amendment or supplement to any preliminary prospectus, the Time of Sale Prospectus or the Prospectus or of any order preventing or suspending the use of any preliminary prospectus, the Time of Sale Prospectus, any free writing prospectus or the Prospectus, or of any proceedings to remove, suspend or terminate from listing or quotation the Shares from any securities exchange upon which they are listed for trading or included or designated for quotation, or of the threatening or initiation of any proceedings for any of such purposes. If the Commission shall enter any such stop order at any time, the Company will use its reasonable best efforts to obtain the lifting of such order at the earliest possible moment. Additionally, the Company agrees that it shall comply with all applicable provisions of Rule 424(b), Rule 433 and Rule 430A under the Securities Act and will use its reasonable efforts to confirm that any filings made by the Company under Rule 424(b) or Rule 433 were received in a timely manner by the Commission.

(g) ***Amendments and Supplements to the Prospectus and Other Securities Act Matters.*** If any event shall occur or condition exist as a result of which it is necessary to amend or supplement the Prospectus so that the Prospectus does not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances when the Prospectus is delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule) to a purchaser, not misleading, or if in the opinion of the Representatives or counsel for the Underwriters it is otherwise necessary to amend or supplement the Prospectus to comply with applicable law, the Company agrees (subject to Section 3(b) and Section 3(c)) hereof to promptly prepare, file with the Commission and furnish, at its own expense, to the Underwriters and to any dealer upon request, amendments or supplements to the Prospectus so that the statements in the Prospectus as so amended or supplemented will not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances when the Prospectus is delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule) to a purchaser, not misleading or so that the Prospectus, as amended or supplemented, will comply with applicable law. Neither the Representatives' consent to, nor delivery of, any such amendment or supplement shall constitute a waiver of any of the Company's obligations under Section 3(b) or Section 3(c).

(h) ***Blue Sky Compliance.*** The Company shall cooperate with the Representatives and counsel for the Underwriters to qualify or register the Offered Shares for sale under (or obtain exemptions from the application of) the state securities or blue sky laws or Canadian provincial securities laws (or other foreign laws) of those jurisdictions designated by the Representatives, shall comply with such laws and shall continue such qualifications, registrations and exemptions in effect so long as required for the distribution of the Offered Shares. The Company shall not be required to qualify as a foreign corporation or to take any action that would subject it to general service of process in any such jurisdiction where it is not presently qualified or where it would be subject to taxation as a foreign corporation. The Company will advise the Representatives promptly of the suspension of the qualification or registration of (or any such exemption relating to) the Offered Shares for offering, sale or trading in any jurisdiction or any initiation or threat of any proceeding for any such purpose, and in the event of the issuance of any order suspending such qualification, registration or exemption, the Company shall use its reasonable best efforts to obtain the withdrawal thereof at the earliest possible moment.

(i) ***Use of Proceeds*****.** The Company shall apply the net proceeds from the sale of the Offered Shares sold by it in the manner described under the caption "Use of Proceeds" in the Registration Statement, the Time of Sale Prospectus and the Prospectus.

(j) ***Transfer Agent.*** The Company shall engage and maintain, at its expense, a registrar and transfer agent for the Shares.

(k) ***Earnings Statement.*** The Company will make generally available to its security holders and to the Representatives as soon as practicable an earnings statement (which need not be audited) covering a period of at least twelve months beginning with the first fiscal quarter of the Company commencing after the date of this Agreement that will satisfy the provisions of Section 11(a) of the Securities Act and the rules and regulations of the Commission thereunder.

(l) ***Continued Compliance with Securities Laws*****.** The Company will comply with the Securities Act and the Exchange Act so as to permit the completion of the distribution of the Offered Shares as contemplated by this Agreement**,** the Registration Statement, the Time of Sale Prospectus and the Prospectus. Without limiting the generality of the foregoing, the Company will, during the period when a prospectus relating to the Offered Shares is required by the Securities Act to be delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule), file on a timely basis with the Commission and the Nasdaq all reports and documents required to be filed under the Exchange Act. Additionally, the Company shall report the use of proceeds from the issuance of the Offered Shares as may be required under Rule 463 under the Securities Act.

(m) ***Listing*****.** The Company will use its reasonable best efforts to list, subject to notice of issuance, the Offered Shares on the Nasdaq.

(n) ***Company to Provide Copy of the Prospectus in Form That May be Downloaded from the Internet*****.** If requested by the Representatives, the Company shall cause to be prepared and delivered, at its expense, within one business day from the effective date of this Agreement, to the Representatives an "**electronic Prospectus**" to be used by the Underwriters in connection with the offering and sale of the Offered Shares. As used herein, the term "**electronic Prospectus**" means a form of Time of Sale Prospectus, and any amendment or supplement thereto, that meets each of the following conditions: (i) it shall be encoded in an electronic format, satisfactory to the Representatives, that may be transmitted electronically by the Representatives and the other Underwriters to offerees and purchasers of the Offered Shares; (ii) it shall disclose the same information as the paper Time of Sale Prospectus, except to the extent that graphic and image material cannot be disseminated electronically, in which case such graphic and image material shall be replaced in the electronic Prospectus with a fair and accurate narrative description or tabular representation of such material, as appropriate; and (iii) it shall be in or convertible into a paper format or an electronic format, satisfactory to the Representatives, that will allow investors to store and have continuously ready access to the Time of Sale Prospectus at any future time, without charge to investors (other than any fee charged for subscription to the Internet as a whole and for on-line time). The Company hereby confirms that it has included or will include in the Prospectus filed pursuant to EDGAR or otherwise with the Commission and in the Registration Statement at the time it was declared effective an undertaking that, upon receipt of a request by an investor or his or her representative, the Company shall transmit or cause to be transmitted promptly, without charge, a paper copy of the Time of Sale Prospectus.

(o) ***Agreement Not to Offer or Sell Additional Shares*****.** During the period commencing on and including the date hereof and continuing through and including the 180th day following the date of the Prospectus (such period being referred to herein as the "**Lock-up Period**"), the Company will not, without the prior written consent of the Representatives (which consent may be withheld in their sole discretion), directly or indirectly: (i) sell, offer to sell, contract to sell or lend any Shares or Related Securities (as defined below); (ii) effect any short sale, or establish or increase any "put equivalent position" (as defined in Rule 16a-1(h) under the Exchange Act) or liquidate or decrease any "call equivalent position" (as defined in Rule 16a-1(b) under the Exchange Act) of any Shares or Related Securities; (iii) pledge, hypothecate or grant any security interest in any Shares or Related Securities; (iv) in any other way transfer or dispose of any Shares or Related Securities; (v) enter into any swap, hedge or similar arrangement or agreement that transfers, in whole or in part, the economic risk of ownership of any Shares or Related Securities, regardless of whether any such transaction is to be settled in securities, in cash or otherwise; (vi) announce the offering of any Shares or Related Securities; (vii) submit or file any registration statement under the Securities Act in respect of any Shares or Related Securities (other than as contemplated by this Agreement with respect to the Offered Shares); (viii) effect a reverse stock split, recapitalization, share consolidation, reclassification or similar transaction affecting the outstanding Shares; or (ix) publicly announce the intention to do any of the foregoing; *provided, however*, that the Company may (A) effect the transactions contemplated hereby and (B) issue Shares or Related Securities, or issue Shares upon exercise of Related Securities, pursuant to any stock option, stock bonus, employee stock purchase plan, or other stock plan or arrangement described in the Registration Statement, the Time of Sale Prospectus and the Prospectus, *provided* that each recipient thereof provides to the Representatives a signed Lock-up Agreement, (C) issue Shares pursuant to the exercise or settlement of Related Securities, or upon the conversion of convertible securities outstanding on the date hereof that are described in the Registration Statement, Time of Sale Prospectus and the Prospectus, *provided* that each recipient thereof provides to the Representatives a signed Lock-up Agreement, (D) file one or more registration statements on Form S-8 to register Shares or Related Securities issued or issuable pursuant to the terms of a stock option, stock bonus or other stock plan or arrangement described in the Registration Statement, Time of Sale Prospectus and the Prospectus and (E) issue Shares or Related Securities, or enter into an agreement to issue Shares or Related Securities, in connection with any merger, joint venture, strategic alliances, commercial, lending or other collaborative or strategic transaction or the acquisition or license of the business, property, technology or other assets of another individual or entity or the assumption of an employee benefit plan in connection with a merger or acquisition; *provided* that the aggregate number of Shares or Related Securities that the Company may issue or agree to issue pursuant to this clause (E) shall not exceed 7.5% of the shares of Common Stock of the Company immediately following the issuance of the Offered Shares and that each recipient thereof provides to the Representatives a signed Lock-up Agreement. For purposes of the foregoing, "**Related Securities**" shall mean any options or warrants or other rights to acquire Shares or any securities exchangeable or exercisable for or convertible into Shares, or to acquire other securities or rights ultimately exchangeable or exercisable for, or convertible into, Shares.

(p) ***Future Reports to the Representatives.*** During the period of five years hereafter, the Company will furnish to the Representatives, c/o Jefferies LLC, at 520 Madison Avenue, New York, New York 10022, Attention: Global Head of Syndicate; c/o Piper Jaffray & Co., 50 California Street, Suite 3100, San Francisco, California 94111, Attention: Equity Capital Markets and separately, General Counsel; and c/o Stifel, Nicolaus & Company, Incorporated, 787 Seventh Avenue, 11th Floor New York, New York 10019 Attention: Syndicate: (i) as soon as practicable after the end of each fiscal year, copies of the Annual Report of the Company containing the balance sheet of the Company as of the close of such fiscal year and statements of income, stockholders' equity and cash flows for the year then ended and the opinion thereon of the Company's independent public or certified public accountants; (ii) as soon as practicable after the filing thereof, copies of each proxy statement, Annual Report on Form 10-K, Quarterly Report on Form 10-Q, Current Report on Form 8-K or other report filed by the Company with the Commission, or any securities exchange; and (iii) as soon as available, copies of any report or communication of the Company furnished or made available generally to holders of its capital stock; *provided, however,* that the requirements of this Section 3(p) shall be satisfied to the extent that such reports, statement, communications, financial statements or other documents are available on EDGAR.

(q) ***Investment Limitation*****.** The Company shall not invest or otherwise use the proceeds received by the Company from its sale of the Offered Shares in such a manner as would require the Company to register as an investment company under the Investment Company Act.

(r) ***No Stabilization or Manipulation; Compliance with Regulation M*****.** The Company will not take, and will ensure that no affiliate of the Company will take, directly or indirectly, any action designed to or that would reasonably be expected to cause or result in stabilization or manipulation of the price of the Shares or any reference security with respect to the Shares, whether to facilitate the sale or resale of the Offered Shares or otherwise, and the Company will, and shall cause each of its affiliates to, comply with all applicable provisions of Regulation M.

(s) ***Enforce Lock-Up Agreements*****.** During the Lock-up Period, the Company will enforce all agreements between the Company and any of its securityholders that restrict or prohibit, expressly or in operation, the offer, sale or transfer of Shares or Related Securities or any of the other actions restricted or prohibited under the terms of the form of Lock-up Agreement. In addition, the Company will direct the transfer agent to place stop transfer restrictions upon any such securities of the Company that are bound by such "lock-up" agreements for the duration of the periods contemplated in such agreements, including, without limitation, "lock-up" agreements entered into by the Company's officers and directors and securityholders pursuant to Section 6(i) hereof.

(t) ***Company to Provide Interim Financial Statements*****.** Prior to the First Closing Date and each applicable Option Closing Date, the Company will furnish the Underwriters, as soon as practicable after they have been prepared by or are available to the Company, a copy of any unaudited interim financial statements of the Company for any period subsequent to the period covered by the most recent financial statements appearing in the Registration Statement and the Prospectus; provided that the requirements of this Section 3(t) shall be deemed satisfied to the extent such financial statements are available on EDGAR.

(u) ***Amendments and Supplements to Permitted Section 5(d) Communications***. If at any time following the distribution of any Permitted Section 5(d) Communication, during the period of time after the first date of the Offering of the Shares as in the opinion of counsel to the Underwriters a prospectus relating to the Shares is required by law to be delivered (or required to be delivered but for Rule 172 under the Securities Act) in connection with sales of the Shares by an Underwriter or dealer, there occurred or occurs an event or development as a result of which such Permitted Section 5(d) Communication included or would include an untrue statement of a material fact or omitted or would omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances existing at that subsequent time, not misleading, the Company will promptly notify the Representatives and will promptly amend or supplement, at its own expense, such Permitted Section 5(d) Communication to eliminate or correct such untrue statement or omission.

(v) ***Emerging Growth Company Status***. The Company will promptly notify the Representatives if the Company ceases to be an Emerging Growth Company at any time prior to the later of (i) the time when a prospectus relating to the Offered Shares is not required by the Securities Act to be delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule) and (ii) the expiration of the Lock-Up Period (as defined herein).

(w) ***Announcement Regarding Lock-ups*****.** The Company agrees to announce the Underwriters' intention to release any director or "officer" (within the meaning of Rule 16a-1(f) under the Exchange Act) of the Company from any of the restrictions imposed by any Lock-Up Agreement, by issuing, through a major news service, a press release in form and substance satisfactory to the Representatives or, if consented to by the Representatives, in a registration statement that is publicly filed in connection with a secondary offering of the Company's shares promptly following the Company's receipt of any notification from the Representatives in which such intention is indicated, but in any case not later than the close of the third business day prior to the date on which such release or waiver is to become effective; *provided*, *however*, that nothing shall prevent the Representatives, on behalf of the Underwriters, from announcing the same through a major news service, irrespective of whether the Company has made the required announcement; and *provided, further,* that no such announcement shall be made of any release or waiver granted solely to permit a transfer of securities that is not for consideration and where the transferee has agreed in writing to be bound by the terms of a Lock-Up Agreement in the form set forth as Exhibit A hereto.

The Representatives, on behalf of the several Underwriters, may, in their sole discretion, waive in writing the performance by the Company of any one or more of the foregoing covenants or extend the time for their performance.

Section 4. Payment of Expenses. The Company agrees to pay all costs, fees and expenses incurred in connection with the performance of its obligations hereunder and in connection with the transactions contemplated hereby, including without limitation (i) all expenses incident to the issuance and delivery of the Offered Shares (including all printing and engraving costs), (ii) all fees and expenses of the registrar and transfer agent of the Shares, (iii) all necessary issue, transfer and other stamp taxes in connection with the issuance and sale of the Offered Shares to the Underwriters, (iv) all fees and expenses of the Company's counsel, independent public or certified public accountants and other advisors, (v) all costs and expenses incurred in connection with the preparation, printing, filing, shipping and distribution of the Registration Statement (including financial statements, exhibits, schedules, consents and certificates of experts), the Time of Sale Prospectus, the Prospectus, each free writing prospectus prepared by or on behalf of, used by, or referred to by the Company, and each preliminary prospectus, each Permitted Section 5(d) Communication, and all amendments and supplements thereto, and this Agreement, (vi) all filing fees, attorneys' fees and expenses incurred by the Company or the Underwriters in connection with qualifying or registering (or obtaining exemptions from the qualification or registration of) all or any part of the Offered Shares for offer and sale under the state securities or blue sky laws or the provincial securities laws of Canada, and, if requested by the Representatives, preparing and printing a "Blue Sky Survey" or memorandum and a "Canadian wrapper", and any supplements thereto, advising the Underwriters of such qualifications, registrations and exemptions, (vii) the costs, fees and expenses incurred by the Underwriters in connection with determining their compliance with the rules and regulations of FINRA related to the Underwriters' participation in the offering and distribution of the Offered Shares, including any related filing fees and the legal fees of, and disbursements by, counsel to the Underwriters (provided, however, that the fees, expenses and disbursements of counsel to the Underwriters relating to clauses (vi) and (vii), shall not exceed $40,000 in the aggregate), (viii) the costs and expenses of the Company relating to investor presentations on any "road show", any Permitted Section 5(d) Communication or any Section 5(d) Oral Communication undertaken in connection with the offering of the Offered Shares, including, without limitation, expenses associated with the preparation or dissemination of any electronic road show, expenses associated with the production of road show slides and graphics, fees and expenses of any consultants engaged in connection with the road show presentations with the prior approval of the Company, travel and lodging expenses of the representatives, employees and officers of the Company and any such consultants, and the cost of any aircraft chartered in connection with the road show, provided that such chartered aircraft costs shall be borne 50% by the Company and 50% by the Underwriters, (ix) the fees and expenses associated with listing the Offered Shares on the Nasdaq, and (x) all other fees, costs and expenses of the nature referred to in Item 13 of Part II of the Registration Statement. Except as provided in this Section 4 or in Section 7, Section 9 or Section 10 hereof, the Underwriters shall pay their own expenses, including the fees and disbursements of their counsel and travel and lodging expenses of their representatives and employees.

Section 5. Covenant of the Underwriters. Each Underwriter severally and not jointly covenants with the Company not to take any action that would result in the Company being required to file with the Commission pursuant to Rule 433(d) under the Securities Act a free writing prospectus prepared by or on behalf of such Underwriter that otherwise would not, but for such actions, be required to be filed by the Company under Rule 433(d).

Section 6. Conditions of the Obligations of the Underwriters. The respective obligations of the several Underwriters hereunder to purchase and pay for the Offered Shares as provided herein on the First Closing Date and, with respect to the Optional Shares, each Option Closing Date, shall be subject to the accuracy of the representations and warranties on the part of the Company set forth in Section 1 hereof as of the date hereof and as of the First Closing Date as though then made and, with respect to the Optional Shares, as of each Option Closing Date as though then made, to the timely performance by the Company of its covenants and other obligations hereunder, and to each of the following additional conditions:

(a) ***Comfort Letter*****.** On the date hereof, the Representatives shall have received from Deloitte & Touche LLP, independent registered public accountants for the Company, a letter dated the date hereof addressed to the Underwriters, in form and substance satisfactory to the Representatives, containing statements and information of the type ordinarily included in accountant's "comfort letters" to underwriters, delivered according to Statement of Auditing Standards No. 72 (or any successor bulletin), with respect to the audited and unaudited financial statements and certain financial information contained in the Registration Statement, the Time of Sale Prospectus, and each free writing prospectus, if any.

(b) ***Compliance with Registration Requirements; No Stop Order; No Objection from FINRA.***

(i) The Company shall have filed the Prospectus with the Commission (including the information required by Rule 430A under the Securities Act) in the manner and within the time period required by Rule 424(b) under the Securities Act; or the Company shall have filed a post-effective amendment to the Registration Statement containing the information required by such Rule 430A, and such post-effective amendment shall have become effective.

(ii) No stop order suspending the effectiveness of the Registration Statement or any post-effective amendment to the Registration Statement shall be in effect, and no proceedings for such purpose shall have been instituted or threatened by the Commission.

(iii) FINRA shall have raised no objection to the fairness and reasonableness of the underwriting terms and arrangements.

(c) ***No Material Adverse Change*****.** For the period from and after the date of this Agreement and through and including the First Closing Date and, with respect to any Optional Shares purchased after the First Closing Date, each Option Closing Date, in the judgment of the Representatives there shall not have occurred any Material Adverse Change.

(d) ***Opinion of Counsel for the Company*****.** On each of the First Closing Date and each Option Closing Date the Representatives shall have received the opinion and negative assurance letter of Wilson Sonsini Goodrich & Rosati, Professional Corporation, counsel for the Company, dated as of such date, in the form in form and substance previously agreed to with the Representatives and counsel for the Underwriters.

(e) ***Opinion of the Vice President of Intellectual Property for the Company.*** On each of the First Closing Date and each Option Closing Date, the Representatives shall have received the opinion of the Vice President of Intellectual Property for the Company with respect to intellectual property matters, dated as of such date, in form and substance previously agreed to with the Representatives and counsel for the Underwriters.

(f) ***Opinion of Counsel for the Underwriters*****.** On each of the First Closing Date and each Option Closing Date the Representatives shall have received the opinion and negative assurance letter of Cooley LLP, counsel for the Underwriters in connection with the offer and sale of the Offered Shares, in form and substance satisfactory to the Underwriters, dated as of such date, with executed copies for each of the other Underwriters named on the Prospectus cover page.

(g) ***Officers' Certificate*****.** On each of the First Closing Date and each Option Closing Date, the Representatives shall have received a certificate executed by the Chief Executive Officer or President of the Company and the Chief Financial Officer of the Company, dated as of such date, to the effect set forth in Section 6(b)(ii) and further to the effect that:

(i) for the period from and including the date of this Agreement through and including such date, there has not occurred any Material Adverse Change;

(ii) the representations, warranties and covenants of the Company set forth in Section 1 of this Agreement are true and correct with the same force and effect as though expressly made on and as of such date; and

(iii) the Company has complied with all the agreements hereunder and satisfied all the conditions on its part to be performed or satisfied hereunder at or prior to such date.

(h) ***Bring-down Comfort Letter*****.** On each of the First Closing Date and each Option Closing Date the Representatives shall have received from Deloitte & Touche LLP, independent registered public accountants for the Company, a letter dated such date, in form and substance satisfactory to the Representatives, which letter shall: (i) reaffirm the statements made in the letter furnished by them pursuant to Section 6(a), except that the specified date referred to therein for the carrying out of procedures shall be no more than three business days prior to the First Closing Date or the applicable Option Closing Date, as the case may be; and (ii) cover certain financial information contained in the Prospectus.

(i) ***Lock-Up Agreements.*** On or prior to the date hereof, the Company shall have furnished to the Representatives an agreement in the form of Exhibit A hereto from each of the directors and officers of the Company and from substantially all of the securityholders of the Company, and each such agreement shall be in full force and effect on each of the First Closing Date and each Option Closing Date.

(j) ***Rule 462(b) Registration Statement*****.** In the event that a Rule 462(b) Registration Statement is filed in connection with the offering contemplated by this Agreement, such Rule 462(b) Registration Statement shall have been filed with the Commission on the date of this Agreement and shall have become effective automatically upon such filing.

(k) ***Approval of Listing***. At the First Closing Date, the Offered Shares shall have been approved for listing on the Nasdaq, subject only to official notice of issuance.

(l) ***Additional Documents***. On or before each of the First Closing Date and each Option Closing Date, the Representatives and counsel for the Underwriters shall have received such information, documents and opinions as they may reasonably request for the purposes of enabling them to pass upon the issuance and sale of the Offered Shares as contemplated herein, or in order to evidence the accuracy of any of the representations and warranties, or the satisfaction of any of the conditions or agreements, herein contained; and all proceedings taken by the Company in connection with the issuance and sale of the Offered Shares as contemplated herein and in connection with the other transactions contemplated by this Agreement shall be satisfactory in form and substance to the Representatives and counsel for the Underwriters.

If any condition specified in this Section 6 is not satisfied when and as required to be satisfied (unless waived in writing by the Representatives), this Agreement may be terminated by the Representatives by notice from the Representatives to the Company at any time on or prior to the First Closing Date and, with respect to the Optional Shares, at any time on or prior to the applicable Option Closing Date, which termination shall be without liability on the part of any party to any other party, except that Section 4, Section 7, Section 9 and Section 10 shall at all times be effective and shall survive such termination.

Section 7. Reimbursement of Underwriters' Expenses. If this Agreement is terminated by the Representatives pursuant to Section 6, Section 11 or Section 12, or if the sale to the Underwriters of the Offered Shares on the First Closing Date is not consummated because of any refusal, inability or failure on the part of the Company to perform any agreement herein or to comply with any provision hereof, the Company agrees to reimburse the Representatives and the other Underwriters (or such Underwriters as have terminated this Agreement with respect to themselves), severally, upon demand for all out-of-pocket expenses that shall have been reasonably incurred by the Representatives and the Underwriters in connection with the proposed purchase and the offering and sale of the Offered Shares, including, but not limited to, fees and disbursements of counsel, printing expenses, travel expenses, postage, facsimile and telephone charges. For the avoidance of doubt, it is understood that the Company will not pay or reimburse any costs, fees or expenses incurred by any Underwriter that defaults on its obligations to purchase the Offered Shares.

Section 8. Effectiveness of this Agreement. This Agreement shall become effective upon the execution and delivery hereof by the parties hereto.

Section 9. Indemnification.

(a) ***Indemnification of the Underwriters.*** The Company agrees to indemnify and hold harmless each Underwriter, its affiliates, directors, officers, employees and agents, and each person, if any, who controls any Underwriter within the meaning of the Securities Act or the Exchange Act against any loss, claim, damage, liability or expense, as incurred, to which such Underwriter or such affiliate, director, officer, employee, agent or controlling person may become subject, under the Securities Act, the Exchange Act, other federal or state statutory law or regulation, or the laws or regulations of foreign jurisdictions where Offered Shares have been offered or sold or at common law or otherwise (including in settlement of any litigation, if such settlement is effected with the written consent of the Company), insofar as such loss, claim, damage, liability or expense (or actions in respect thereof as contemplated below) arises out of or is based upon (i) any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement, or any amendment thereto, or the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading; or (ii) any untrue statement or alleged untrue statement of a material fact included in any preliminary prospectus, the Time of Sale Prospectus, any free writing prospectus that the Company has used, referred to or filed, or is required to file, pursuant to Rule 433(d) of the Securities Act, any Marketing Material, any

Section 5(d) Written Communication or the Prospectus (or any amendment or supplement to the foregoing), or the omission or alleged omission to state therein a material fact necessary in order to make the statements, in the light of the circumstances under which they were made, not misleading; or (iii) any act or failure to act or any alleged act or failure to act by any Underwriter in connection with, or relating in any manner to, the Shares or the offering contemplated hereby, and which is included as part of or referred to in any loss, claim, damage, liability or action arising out of or based upon any matter covered by clause (i) or (ii) above; and to reimburse each Underwriter and each such affiliate, director, officer, employee, agent and controlling person for any and all reasonable expenses (including the reasonable fees and disbursements of counsel) as such expenses are incurred by such Underwriter or such affiliate, director, officer, employee, agent or controlling person in connection with investigating, defending, settling, compromising or paying any such loss, claim, damage, liability, expense or action; *provided, however*, that the foregoing indemnity agreement shall not apply to any loss, claim, damage, liability or expense to the extent, but only to the extent, arising out of or based upon any untrue statement or alleged untrue statement or omission or alleged omission made in reliance upon and in conformity with information relating to any Underwriter furnished to the Company by the Representatives in writing expressly for use in the Registration Statement, any preliminary prospectus, the Time of Sale Prospectus, any such free writing prospectus, any Marketing Material, any Section 5(d) Written Communication or the Prospectus (or any amendment or supplement thereto), it being understood and agreed that the only such information consists of the information described in Section 9(b) below. The indemnity agreement set forth in this Section 9(a) shall be in addition to any liabilities that the Company may otherwise have.

(b) ***Indemnification of the Company and its Directors and Officers***. Each Underwriter agrees, severally and not jointly, to indemnify and hold harmless the Company, each of its directors, each of its officers who signed the Registration Statement and each person, if any, who controls the Company within the meaning of the Securities Act or the Exchange Act, against any loss, claim, damage, liability or expense, as incurred, to which the Company, or any such director, officer or controlling person may become subject, under the Securities Act, the Exchange Act, or other federal or state statutory law or regulation, or at common law or otherwise (including in settlement of any litigation, if such settlement is effected with the written consent of such Underwriter), insofar as such loss, claim, damage, liability or expense (or actions in respect thereof as contemplated below) arises out of or is based upon (i) any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement, or any amendment thereto, or any omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading or (ii) any untrue statement or alleged untrue statement of a material fact included in any preliminary prospectus, the Time of Sale Prospectus, any free writing prospectus, that the Company has used, referred to or filed, or is required to file, pursuant to Rule 433 of the Securities Act, any Section 5(d) Written Communication or the Prospectus (or any such amendment or supplement) or the omission or alleged omission to state therein a material fact necessary in order to make the statements, in the light of the circumstances under which they were made, not misleading, in each case to the extent, but only to the extent, that such untrue statement or alleged untrue statement or omission or alleged omission was made in the Registration Statement, such preliminary prospectus, the Time of Sale Prospectus, such free writing prospectus, such Section 5(d) Written Communication or the Prospectus (or any such amendment or supplement), in reliance upon and in conformity with information relating to such Underwriter furnished to the Company by the Representatives in writing expressly for use therein; and to reimburse the Company, or any such director, officer or controlling person for any and all reasonable expenses (including the reasonable fees and disbursements of counsel) as such expenses are incurred by the Company, or any such director, officer or controlling person in connection with investigating, defending, settling, compromising or paying any such loss, claim, damage, liability, expense or action. The Company hereby acknowledges that the only information that the Representatives have furnished to the Company expressly for use in the Registration Statement, any preliminary prospectus, the Time of Sale Prospectus, any free writing prospectus that the Company has filed, or is required to file, pursuant to Rule 433(d) of the Securities Act, any Section 5(d) Written Communication or the Prospectus (or any amendment or

supplement to the foregoing) are the statements set forth in the first and second sentences of the fourth paragraph, the concession and reallowance figures in the first and second sentences of the sixth paragraph, the first and third sentences of the seventeenth paragraph, the seventeenth and eighteenth paragraphs, the first, second and fifth sentences of the twentieth paragraph and the twenty-second paragraph under the caption "Underwriting" in the Preliminary Prospectus and the Prospectus. The indemnity agreement set forth in this Section 9(b) shall be in addition to any liabilities that each Underwriter may otherwise have.

(c) ***Notifications and Other Indemnification Procedures*****.** Promptly after receipt by an indemnified party under this Section 9 of notice of the commencement of any action, such indemnified party will, if a claim in respect thereof is to be made against an indemnifying party under this Section 9, notify the indemnifying party in writing of the commencement thereof, but the omission to so notify the indemnifying party will not relieve the indemnifying party from any liability which it may have to any indemnified party to the extent the indemnifying party is not materially prejudiced as a proximate result of such failure and shall not in any event relieve the indemnifying party from any liability that it may have otherwise than on account of this indemnity agreement. In case any such action is brought against any indemnified party and such indemnified party seeks or intends to seek indemnity from an indemnifying party, the indemnifying party will be entitled to participate in, and, to the extent that it shall elect, jointly with all other indemnifying parties similarly notified, by written notice delivered to the indemnified party promptly after receiving the aforesaid notice from such indemnified party, to assume the defense thereof with counsel reasonably satisfactory to such indemnified party; *provided*, *however*, that if the defendants in any such action include both the indemnified party and the indemnifying party and the indemnified party shall have reasonably concluded that a conflict may arise between the positions of the indemnifying party and the indemnified party in conducting the defense of any such action or that there may be legal defenses available to it and/or other indemnified parties which are different from or additional to those available to the indemnifying party, the indemnified party or parties shall have the right to select separate counsel to assume such legal defenses and to otherwise participate in the defense of such action on behalf of such indemnified party or parties. Upon receipt of notice from the indemnifying party to such indemnified party of such indemnifying party's election to so assume the defense of such action and approval by the indemnified party of counsel, the indemnifying party will not be liable to such indemnified party under this Section 9 for any legal or other expenses subsequently incurred by such indemnified party in connection with the defense thereof unless (i) the indemnified party shall have employed separate counsel in accordance with the proviso to the preceding sentence (it being understood, however, that the indemnifying party shall not be liable for the fees and expenses of more than one separate counsel (together with local counsel), representing the indemnified parties who are parties to such action), which counsel (together with any local counsel) for the indemnified parties shall be selected by the Representatives (in the case of counsel for the indemnified parties referred to in Section 9(a) above) or by the Company (in the case of counsel for the indemnified parties referred to in Section 9(b) above)) or (ii) the indemnifying party shall not have employed counsel satisfactory to the indemnified party to represent the indemnified party within a reasonable time after notice of commencement of the action or (iii) the indemnifying party has authorized in writing the employment of counsel for the indemnified party at the expense of the indemnifying party, in each of which cases the fees and expenses of counsel shall be at the expense of the indemnifying party and shall be paid as they are incurred.

(d) ***Settlements*****.** The indemnifying party under this Section 9 shall not be liable for any settlement of any proceeding effected without its written consent, but if settled with such consent or if there be a final judgment for the plaintiff, the indemnifying party agrees to indemnify the indemnified party against any loss, claim, damage, liability or expense by reason of such settlement or judgment. Notwithstanding the foregoing sentence, if at any time an indemnified party shall have requested an indemnifying party to reimburse the indemnified party for fees and expenses of counsel as contemplated by Section 9(c) hereof, the indemnifying party shall be liable for any settlement of any proceeding effected without its written consent if (i) such settlement is entered into more than 30 days after receipt by such

indemnifying party of the aforesaid request and (ii) such indemnifying party shall not have reimbursed the indemnified party in accordance with such request prior to the date of such settlement. No indemnifying party shall, without the prior written consent of the indemnified party, effect any settlement, compromise or consent to the entry of judgment in any pending or threatened action, suit or proceeding in respect of which any indemnified party is or could have been a party and indemnity was or could have been sought hereunder by such indemnified party, unless such settlement, compromise or consent includes an unconditional release of such indemnified party from all liability on claims that are the subject matter of such action, suit or proceeding and does not include an admission of fault or culpability or a failure to act by or on behalf of such indemnified party.

Section 10. Contribution. If the indemnification provided for in Section 9 is for any reason held to be unavailable to or otherwise insufficient to hold harmless an indemnified party in respect of any losses, claims, damages, liabilities or expenses referred to therein, then each indemnifying party shall contribute to the aggregate amount paid or payable by such indemnified party, as incurred, as a result of any losses, claims, damages, liabilities or expenses referred to therein (i) in such proportion as is appropriate to reflect the relative benefits received by the Company, on the one hand, and the Underwriters, on the other hand, from the offering of the Offered Shares pursuant to this Agreement or (ii) if the allocation provided by clause (i) above is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) above but also the relative fault of the Company, on the one hand, and the Underwriters, on the other hand, in connection with the statements or omissions which resulted in such losses, claims, damages, liabilities or expenses, as well as any other relevant equitable considerations. The relative benefits received by the Company, on the one hand, and the Underwriters, on the other hand, in connection with the offering of the Offered Shares pursuant to this Agreement shall be deemed to be in the same respective proportions as the total proceeds from the offering of the Offered Shares pursuant to this Agreement (before deducting expenses) received by the Company, and the total underwriting discounts and commissions received by the Underwriters, in each case as set forth on the front cover page of the Prospectus, bear to the aggregate initial public offering price of the Offered Shares as set forth on such cover. The relative fault of the Company, on the one hand, and the Underwriters, on the other hand, shall be determined by reference to, among other things, whether any such untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact relates to information supplied by the Company, on the one hand, or the Underwriters, on the other hand, and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission.

The amount paid or payable by a party as a result of the losses, claims, damages, liabilities and expenses referred to above shall be deemed to include, subject to the limitations set forth in Section 9(c), any legal or other fees or expenses reasonably incurred by such party in connection with investigating or defending any action or claim. The provisions set forth in Section 9(c) with respect to notice of commencement of any action shall apply if a claim for contribution is to be made under this Section 10; *provided, however,* that no additional notice shall be required with respect to any action for which notice has been given under Section 9(c) for purposes of indemnification.

The Company and the Underwriters agree that it would not be just and equitable if contribution pursuant to this Section 10 were determined by pro rata allocation (even if the Underwriters were treated as one entity for such purpose) or by any other method of allocation which does not take account of the equitable considerations referred to in this Section 10.

Notwithstanding the provisions of this Section 10, no Underwriter shall be required to contribute any amount in excess of the underwriting discounts and commissions received by such Underwriter in connection with the Offered Shares underwritten by it and distributed to the public. No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to

contribution from any person who was not guilty of such fraudulent misrepresentation. The Underwriters' obligations to contribute pursuant to this Section 10 are several, and not joint, in proportion to their respective underwriting commitments as set forth opposite their respective names on Schedule A. For purposes of this Section 10, each affiliate, director, officer, employee and agent of an Underwriter and each person, if any, who controls an Underwriter within the meaning of the Securities Act or the Exchange Act shall have the same rights to contribution as such Underwriter, and each director of the Company, each officer of the Company who signed the Registration Statement, and each person, if any, who controls the Company within the meaning of the Securities Act and the Exchange Act shall have the same rights to contribution as the Company.

Section 11. Default of One or More of the Several Underwriters. If, on the First Closing Date or any Option Closing Date any one or more of the several Underwriters shall fail or refuse to purchase Offered Shares that it or they have agreed to purchase hereunder on such date, and the aggregate number of Offered Shares which such defaulting Underwriter or Underwriters agreed but failed or refused to purchase does not exceed 10% of the aggregate number of the Offered Shares to be purchased on such date, the Representatives may make arrangements satisfactory to the Company for the purchase of such Offered Shares by other persons, including any of the Underwriters, but if no such arrangements are made by such date, the other Underwriters shall be obligated, severally and not jointly, in the proportions that the number of Firm Shares set forth opposite their respective names on Schedule A bears to the aggregate number of Firm Shares set forth opposite the names of all such non-defaulting Underwriters, or in such other proportions as may be specified by the Representatives with the consent of the non-defaulting Underwriters, to purchase the Offered Shares which such defaulting Underwriter or Underwriters agreed but failed or refused to purchase on such date. If, on the First Closing Date or any Option Closing Date any one or more of the Underwriters shall fail or refuse to purchase Offered Shares and the aggregate number of Offered Shares with respect to which such default occurs exceeds 10% of the aggregate number of Offered Shares to be purchased on such date, and arrangements satisfactory to the Representatives and the Company for the purchase of such Offered Shares are not made within 48 hours after such default, this Agreement shall terminate without liability of any party to any other party except that the provisions of Section 4, Section 7, Section 9 and Section 10 shall at all times be effective and shall survive such termination. In any such case either the Representatives or the Company shall have the right to postpone the First Closing Date or the applicable Option Closing Date, as the case may be, but in no event for longer than seven days in order that the required changes, if any, to the Registration Statement and the Prospectus or any other documents or arrangements may be effected.

As used in this Agreement, the term "**Underwriter**" shall be deemed to include any person substituted for a defaulting Underwriter under this Section 11. Any action taken under this Section 11 shall not relieve any defaulting Underwriter from liability in respect of any default of such Underwriter under this Agreement.

Section 12. Termination of this Agreement. Prior to the purchase of the Firm Shares by the Underwriters on the First Closing Date, this Agreement may be terminated by the Representatives by notice given to the Company if at any time: (i) trading or quotation in any of the Company's securities shall have been suspended or limited by the Commission or by the Nasdaq, (ii) trading in securities generally on either the Nasdaq or the New York Stock Exchange shall have been suspended or limited, or minimum or maximum prices shall have been generally established on any of such stock exchanges; (iii) a general banking moratorium shall have been declared by any of federal, New York, California authorities; (iv) there shall have occurred any outbreak or escalation of national or international hostilities or any crisis or calamity, or any change in the United States or international financial markets, or any substantial change or development involving a prospective substantial change in United States' or international political, financial or economic conditions, as in the judgment of the Representatives is material and adverse and makes it impracticable to market the Offered Shares in the manner and on the terms described in the Time

of Sale Prospectus or the Prospectus or to enforce contracts for the sale of securities; (v) in the judgment of the Representatives there shall have occurred any Material Adverse Change; or (vi) the Company shall have sustained a loss by strike, fire, flood, earthquake, accident or other calamity of such character as in the judgment of the Representatives may interfere materially with the conduct of the business and operations of the Company regardless of whether or not such loss shall have been insured. Any termination pursuant to this Section 12 shall be without liability on the part of (a) the Company to any Underwriter, except that the Company shall be obligated to reimburse the expenses of the Representatives and the Underwriters pursuant to Section 4 or Section 7 hereof or (b) any Underwriter to the Company; *provided, however,* that the provisions of Section 9 and Section 10 shall at all times be effective and shall survive such termination.

Section 13. No Advisory or Fiduciary Relationship. The Company acknowledges and agrees that (a) the purchase and sale of the Offered Shares pursuant to this Agreement, including the determination of the public offering price of the Offered Shares and any related discounts and commissions, is an arm's-length commercial transaction between the Company, on the one hand, and the several Underwriters, on the other hand, (b) in connection with the offering contemplated hereby and the process leading to such transaction, each Underwriter is and has been acting solely as a principal and is not the agent or fiduciary of the Company, or its stockholders, creditors, employees or any other party, (c) no Underwriter has assumed or will assume an advisory or fiduciary responsibility in favor of the Company with respect to the offering contemplated hereby or the process leading thereto (irrespective of whether such Underwriter has advised or is currently advising the Company on other matters) and no Underwriter has any obligation to the Company with respect to the offering contemplated hereby except the obligations expressly set forth in this Agreement, (d) the Underwriters and their respective affiliates may be engaged in a broad range of transactions that involve interests that differ from those of the Company, and (e) the Underwriters have not provided any legal, accounting, regulatory or tax advice with respect to the offering contemplated hereby and the Company has consulted its own legal, accounting, regulatory and tax advisors to the extent it deemed appropriate.

Section 14. Representations and Indemnities to Survive Delivery. The respective indemnities, agreements, representations, warranties and other statements of the Company, of its officers and of the several Underwriters set forth in or made pursuant to this Agreement will remain in full force and effect, regardless of any investigation made by or on behalf of any Underwriter or the Company or any of its or their partners, officers or directors or any controlling person, as the case may be, and, anything herein to the contrary notwithstanding, will survive delivery of and payment for the Offered Shares sold hereunder and any termination of this Agreement.

Section 15. Notices. All communications hereunder shall be in writing and shall be mailed, hand delivered or telecopied and confirmed to the parties hereto as follows:

If to the Representatives:

Jefferies LLC
520 Madison Avenue
New York, New York 10022
Facsimile: (646) 619-4437
Attention: General Counsel

Piper Jaffray & Co.
50 California Street, Suite 3100
San Francisco, California 94111
Facsimile: (612) 303-1068
Attention: General Counsel

	Stifel, Nicolaus & Company, Incorporated 787 Seventh Avenue, 11th Floor New York, New York 10019 Facsimile: (212) 271-3678 Attention: General Counsel
with a copy to:	Cooley LLP 101 California Street, 5th Floor San Francisco, California 94111 Facsimile: (415) 693-2222 Attention: Jonie I. Kondracki
If to the Company:	IGM Biosciences, Inc. 325 E. Middlefield Road Mountain View, California 94043 Attention: Chief Executive Officer and President
with a copy to:	Wilson Sonsini Goodrich & Rosati, Professional Corporation 650 Page Mill Road Palo Alto, California 94304 Facsimile: (650) 493-6811 Attention: Tony Jeffries

Any party hereto may change the address for receipt of communications by giving written notice to the others.

Section 16. Successors. This Agreement will inure to the benefit of and be binding upon the parties hereto, including any substitute Underwriters pursuant to Section 11 hereof, and to the benefit of the affiliates, directors, officers, employees, agents and controlling persons referred to in Section 9 and Section 10, and in each case their respective successors, and no other person will have any right or obligation hereunder. The term "**successors**" shall not include any purchaser of the Offered Shares as such from any of the Underwriters merely by reason of such purchase.

Section 17. Partial Unenforceability. The invalidity or unenforceability of any section, paragraph or provision of this Agreement shall not affect the validity or enforceability of any other section, paragraph or provision hereof. If any section, paragraph or provision of this Agreement is for any reason determined to be invalid or unenforceable, there shall be deemed to be made such minor changes (and only such minor changes) as are necessary to make it valid and enforceable.

Section 18. Recognition of the U.S. Special Resolution Regimes.

(a) In the event that any Underwriter that is a Covered Entity becomes subject to a proceeding under a U.S. Special Resolution Regime, the transfer from such Underwriter of this Agreement, and any interest and obligation in or under this Agreement, will be effective to the same extent as the transfer would be effective under the U.S. Special Resolution Regime if this Agreement, and any such interest and obligation, were governed by the laws of the United States or a state of the United States.

(b) In the event that any Underwriter that is a Covered Entity or a BHC Act Affiliate of such Underwriter becomes subject to a proceeding under a U.S. Special Resolution Regime, Default Rights under this Agreement that may be exercised against such Underwriter are permitted to be exercised to no greater extent than such Default Rights could be exercised under the U.S. Special Resolution Regime if this Agreement were governed by the laws of the United States or a state of the United States.

For purposes of this Agreement, (A) "**BHC Act Affiliate**" has the meaning assigned to the term "affiliate" in, and shall be interpreted in accordance with, 12 U.S.C. § 1841(k); (B) "**Covered Entity**" means any of the following: (i) a "covered entity" as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 252.82(b); (ii) a "covered bank" as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 47.3(b); or (iii) a "covered FSI" as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 382.2(b); (C) "**Default Right**" has the meaning assigned to that term in, and shall be interpreted in accordance with, 12 C.F.R. §§ 252.81, 47.2 or 382.1, as applicable; and (D) "U**.S. Special Resolution Regime**" means each of (i) the Federal Deposit Insurance Act and the regulations promulgated thereunder and (ii) Title II of the Dodd-Frank Wall Street Reform and Consumer Protection Act and the regulations promulgated thereunder.

Section 19. Governing Law Provisions. This Agreement shall be governed by and construed in accordance with the internal laws of the State of New York applicable to agreements made and to be performed in such state. Any legal suit, action or proceeding arising out of or based upon this Agreement or the transactions contemplated hereby ("**Related Proceedings**") may be instituted in the federal courts of the United States of America located in the Borough of Manhattan in the City of New York or the courts of the State of New York in each case located in the Borough of Manhattan in the City of New York (collectively, the "**Specified Courts**"), and each party irrevocably submits to the exclusive jurisdiction (except for proceedings instituted in regard to the enforcement of a judgment of any such court (a "**Related Judgment**"), as to which such jurisdiction is non-exclusive) of such courts in any such suit, action or proceeding. Service of any process, summons, notice or document by mail to such party's address set forth above shall be effective service of process for any suit, action or other proceeding brought in any such court. The parties irrevocably and unconditionally waive any objection to the laying of venue of any suit, action or other proceeding in the Specified Courts and irrevocably and unconditionally waive and agree not to plead or claim in any such court that any such suit, action or other proceeding brought in any such court has been brought in an inconvenient forum.

Section 20. General Provisions. This Agreement constitutes the entire agreement of the parties to this Agreement and supersedes all prior written or oral and all contemporaneous oral agreements, understandings and negotiations with respect to the subject matter hereof. This Agreement may be executed in two or more counterparts, each one of which shall be an original, with the same effect as if the signatures thereto and hereto were upon the same instrument. This Agreement may not be amended or modified unless in writing by all of the parties hereto, and no condition herein (express or implied) may be waived unless waived in writing by each party whom the condition is meant to benefit. The section headings herein are for the convenience of the parties only and shall not affect the construction or interpretation of this Agreement.

Each of the parties hereto acknowledges that it is a sophisticated business person who was adequately represented by counsel during negotiations regarding the provisions hereof, including, without limitation, the indemnification provisions of Section 9 and the contribution provisions of Section 10, and is fully informed regarding said provisions. Each of the parties hereto further acknowledges that the provisions of Section 9 and Section 10 hereof fairly allocate the risks in light of the ability of the parties to investigate the Company, its affairs and its business in order to assure that adequate disclosure has been made in the Registration Statement, any preliminary prospectus, the Time of Sale Prospectus, each free writing prospectus and the Prospectus (and any amendments and supplements to the foregoing), as contemplated by the Securities Act and the Exchange Act.

If the foregoing is in accordance with your understanding of our agreement, kindly sign and return to the Company the enclosed copies hereof, whereupon this instrument, along with all counterparts hereof, shall become a binding agreement in accordance with its terms.

Very truly yours,

IGM BIOSCIENCES, INC.

By: _____
Name:
Title:

The foregoing Underwriting Agreement is hereby confirmed and accepted by the Representatives in New York, New York as of the date first above written.

JEFFERIES LLC
PIPER JAFFRAY & CO.
STIFEL, NICOLAUS & COMPANY, INCORPORATED
Acting individually and as Representatives
of the several Underwriters named in
the attached Schedule A.

JEFFERIES LLC

By: _____
Name:
Title:

PIPER JAFFRAY & CO.

By: _____
Name:
Title:

STIFEL, NICOLAUS & COMPANY, INCORPORATED

By: _____
Name:
Title:

Schedule A

Underwriters	Number of Firm Shares to be Purchased
Jefferies LLC	[•]
Piper Jaffray & Co.	[•]
Stifel, Nicolaus & Company, Incorporated	[•]
Guggenheim Securities, LLC	[•]
Total	[•]

Schedule B

Free Writing Prospectuses Included in the Time of Sale Prospectus

[•]

Schedule C

Pricing Information

Number of Firm Shares: [•]

Price per Share to the public: $[•]

Number of Optional Shares: [•]

Schedule D

Permitted Section 5(d) Communications

1. Investor Presentations of IGM Biosciences, Inc., dated [•]

Exhibit A

Form of Lock-up Agreement

[●], 2019

Jefferies LLC
Piper Jaffray & Co.
Stifel, Nicolaus & Company, Incorporated
As Representatives of the Several Underwriters

c/o Jefferies LLC
520 Madison Avenue
New York, New York 10022

c/o Piper Jaffray & Co.
50 California Street, Suite 3100
San Francisco, California 94111

c/o Stifel, Nicolaus & Company, Incorporated
787 Seventh Avenue, 11th Floor
New York, New York 10019

RE: IGM Biosciences, Inc. (the "**Company**")

Ladies & Gentlemen:

The undersigned is an owner of shares of common stock, par value $0.01 per share, of the Company ("**Shares**") or of securities convertible into or exchangeable or exercisable for Shares. The Company proposes to conduct a public offering of Shares (the "**Offering**") for which Jefferies LLC, Piper Jaffray & Co. and Stifel, Nicolaus & Company, Incorporated (collectively, the "**Representatives**") will act as the representatives of the underwriters. The undersigned recognizes that the Offering will benefit each of the Company and the undersigned. The undersigned acknowledges that the underwriters are relying on the representations and agreements of the undersigned contained in this agreement (the "**Letter Agreement**") in conducting the Offering and, at a subsequent date, in entering into an underwriting agreement (the "**Underwriting Agreement**") and other underwriting arrangements with the Company with respect to the Offering.

Annex A sets forth definitions for capitalized terms used in this Letter Agreement that are not defined in the body of this agreement. Those definitions are a part of this Letter Agreement.

In consideration of the foregoing, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the undersigned hereby agrees that, during the Lock-up Period, the undersigned will not (and if the undersigned is a natural person, will cause any Family Member not to), without the prior written consent of the Representatives, which may withhold their consent in their sole discretion:

- Sell or Offer to Sell any Shares or Related Securities currently or hereafter owned either of record or beneficially (as defined in Rule 13d-3 under the Exchange Act) by the undersigned or such Family Member,

- enter into any Swap,
- make any demand for, or exercise any right with respect to, the registration under the Securities Act of the offer and sale of any Shares or Related Securities, or cause to be filed a registration statement, prospectus or prospectus supplement (or an amendment or supplement thereto) with respect to any such registration, or
- publicly announce any intention to do any of the foregoing.

The foregoing will not apply to the registration of the offer and sale of the Shares, and the sale of the Shares to the underwriters, in each case as contemplated by the Underwriting Agreement. In addition, the foregoing restrictions shall not apply to the transfer of Shares or Related Securities:

i. as a *bona fide* gift or gifts,

ii. by will or intestacy,

iii. to any trust or other entities formed for the direct or indirect benefit of the undersigned or a Family Member of the undersigned,

iv. to any Family Member,

v. if the undersigned is a trust, to a trustor, trustee or beneficiary of the trust or to the estate of a beneficiary of such trust,

vi. to a corporation, partnership, limited liability company or other entity of which the undersigned or any Family Member is the legal and beneficial owner of all of the outstanding equity securities or similar interests,

vii. to a nominee or custodian of a person or entity to whom a disposition or transfer would be permissible under clauses (i) through (vi) above,

viii. if the undersigned is a corporation, partnership, limited liability company, trust or other business entity or non-natural person, (A) to another corporation, partnership, limited liability company, trust or other business entity that is an affiliate (as defined in Rule 405 promulgated under the Securities Act) of the undersigned (including, for the avoidance of doubt any wholly-owned direct or indirect subsidiary of the undersigned or to the immediate or indirect parent entity of the undersigned), or to any investment fund or other entity controlling, controlled by, managing or managed by or under common control with the undersigned or affiliates of the undersigned (including, for the avoidance of doubt, where the undersigned is a partnership, to its general partner or a successor partnership or fund, or any other funds managed by such partnership), or (B) as part of a distribution, transfer or other disposition by the undersigned to its stockholders, partners, members or other equity holders,

ix. to the Company pursuant to agreements under which the Company or any of its respective equity holders has the option to repurchase such Shares or Related Securities upon death, disability or termination of service of the undersigned,

x. that the undersigned may purchase (A) from the underwriters in the Offering or (B) in open market transactions on or after the date set forth on the cover of the Prospectus,

xi. by operation of law pursuant to a court order or settlement agreement related to the distribution of assets in connection with the dissolution of a marriage or civil union, provided that such Shares or Related Securities shall remain subject to the terms of this Letter Agreement,

xii. in connection with the exercise or settlement of options or restricted stock units granted under a stock incentive plan or other equity award plan, which plan is described in the Prospectus, provided that any Shares or Related Securities received as a result of such exercise, vesting or settlement shall remain subject to the terms of this Letter Agreement,

xiii. to the Company (A) in connection with the "net" or "cashless" exercise of options or other rights to purchase Shares or Related Securities from the Company (including any transfer to the Company for the payment of tax withholdings or remittance payments due as a result of such exercise) and (B) in connection with the vesting or settlement of restricted stock units, for the payment of tax withholdings or remittance payments due as a result of the vesting or settlement of such restricted stock units, in all such cases, pursuant to equity awards granted under a stock incentive plan or other equity award plan, which plan is described in the Prospectus, provided that any Shares or Related Securities received as a result of such exercise, vesting or settlement shall remain subject to the terms of this Letter Agreement,

xiv. pursuant to a bona fide third-party tender offer, merger, consolidation or other similar transaction that is approved by the Board of Directors of the Company and made to all holders of the Company's capital stock involving a Change of Control of the Company, provided that in the event that such tender offer, merger, consolidation or other similar transaction is not completed, the undersigned's Shares and Related Securities shall remain subject to the provisions of this Letter Agreement, and

xv. pursuant to the conversion or reclassification of the outstanding preferred stock into Shares as disclosed in the Prospectus, provided that any such Shares received upon such conversion shall be subject to the terms of this Letter Agreement,

provided, however, that it shall be a condition to such transfer that:

- in the case of any transfer pursuant to clauses (i) through (viii) and (xi) above, each transferee executes and delivers to the Representatives a lock-up letter in the form of this Letter Agreement,
- in the case of any transfer pursuant to clauses (i) through (viii) and (x) above, no public disclosure or filing shall be required, or made voluntarily, during the Lock-up Period reporting a reduction in beneficial ownership of Shares in connection with such transfer,
- in the case of any transfer pursuant to clauses (ix) and (xi) above, no public disclosure or filing reporting a reduction in beneficial ownership of shares of Common Stock shall be made voluntarily during the Lock-up Period, and if the undersigned is required to file a report under Section 16 of the Exchange Act reporting a reduction in beneficial ownership of shares of Common Stock during the Lock-up Period, the undersigned shall include a statement in such report to the effect that such transfer relates to the circumstances described in clause (ix) or (xi), as applicable,
- in the case of any transfer pursuant to clauses (xii) and (xiii) above, no public disclosure or filing reporting a reduction in beneficial ownership of shares of Common Stock shall be made voluntarily during the Lock-up Period nor shall be required within 90 days after the date of the Prospectus, and after such 90th day, if the undersigned is required to file a report under Section

16 of the Exchange Act reporting a reduction in beneficial ownership of shares of Common Stock during the Lock-up Period, the undersigned shall include a statement in such report to the effect that (A) such transfer relates to the circumstances described in (xii) or (xiii), as the case may be, (B) no shares were sold by the reporting person and (C) the shares received upon exercise or settlement are subject to a lock-up agreement with the Underwriters of the Offering, and

- in the case of any transfer pursuant to clauses (i) through (viii) above, such transfer shall not involve a disposition for value.

Furthermore, notwithstanding the restrictions imposed by this Letter Agreement, the undersigned may establish a trading plan pursuant to Rule 10b5-1 under the Exchange Act for the transfer of Shares, provided that such plan does not provide for any transfers of Shares during the Lock-up Period and the entry into such plan is not publicly disclosed, including in any filing under the Exchange Act, during the Lock-up Period.

If the undersigned is an officer or director of the Company, the undersigned further agrees that the foregoing provisions shall be equally applicable to any Company-directed Shares the undersigned may purchase or otherwise receive in the Offering (including pursuant to a directed share program).

In addition, if the undersigned is an officer or director of the Company, (i) the Representatives agree that, at least three business days before the effective date of any release or waiver of the foregoing restrictions in connection with a transfer of Shares, the Representatives will notify the Company of the impending release or waiver, and (ii) the Company (in accordance with the provisions of the Underwriting Agreement) will announce the impending release or waiver by press release through a major news service at least two business days before the effective date of the release or waiver. Any release or waiver granted by the Representatives hereunder to any such officer or director shall only be effective two business days after the publication date of such press release. The provisions of this paragraph will not apply if both (a) the release or waiver is effected solely to permit a transfer not for consideration and (b) the transferee has agreed in writing to be bound by the same terms described in this Letter Agreement that are applicable to the transferor to the extent and for the duration that such terms remain in effect at the time of the transfer.

The undersigned also agrees and consents to the entry of stop transfer instructions with the Company's transfer agent and registrar against the transfer of Shares or Related Securities held by the undersigned and if the undersigned is a natural person, the undersigned's Family Members, if any, except in compliance with the foregoing restrictions.

With respect to the Offering only, the undersigned waives any registration rights relating to registration under the Securities Act of the offer and sale of any Shares and/or any Related Securities owned either of record or beneficially by the undersigned, including any rights to receive notice of the Offering.

Whether or not the Offering occurs as currently contemplated or at all depends on market conditions and other factors. The Offering will only be made pursuant to the Underwriting Agreement, the terms of which are subject to negotiation between the Company and the underwriters. Notwithstanding anything to the contrary contained herein, this Letter Agreement will automatically terminate and the undersigned shall be released from all obligations under this Letter Agreement upon the earliest to occur, if any, of (i) the Company advising Jefferies in writing that it has determined not to proceed with the Offering, (ii) the Company filing an application with the Securities and Exchange Commission to withdraw the registration statement related to the Offering, (iii) the Underwriting Agreement being terminated following execution of the Underwriting Agreement (other than the provisions thereof which survive termination) prior to payment for and delivery of the Shares to be sold thereunder or (iv) December 31, 2019 if the Underwriting Agreement has not been executed by such date; provided, however, that the Company may,

by written notice to the undersigned prior to such date, extend such date for a period of up to three additional months.

The undersigned hereby represents and warrants that the undersigned has full power, capacity and authority to enter into this Letter Agreement. This Letter Agreement is irrevocable and will be binding on the undersigned and the successors, heirs, personal representatives and assigns of the undersigned. This Letter Agreement may be delivered via facsimile, electronic mail (including pdf or any electronic signature complying with the U.S. federal ESIGN Act of 2000, e.g., www.docusign.com or www.echosign.com) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

This Letter Agreement shall be governed by, and construed in accordance with, the laws of the State of New York.

[*Signature Page Follows*]

Very truly yours,

_____

Name of Security Holder *(Print exact name)*

By: _____

Signature

If not signing in an individual capacity:

_____

Name of Authorized Signatory *(Print*)

_____

Title of Authorized Signatory *(Print*)

(indicate capacity of person signing if signing as custodian, trustee, or on behalf of an entity)

Certain Defined Terms
Used in Lock-up Agreement

For purposes of the Letter Agreement to which this Annex A is attached and of which it is made a part:

- "**Call Equivalent Position**" shall have the meaning set forth in Rule 16a-1(b) under the Exchange Act.
- "**Change of Control**" means the consummation of any bona fide third party tender offer, merger, consolidation or other similar transaction following the completion of the Offering and approved by the Board of Directors of the Company, the result of which is that any "person" (as defined in Section 13(d)(3) of the Exchange Act), or group of persons, other than the Company or its subsidiaries, becomes the beneficial owner (as defined in Rules 13d-3 and 13d-5 of the Exchange Act) of at least 50% of the total voting power of the voting stock of the Company.
- "**Exchange Act**" shall mean the Securities Exchange Act of 1934, as amended.
- "**Family Member**" shall mean the spouse of the undersigned, an immediate family member of the undersigned or an immediate family member of the undersigned's spouse, in each case living in the undersigned's household or whose principal residence is the undersigned's household (regardless of whether such spouse or family member may at the time be living elsewhere due to educational activities, health care treatment, military service, temporary internship or employment or otherwise). "**Immediate family member**" as used above shall have the meaning set forth in Rule 16a-1(e) under the Exchange Act.
- "**Lock-up Period**" shall mean the period beginning on the date hereof and continuing through the close of trading on the date that is 180 days after the date set forth on the cover of the Prospectus.
- "**Prospectus**" shall mean the final prospectus relating to the Offering.
- "**Put Equivalent Position**" shall have the meaning set forth in Rule 16a-1(h) under the Exchange Act.
- "**Related Securities**" shall mean any options or warrants or other rights to acquire Shares or any securities exchangeable or exercisable for or convertible into Shares, or to acquire other securities or rights ultimately exchangeable or exercisable for or convertible into Shares.
- "**Securities Act**" shall mean the Securities Act of 1933, as amended.
- "**Sell or Offer to Sell**" shall mean to:
    - sell, offer to sell, contract to sell or lend,
    - effect any short sale or establish or increase a Put Equivalent Position or liquidate or decrease any Call Equivalent Position
    - pledge, hypothecate or grant any security interest in, or
    - in any other way transfer or dispose of,

in each case whether effected directly or indirectly.

- "**Swap**" shall mean any swap, hedge or similar arrangement or agreement that transfers, in whole or in part, the economic risk of ownership of Shares or Related Securities, regardless of whether any such transaction is to be settled in securities, in cash or otherwise.

Capitalized terms not defined in this Annex A shall have the meanings given to them in the body of this Letter Agreement.

AMENDED AND RESTATED CERTIFICATE OF INCORPORATION OF IGM BIOSCIENCES, INC.

(Pursuant to Sections 242 and 245 of the
General Corporation Law of the State of Delaware)

IGM Biosciences, Inc., a corporation organized and existing under and by virtue of the provisions of the General Corporation Law of the State of Delaware (as amended from time to time, the "***General Corporation Law***"),

DOES HEREBY CERTIFY:

1. That the name of this corporation is IGM Biosciences, Inc., and that this corporation was originally incorporated pursuant to the General Corporation Law on August 25, 1993 under the name "Palingen, Inc."

2. That the board of directors has duly adopted resolutions proposing to amend and restate the Certificate of Incorporation of this corporation, declaring said amendment and restatement to be advisable and in the best interests of this corporation and its stockholders, and authorizing the appropriate officers of this corporation to solicit the consent of the stockholders therefor, which resolution setting forth the proposed amendment and restatement is as follows:

RESOLVED, that the Certificate of Incorporation of this corporation be amended and restated in its entirety to read as follows:

FIRST: The name of this corporation is IGM Biosciences, Inc. (the "***Corporation***").

SECOND: The address of the registered office of the Corporation in the State of Delaware is 3500 South DuPont Highway, in the City of Dover, County of Kent, 19901. The name of its registered agent at such address is Incorporating Services, Ltd.

THIRD: The nature of the business or purposes to be conducted or promoted is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law.

FOURTH: The total number of shares of all classes of stock which this corporation shall have authority to issue is (i) 265,000,000 shares of Common Stock, $0.01 par value per share ("***Common Stock***") and (ii) 113,790,538 shares of Preferred Stock, $0.01 par value per share ("***Preferred Stock***").

222,500,000 shares of the Common Stock are voting and are hereby designated as "***Voting Common Stock***" and 42,500,000 shares of the Common Stock are non-voting and are hereby designated as "***Non-Voting Common Stock***," each with the following rights, preferences, powers, privileges and restrictions, qualifications and limitations. For the avoidance of doubt, each reference to "Common Stock" in this Amended and Restated Certificate of Incorporation, as amended from time to time (the "***Certificate of Incorporation***"), shall be deemed to include both Voting Common Stock and Non-Voting Common Stock. Furthermore, any reference to "Common Stock" issued by the Corporation in any contract, agreement or otherwise to which the Corporation is a party, whether before or after the date of filing of this Certificate of

Incorporation, shall refer to Voting Common Stock, unless specific reference is made to the Non-Voting Common Stock issued in respect of shares of Series C Preferred Stock converted pursuant to Section (d) of Article FIFTH hereof. The Preferred Stock shall be divided into three series. 2,650,000 shares of the Preferred Stock of the Corporation are hereby designated "***Series A Preferred Stock***." 60,140,538 shares of the Preferred Stock of the Corporation are hereby designated "***Series B Preferred Stock***." 51,000,000 shares of the Preferred Stock of the Corporation are hereby designated "***Series C Preferred Stock***." The Series A Preferred Stock and the Series B Preferred Stock are sometimes collectively referred to herein as the "***Legacy Preferred Stock***."

FIFTH: The following is a statement of the designations, powers, privileges, rights, qualifications, limitations and restrictions in respect of each class of capital stock of the Corporation. Unless otherwise indicated, references to "Sections" or "Subsections" in this Article FIFTH refer to sections and subsections of this Article FIFTH.

(a) Dividends.

(i) Dividend Rights of Preferred Stock. The holders of the Preferred Stock shall be entitled to receive, when and as declared by the board of directors of the Corporation (the "***Board***"), out of funds legally available therefor, cash or payment-in-kind dividends that shall accrue at an annual rate of (i) $0.04 per share of Series A Preferred Stock (the "***Series A Dividend Rate***"), (ii) $0.08 per share of Series B Preferred Stock (the "***Series B Dividend Rate***"), and (iii) $0.16 per share of Series C Preferred Stock (the "***Series C Dividend Rate***"). Dividends with respect to Series C Preferred Stock shall rank in preference and priority to any payment of any dividend on Legacy Preferred Stock. Dividends with respect to Series A Preferred Stock and Series B Preferred Stock shall rank in parity to one another, payable in preference and priority to any payment of any dividend on Common Stock of the Corporation. No dividends shall be cumulative and no right to any dividends shall accrue unless declared by the Board. No dividends or other distributions shall be made with respect to the Common Stock in any fiscal year (other than dividends payable in Common Stock on shares of Common Stock payable to effect a stock split) until dividends in the amount of at least the Series A Dividend Rate per share of Series A Preferred Stock, the Series B Dividend Rate per share of Series B Preferred Stock, and the Series C Dividend Rate per share of Series C Preferred Stock have been declared and paid or set apart during that fiscal year. After the payment of the dividends described above in this Subsection (a)(i), any additional dividends declared shall be distributed among all holders of Preferred Stock and all holders of Common Stock in proportion to the number of shares of Common Stock that would be held by each such holder if all shares of Preferred Stock were converted into Common Stock utilizing the then effective Conversion Price (as determined pursuant to Section (d) below).

(ii) Definition of Distribution. For purposes of this Section (a), unless the context otherwise requires, a "***distribution***" shall mean the transfer of cash or other property including any securities of the Corporation other than Common Stock, without consideration whether by way of dividend or otherwise, or the purchase or redemption of shares of the Corporation (other than repurchases of Common Stock issued to or held by employees, officers, directors or consultants of the Corporation or its subsidiaries upon termination of their employment or services) for cash or property.

(b) Liquidation Preference. In the event of any liquidation, dissolution, or winding up of the Corporation, either voluntary or involuntary, distributions to the stockholders of the Corporation shall be made in the following manner:

(i) Distribution to Holders of Preferred Stock.

(A) Unless waived in writing by the Requisite Holders ten (10) days prior to any distribution, the holders of the Series C Preferred Stock shall be entitled to receive, prior and in preference to any distribution to the holders of the Legacy Preferred Stock and Common Stock by reason of their ownership of such stock, the amount of $2.00 per share for each share of Series C Preferred Stock then held by them, in each case adjusted for any stock splits, combinations, consolidations, or stock distributions or dividends with respect to such shares, and, in addition, all declared but unpaid dividends on such Series C Preferred Stock. If the assets and funds thus distributed among the holders of the Series C Preferred Stock shall be insufficient to permit the payment to such holders of the full preferential amount to which they are entitled under this Subsection (b)(i)(A), then the entire assets and funds of the Corporation legally available for distribution shall be distributed ratably among such holders of the Series C Preferred Stock in proportion and preference to the respective amounts which would otherwise be payable in respect of the shares held by them upon such distribution if all amounts payable on or with respect to such shares were paid in full.

(B) The holders of the Series A Preferred Stock and Series B Preferred Stock shall be entitled to receive (on parity as among such Series), prior and in preference to any distribution to the holders of the Common Stock by reason of their ownership of such stock, the amount of (a) $0.50 per share for each share of Series A Preferred Stock then held by them and (b) $1.00 per share for each share of Series B Preferred Stock then held by them, in each case adjusted for any stock splits, combinations, consolidations, or stock distributions or dividends with respect to such shares, and, in addition, all declared but unpaid dividends on such Legacy Preferred Stock. If the assets and funds thus distributed among the holders of the Legacy Preferred Stock shall be insufficient to permit the payment to such holders of the full preferential amount to which they are entitled under this Subsection (b)(i)(B), then the entire assets and funds of the Corporation legally available for distribution shall be distributed ratably among the holders of the Legacy Preferred Stock in proportion and preference to the respective amounts which would otherwise be payable in respect of the shares held by them upon such distribution if all amounts payable on or with respect to such shares were paid in full.

(ii) Distribution to Holders of Common Stock. After payment has been made to the holders of the Preferred Stock of the full amounts to which they shall be entitled as set forth in Subsection (b)(i) above, the holders of the Common Stock shall be entitled to receive the amount of $0.01 per share for each share of Common Stock held by them. If the assets and funds thus distributed among the holders of the Common Stock shall be insufficient to permit the payment to such holders of the full aforesaid preferential amount, then the entire assets and funds of the Corporation legally available for distribution to the Common Stock shall be distributed ratably among the holders of the Common Stock.

(iii) Distribution of Remaining Assets. After payment has been made to the holders of the Preferred Stock and Common Stock of the full amounts to which they shall be entitled as set forth in Subsections (b)(i) and (b)(ii) above, respectively, then the entire remaining assets and funds of the Corporation legally available for distribution, if any, shall be distributed ratably among the holders of the Preferred Stock and Common Stock in proportion to the number of shares of Common Stock that would be held by each such holder if all shares of Preferred Stock were converted into Common Stock immediately prior to such liquidation, dissolution or winding up, utilizing the then effective Conversion Price (as determined pursuant to Section (d) below).

(iv) Deemed Liquidations. For purposes of this Section (b), each of the following events shall be considered a "***Deemed Liquidation***" unless the Requisite Holders elect otherwise in a written notice sent to the Corporation at least ten (10) days prior to the effective date of any such event: (A) a merger or consolidation of the Corporation with or into any other corporation or corporations or person or entity or

entities, or the merger or consolidation of any other corporation or corporations or person or entity or entities into the Corporation, in which merger or consolidation the stockholders of the Corporation receive distributions in cash or securities of another corporation or corporations as a result of such merger or consolidation and in which the stockholders of the Corporation do not own at least 50% of the voting power of the surviving corporation or entity after the merger or consolidation as a result of their ownership of shares of the Corporation or (B) a sale, lease, transfer, exclusive license or other disposition of all or substantially all of the assets of the Corporation. In the event of a Deemed Liquidation, distributions to the stockholders of the Corporation shall be made in accordance with Section (b) above. For the avoidance of doubt, none of the following shall be a Deemed Liquidation: (X) a consolidation with a wholly owned subsidiary of the Corporation; (Y) a merger effected exclusively to change the domicile of the Corporation, or (Z) a bona fide equity financing in which the Corporation is the surviving corporation.

(c) Redemption of Preferred Stock. The Preferred Stock shall not be redeemable.

(d) Conversion. The Preferred Stock shall be convertible into Common Stock of the Corporation as follows:

(i) Right to Convert. Each share of Preferred Stock shall be convertible, at the option of the holder thereof, at any time after the date of issuance of such share, at the office of the Corporation or any transfer agent for the Preferred Stock.

(ii) Conversion Formula. Upon a holder of Preferred Stock's exercise of the conversion rights set forth in Subsection (d)(i) or an automatic conversion pursuant to Subsection (d)(iii), such shares of Preferred Stock shall be converted into the number of fully paid and nonassessable shares of Voting Common Stock as is determined by dividing (a) in the case of the Series A Preferred Stock, $0.50 by the Series A Conversion Price (as defined below) then in effect, as determined as hereinafter provided, (b) in the case of the Series B Preferred Stock, $1.00 by the Series B Conversion Price (as defined below) then in effect, as determined as hereinafter provided, and (c) in the case of the Series C Preferred Stock, $2.00 by the Series C Conversion Price (as defined below) then in effect, as determined as hereinafter provided. The initial "***Series A Conversion Price***" shall be $0.50, and the initial "***Series B Conversion Price***" shall be $1.00 and the initial "***Series C Conversion Price***" shall be $2.00. The Series A Conversion Price, the Series B Conversion Price and the Series C Conversion Price are sometimes hereinafter referred to collectively as the "***Conversion Prices***" and individually as a "***Conversion Price***." Such initial Conversion Prices shall be subject to adjustment as provided herein.

(iii) Automatic Conversion. Subject to Subsection (d)(v), each share of Preferred Stock shall automatically be converted into shares of Voting Common Stock at the applicable Conversion Price then in effect upon the earlier of (i) the written consent of the Requisite Holders and holders of 29,868,161 shares of Legacy Preferred Stock (ii) immediately prior to the closing of a firm-commitment underwritten public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended, covering the offer and sale of Common Stock listed on a nationally recognized stock exchange to the public (an "***IPO***"), if such IPO is approved by any two of Baker Bros. Advisors LP ("***BBA***"), Redmile Group ("***RG***") or Haldor Topsøe Holding A/S ("***HTH***"), or (iii) immediately prior to the closing of a firm-commitment underwritten IPO at a price per share (before deduction of underwriter discounts and commissions and offering expenses) of not less than $2.20 per share (appropriately adjusted for any stock splits, combinations, consolidations, or stock distributions or dividends with respect to such shares) and gross proceeds to the Corporation of not less than $75,000,000 (a "***Qualified IPO***"). "***Requisite Holders***" shall mean BBA and RG (the "***Lead Investors***") so long as BBA and RG each hold at least 7,500,000 and 6,250,000 shares of Series C Preferred Stock, respectively (the "Requisite Holder Threshold"), and if the Requisite Holder Threshold is not met, then the holders of a majority of the then outstanding Series C Preferred Stock.

(iv) Mechanics of Conversion. No fractional shares of Common Stock shall be issued upon conversion of Preferred Stock. In lieu of any fractional shares to which the holder would otherwise be entitled, the Corporation shall pay cash equal to such fraction multiplied by the then current fair value of the Common Stock, as determined in good faith by the Board. Before any holder of Preferred Stock shall be entitled to convert the same into full shares of Common Stock, such holder shall give written notice to the Corporation at its corporate headquarters that such holder elects to convert; *provided*, *however*, that in the event of an automatic conversion pursuant to Subsection (d)(iii), the outstanding shares of Preferred Stock shall be converted automatically without any further action by the holders of such shares. The Corporation shall, as soon as practicable after conversion, deliver to each holder a check payable to the holder in the amount of (A) any cash amounts payable as the result of a conversion into fractional shares of Common Stock and (B) any declared but unpaid cash dividends. Such conversion shall be deemed to have been made immediately prior to the close of business on the date of written notice to the Corporation of election to convert, or in the case of automatic conversion, on the date of the approval or the closing of the sale of shares in the Qualified IPO, and the person or persons entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or holders of such shares of Common Stock on such date.

(v) Non-Voting Common Stock

(A) General. The Non-Voting Common Stock shall have the same rights and powers of, rank equally to, share ratably with and be identical in all respects and as to all matters to the Voting Common Stock, except that the Non-Voting Common shall be non-voting and convertible into Voting Common Stock as set forth in this Subsection (d)(v).

(B) Conversion to Non-Voting Common Stock. In the event of an IPO, the Series C Preferred Stock held by HTH and the Lead Investors will convert into either Voting Common Stock or Non-Voting Common Stock, at the election of and in the proportions determined by such investor at such investor's sole discretion.

(C) Beneficial Ownership Limit. The "***Beneficial Ownership Limitation***" means initially 4.99% of the Voting Common Stock. Each of the Lead Investors may increase the Beneficial Ownership Limitation with respect to such investor upon 61 days' written notice prior to the conversion and may decrease the Beneficial Ownership Limitation at any time upon providing written notice of such election.

(D) Conversion from Non-Voting Common Stock into Voting Common Stock. Any holder of Non-Voting Common Stock may elect to convert each share of Non-Voting Common Stock into one fully paid and non-assessable share of Voting Common Stock at any time by providing written notice to the Corporation; provided, however, that such shares of Non-Voting Common Stock may only be converted by each of the Lead Investors into shares of Voting Common Stock during such time or times as immediately prior to or as a result of such conversion would not result in the holder(s) thereof beneficially owning in excess of the Beneficial Ownership Limitation.

(E) Mechanics of Conversion. Any conversion of shares of Series C Preferred Stock into Voting Common Stock or Non-Voting Common Stock, or from Non-Voting Common Stock to Voting Common Stock shall be subject to the procedures and mechanics set forth in Subsection (d)(iv) (*mutatis mutandis*), with the shares of Voting Common Stock issuable upon conversion of Series C Preferred Stock or Non-Voting Common Stock to be delivered within two trading days following the satisfaction of the conditions set forth in Subsection (d)(iv).

(vi) Adjustments to Conversion Prices.

(A) Adjustments for Subdivision. Combination or Consolidation of Common Stock. In the event the outstanding shares of Common Stock shall be subdivided (by stock split, stock dividend or otherwise) into a greater number of shares of Common Stock, the Conversion Prices in effect immediately prior to such subdivision shall, concurrently with the effectiveness of such subdivision, be proportionately decreased. In the event the outstanding shares of Common Stock shall be combined or consolidated (by reclassification or otherwise) into a lesser number of shares of Common Stock, the Conversion Prices in effect immediately prior to such combination or consolidation shall, concurrently with the effectiveness of such combination or consolidation, be proportionately increased.

(B) Adjustments for Reclassification; Exchange. and Substitution. If the Common Stock issuable upon conversion of the Preferred Stock shall be changed into the same or a different number of shares of any other class or classes of stock, whether by capital reorganization, reclassification or otherwise (other than a subdivision or combination of shares provided for above), then concurrently with the effectiveness of such reorganization or reclassification, the Preferred Stock shall be convertible into, in lieu of the number of shares of Common Stock which the holders would otherwise have been entitled to receive, a number of shares of such other class or classes of stock as the holders would have received upon the conversion of the applicable Series of Preferred Stock immediately before the reorganization or reclassification, and appropriate adjustment shall be made (as determined in good faith by the Board) in the application of the provisions of this Subsection (d)(vi) such that they shall apply, as nearly as reasonably possible, to the other class or classes of stock deliverable upon conversion of the Preferred Stock.

(C) Adjustments for Dilutive Issuance. If the Corporation shall issue any Additional Stock (as defined in Subsection (d)(vi)(D) below) without consideration (other than as described in Subsection (d)(vi)(A) above) or for a consideration per share less than the Series A Conversion Price (in the case of the Series A Preferred Stock), the Series B Conversion Price (in the case of the Series B Preferred Stock) or the Series C Conversion Price (in the case of the Series C Preferred Stock) in effect immediately prior to the issuance of such Additional Stock, the applicable Conversion Price in effect immediately prior to each such issuance shall forthwith (except as otherwise provided in this Subsection (d)(vi)(C)) be reduced to a price (rounded to the nearest one-hundredth of a cent, with results halfway or greater between hundredths rounded up) determined by multiplying such Conversion Price by a fraction:

(x) the numerator of which shall be the number of shares of Common Stock outstanding, including all shares of Common Stock then issuable upon (i) the conversion of all outstanding shares of Preferred Stock and (ii) exercise of all outstanding options, immediately prior to such issuance, plus the number of shares of Common Stock which the aggregate consideration received by the Corporation for the total number of such Additional Stock so issued would purchase at the applicable Conversion Price, and

(y) the denominator of which shall be the number of shares of Common Stock outstanding, including all shares of Common Stock then issuable upon (i) the conversion of all outstanding shares of Preferred Stock and (ii) exercise of all outstanding options, immediately prior to such issuance, plus the number of such Additional Stock so issued.

(1) In the case of the issuance of Common Stock for cash, the consideration shall be deemed to be the amount of cash paid therefor before deducting any reasonable discounts, commissions or other expenses allowed, paid or incurred by this Corporation for any underwriting or otherwise in connection with the issuance and sale thereof.

(2) In the case of the issuance of Common Stock for a consideration in whole or in part other than cash, the consideration other than cash shall be deemed to be the fair value thereof as determined by the Board irrespective of any accounting treatment.

(3) In the case of the issuance of options to purchase or rights to subscribe for Common Stock, securities by their terms convertible into or exchangeable for Common Stock or options to purchase or rights to subscribe for such convertible or exchangeable securities (which are not excluded from the definition of Additional Stock):

(aa) the aggregate maximum number of shares of Common Stock deliverable upon exercise of such options to purchase or rights to subscribe for Common Stock shall be deemed to have been issued at the time such options or rights were issued and for a consideration equal to the consideration (determined in the manner provided in paragraphs (1) and (2) above of this Subsection (d)(vi)(C)), if any, received by the Corporation upon the issuance of such options or rights plus the minimum purchase price provided in such options or rights for the Common Stock covered thereby, and no further adjustment of the Conversion Price shall be made upon the subsequent issue of shares of Common Stock upon the exercise of such options or rights;

(bb) the aggregate maximum number of shares of Common Stock deliverable upon conversion of or in exchange for any such convertible or exchangeable securities or upon the exercise of options to purchase or rights to subscribe for such convertible or exchangeable securities and subsequent conversion or exchange thereof shall be deemed to have been issued at the time such securities were issued or such options or rights were issued and for a consideration equal to the consideration, if any, received by the Corporation for any such securities and related options or rights (excluding any cash received on account of accrued interest or accrued dividends), plus the additional consideration, if any, to be received by the Corporation upon the conversion or exchange of such securities or the exercise of any related options or rights (the consideration in each case to be determined in the manner provided in paragraphs (1) and (2) of this Subsection (d)(vi)(C)), and no further adjustment of the Conversion Price shall be made upon the subsequent issue of shares of Common Stock or securities convertible into or exchangeable for shares of Common Stock upon the conversion or exchange of such convertible securities or the exercise of such options or rights;

(cc) on any change in the consideration payable to the Corporation or in the number of shares of Common Stock deliverable upon exercise of such options or rights or upon conversion of or exchange for such convertible or exchangeable securities, including, but not limited to, a change resulting from the anti-dilution provisions thereof, the Conversion Price as then in effect shall be readjusted to such Conversion Price as would have been obtained had the adjustment been made after such change, but no further adjustment shall be made for the actual issuance of Common Stock upon the exercise of any such options or rights or the conversion or exchange of such securities; and

(dd) on the expiration of any such options or rights, the termination of any such rights to convert or exchange or the expiration of any options or rights related to such convertible or exchangeable securities, the Conversion Price shall be readjusted to such Conversion Price as would have been obtained had such options or rights never been issued.

(D) Definition of "Additional Stock". "***Additional Stock***" shall mean any shares of Common Stock issued (or deemed to have been issued pursuant to paragraph (3) of Subsection (d)(vi)(C)) by this Corporation after the date of filing of this Amended and Restated Certificate of Incorporation other than:

(1) securities issued or issuable upon conversion of the Preferred Stock, or as a dividend or distribution on the Preferred Stock;

(2) securities issued or issuable upon the conversion of any debenture, warrant, option, or other convertible security;

(3) Common Stock issued or issuable pursuant to a transaction described in Subsection (d)(vi)(A) hereof;

(4) Common Stock (or options to purchase such Common Shares) issued or issuable to employees or directors of, or consultants to, the Corporation pursuant to any plan approved by the Corporation's Board or a committee thereof to which authority has been delegated (which approval shall include a director designated by the Series C Preferred Stock), including the IGM Biosciences, Inc. 2010 Stock Plan, as may be amended from time to time in accordance with the foregoing approvals, or the IGM Biosciences, Inc. 2018 Omnibus Incentive Plan, as may be amended from time to time in accordance with the foregoing approvals (for the sake of clarity, approval of a director designated by the Series C Preferred Stock shall not be required with respect to any currently outstanding stock or options granted under the 2010 Stock Plan or 2018 Omnibus Incentive Plan, or any future issuances under such plans);

(5) securities issued to banks, equipment lessors or other financial institutions or real property lessors in a transaction approved by the Board (which approval shall include at least one director designated by the Series C Preferred Stock);

(6) securities issued in connection with transactions with suppliers or third party service providers, in each case approved by the Board (which approval shall include at least one director designated by the Series C Preferred Stock); or

(7) securities issued in an acquisition approved by the Board (which approval shall include at least one director designated by the Series C Preferred Stock) (clauses (1) through (7), collectively, the "***Exempted Securities***").

(E) Exceptions. No adjustment of the Conversion Price for a series of Preferred Stock shall be made pursuant to Subsection (d)(vi)(C) if the amount of any such adjustment would be an amount less than $0.01 per share, but any such amount shall be carried forward and adjustment with

respect thereto made at the time of and together with any other subsequent adjustment which, together with such amount and any other amount or amounts so carried forward, shall aggregate $0.01 or more. Except to the limited extent provided for in subparagraphs (cc) and (dd) of paragraph (3) of Subsection (d)(vi)(C), no adjustment of such Conversion Price pursuant to Subsection (d)(vi)(C) shall have the effect of increasing the Conversion Price for a series of Preferred Stock above the Conversion Price in effect for such series of Preferred Stock immediately prior to such adjustment.

(F) Certificate as to Adjustments. Upon the occurrence of each adjustment or readjustment of a Conversion Price pursuant to this Subsection (d)(vi), the Corporation at its expense shall promptly compute such adjustment or readjustment in accordance with the terms hereof and furnish to each holder of the applicable series of Preferred Stock a certificate setting forth such adjustment or readjustment and showing in detail the facts upon which such adjustment or readjustment is based. The Corporation shall, upon the written request at any time of any holder of Preferred Stock, furnish or cause to be furnished to such holder a like certificate setting forth (1) all such adjustments and readjustments, (2) the applicable Conversion Price at the time in effect and (3) the number of shares of Common Stock and the amount, if any, of other property which at the time would be received upon the conversion of such Preferred Stock.

(e) Voting Rights. Except as otherwise required by law or Subsections (f) or (g), the holders of Preferred Stock and the holders of Voting Common Stock shall be entitled to notice of any stockholders meeting and to vote together (on an as-converted basis) as a single class upon any matter submitted to stockholders for a vote or written consent. Except as required by law, the holders of Non-Voting Common Stock shall have no voting rights on any matter and the shares of Non-Voting Common Stock shall not be included in determining the number of shares voting or entitled to vote on any matter. In any matter submitted to stockholders for a vote or written consent, each share of Voting Common Stock issued and outstanding shall have one vote. Each holder of shares of Preferred Stock shall be entitled to the number of votes equal to the number of shares of Common Stock into which such holder's Preferred Stock is convertible, as adjusted from time to time pursuant to Section (d) hereof, at the record date for determination of the stockholders entitled to vote or consent on such matters, or, if no such record date is established, at the date such vote is taken or any written consent of stockholders is solicited. Except as otherwise required by law, the holders of Non-Voting Common Stock shall not be entitled to vote at any meetings of stockholders (or written actions in lieu of meetings) and the shares of Non-Voting Common Stock shall not be included in determining the number of shares voting or entitled to vote on any matter. There shall be no cumulative voting. The number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares of Common Stock then outstanding) by the affirmative vote of the holders of a majority of the stock of the Corporation (voting together on an as-if-converted basis).

(f) Legacy Preferred Stock Protective Provisions.

(i) In addition to any other rights provided by law, so long as 31,395,269 of Legacy Preferred Stock shall be outstanding, this Corporation shall not, without first obtaining the approval of the holders of at least a majority of the voting power of the outstanding shares of the Legacy Preferred Stock, voting together as a single class on an as-converted-to-Common-Stock basis

(A) amend or repeal any provision of, or add any provision to, the Corporation's Certificate of Incorporation or Bylaws in a manner which is disproportionately adverse to the Legacy Preferred Stock (*provided* that the creation or issuance of a new series of senior Preferred Stock shall not in and of itself trigger such provision); or

(B) increase or decrease the authorized number of shares of Legacy Preferred Stock.

(g) Series C Preferred Stock Protective Provisions.

(i) In addition to any other rights provided by law, so long as at least 25,000,000 shares of Series C Preferred Stock remain outstanding (adjusted for any stock splits, stock dividends, combinations, subdivisions, recapitalizations or the like), this Corporation shall not (by amendment, merger, consolidation or otherwise), without first obtaining the approval (by vote or written consent, as provided by law) of the Requisite Holders, cause either this Corporation or any direct or indirect subsidiary of this Corporation to:

(A) liquidate, dissolve or wind-up the business and affairs of the Corporation, or effect any other transaction treated as a Deemed Liquidation under Subsection (b)(iv);

(B) amend or repeal any provision of, or add any provision to, the Corporation's Certificate of Incorporation or Bylaws in a manner which is disproportionately adverse to the Series C Preferred Stock;

(C) create or authorize the creation or issuance of any equity security, or any security convertible into or exercisable for any equity security, having rights, preferences or privileges senior to the Series C Preferred;

(D) purchase or redeem or pay any dividend on any capital shares prior to the Series C Preferred Stock, other than shares repurchased from employees or consultants in connection with the cessation of their employment or services, at no greater than cost or as approved by the Board, including one of the directors designated by the Series C Preferred;

(E) create or authorize the creation of any debt security if the Corporation's aggregate indebtedness would exceed $500,000, unless such debt security has received the prior approval of the Board, including the approval of one of the directors designated by the Series C Preferred;

(F) create or hold capital stock in, any subsidiary that is not wholly-owned (either directly or through one or more other subsidiaries) by the Corporation, or sell, transfer or otherwise dispose of any capital stock of any direct or indirect subsidiary of the Corporation, or permit any direct or indirect subsidiary to sell, lease, transfer, exclusively license or otherwise dispose (in a single transaction or series of related transactions) of all or substantially all of the assets of such subsidiary;

(G) increase or decrease the size of the Board; or

(H) cause or permit, or cause or permit any of its subsidiaries to sell, issue, sponsor, create or distribute any digital tokens, cryptocurrency or other blockchain-based assets (collectively, "Tokens"), including through a pre-sale, initial coin offering, token distribution event or crowdfunding, or through the issuance of any instrument convertible into or exchangeable for Tokens.

SIXTH: The Corporation is to have perpetual existence.

SEVENTH: In furtherance and not in limitation of the powers conferred by statute, the Board is expressly authorized to make, alter, amend or repeal the Bylaws of the Corporation, but the stockholders may make additional Bylaws and may alter or repeal any bylaw whether adopted by them or otherwise.

EIGHTH: Except as otherwise provided in this Certificate of Incorporation, the number of directors which constitute the whole Board of the Corporation shall be as specified in the Bylaws of the Corporation. Elections of directors need not be by written ballot unless the Bylaws shall provide. Meetings of stockholders may be held within or without the State of Delaware, as the Bylaws may provide.

NINTH: The books of the Corporation may be kept (subject to any provision contained in the statutes) outside the State of Delaware at such place or places as may be designated from time to time by the Board or in the Bylaws.

TENTH:

(a) Right to Indemnification. Each person who was or is made a party or is threatened to be made a party to or is involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative ("***proceeding***"), by reason of the fact that he or she or a person of whom he or she is the legal representative, is or was a director or officer, employee or agent of the Corporation or is or was serving at the request of the Corporation as a director or officer, employee or agent of another corporation, or of a partnership, joint venture, trust or other enterprise, including service with respect to employee benefit plans, whether the basis of such proceeding is alleged action in an official capacity as a director, officer, employee or agent or in any other capacity while serving as a director, officer, employee or agent, shall be indemnified and held harmless by the Corporation to the fullest extent authorized by the Delaware General Corporation Law, as the same exists or may hereafter be amended, (but, in the case of any such amendment, only to the extent that such amendment permits the Corporation to provide broader indemnification rights than said Law permitted the Corporation to provide prior to such amendment) against all expenses, liability and loss (including attorneys' fees, judgments, fines, ERISA excise taxes or penalties and amounts paid or to be paid in settlement) reasonably incurred or suffered by such person in connection therewith and such indemnification shall continue as to a person who has ceased to be a director, officer, employee or agent and shall inure to the benefit of his or her heirs, executors and administrators; *provided*, *however*, that the Corporation shall indemnify any such person seeking indemnity in connection with an action, suit or proceeding (or part thereof) initiated by such person only if such action, suit or proceeding (or part thereof) was authorized by the Board. Such right shall be a contract right and shall include the right to be paid by the Corporation expenses incurred in defending any such proceeding in advance of its final disposition; *provided*, *however*, that the payment of such expenses incurred by a director or officer of the Corporation in his or her capacity as a director or officer (and not in any other capacity in which service was or is rendered by such person while a director or officer, including, without limitation, service to an employee benefit plan) in advance of the final disposition of such proceeding, shall be made only upon delivery to the Corporation of an undertaking, by or on behalf of such director or officer, to repay all amounts so advanced if it should be determined ultimately that such director or officer is not entitled to be indemnified under this Section or otherwise.

(b) To the fullest extent permitted by law, a director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director. If the General Corporation Law or any other law of the State of Delaware is amended after approval by the stockholders of this Article TENTH to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited

to the fullest extent permitted by the General Corporation Law as so amended. Any repeal or modification of the foregoing provisions of this Article TENTH by the stockholders of the Corporation shall not adversely affect any right or protection of a director of the Corporation existing at the time of, or increase the liability of any director of the Corporation with respect to any acts or omissions of such director occurring prior to, such repeal or modification.

(c) Right of Claimant to Bring Suit. If a claim under paragraph (a) of Article TENTH is not paid in full by the Corporation within 90 days after a written claim has been received by the Corporation, the claimant may at any time thereafter bring suit against the Corporation to recover the unpaid amount of the claim and, if successful in whole or in part, the claimant shall be entitled to be paid also the expense of prosecuting such claim. It shall be a defense to any such action (other than an action brought to enforce a claim for expenses incurred in defending any proceeding in advance of its final disposition where the required undertaking, if any, has been tendered to this Corporation) that the claimant has not met the standards of conduct which make it permissible under the Delaware General Corporation Law for the Corporation to indemnify the claimant for the amount claimed, but the burden of proving such defense shall be on the Corporation. Neither the failure of the Corporation (including its Board, independent legal counsel, or its stockholders) to have made a determination prior to the commencement of such action that indemnification of the claimant is proper in the circumstances because he or she has met the applicable standard of conduct set forth in the Delaware General Corporation Law, nor an actual determination by the Corporation (including its Board, independent legal counsel, or its stockholders) that the claimant has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that claimant has not met the applicable standard of conduct.

(d) Non-Exclusivity of Rights. The rights conferred on any person by paragraphs (a) and (b) of Article TENTH shall not be exclusive of any other right which such persons may have or hereafter acquire under any statute, provision of the Certificate of Incorporation, bylaw, agreement, vote of stockholders or disinterested directors or otherwise.

(e) Insurance. The Corporation may maintain insurance, at its expense, to protect itself and any such director, officer, employee or agent of the Corporation or another corporation, partnership, joint venture, trust or other enterprise against any such expense, liability or loss, whether or not the Corporation would have the power to indemnify such person against such expense, liability or loss under the General Corporation Law.

(f) Excluded Opportunity. The Corporation renounces, to the fullest extent permitted by law, any interest or expectancy of the Corporation in, or in being offered an opportunity to participate in, any Excluded Opportunity. An "***Excluded Opportunity***" is any matter, transaction or interest that is presented to, or acquired, created or developed by, or which otherwise comes into the possession of (i) any director of the Corporation who is not an employee of the Corporation or any of its subsidiaries, or (ii) any holder of Preferred Stock or any partner, member, director, stockholder, employee, affiliate or agent of any such holder, other than someone who is an employee of the Corporation or any of its subsidiaries (collectively, the persons referred to in clauses (i) and (ii) are "***Covered Persons***"), unless such matter, transaction or interest is presented to, or acquired, created or developed by, or otherwise comes into the possession of, a Covered Person expressly and solely in such Covered Person's capacity as a director of the Corporation while such Covered Person is performing services in such capacity. Any repeal or modification of this Subsection (f) of Article TENTH will only be prospective and will not affect the rights under this Subsection (f) in effect at the time of the occurrence of any actions or omissions to act giving rise to liability. Notwithstanding anything to the contrary contained elsewhere in this Certificate of Incorporation, the affirmative vote of the Requisite Holders will be required to amend or repeal, or to adopt any provisions inconsistent with this Subsection (f).

ELEVENTH: The Corporation reserves the right to amend, alter, change or repeal any provision contained in this Certificate of Incorporation, in the manner now or hereafter prescribed by statute, and all rights conferred upon stockholders herein are granted subject to this reservation.

* * *

3. That the foregoing amendment and restatement was approved by the holders of the requisite number of shares of this corporation in accordance with Section 228 of the General Corporation Law.

4. That this Amended and Restated Certificate of Incorporation, which restates and integrates and further amends the provisions of this Corporation's Certificate of Incorporation, has been duly adopted in accordance with Sections 242 and 245 of the General Corporation Law.

IN WITNESS WHEREOF, this Amended and Restated Certificate of Incorporation has been executed by a duly authorized officer of this corporation on this 30th day of August, 2019.

By: /s/ Fred Schwarzer
Fred Schwarzer
Chief Executive Officer

(Signature page to the Amended and Restated Certificate of Incorporation)

CERTIFICATE OF AMENDMENT TO

THE AMENDED AND RESTATED

CERTIFICATE OF INCORPORATION

OF

IGM BIOSCIENCES, INC.

IGM Biosciences, Inc., a corporation organized and existing under the laws of the State of Delaware (the "**Corporation**"), hereby certifies as follows:

1. The name of the Corporation is IGM Biosciences, Inc. The Corporation's original Certificate of Incorporation was filed with the Secretary of State of the State of Delaware (the "**SOS**") on August 25, 1993 under the name of Palingen, Inc. The Corporation's most recent Amended and Restated Certificate of Incorporation was filed with the SOS on August 30, 2019 (the "**Restated Certificate**").

2. This Certificate of Amendment to the Restated Certificate (the "**Certificate of Amendment**") has been duly adopted in accordance with Section 242 of the Delaware General Corporation Law (the "**DGCL**") and amends the provisions of the Restated Certificate.

3. The terms and provisions of this Certificate of Amendment have been duly approved by written consent of the required number of shares of outstanding stock of the Corporation pursuant to Subsection 228(a) of the DGCL and written notice pursuant to Subsection 228(e) of the DGCL has been or will be given to those stockholders whose written consent has not been obtained.

4. ARTICLE FOURTH of the Restated Certificate is hereby amended and restated in its entirety to read as follows:

"Immediately upon the filing of this Certificate of Amendment, each 6.6084 outstanding shares of Voting Common Stock, each 6.6084 outstanding shares of Non-Voting Common Stock, each 6.6084 outstanding shares of Series A Preferred Stock, each 6.6084 outstanding shares of Series B Preferred Stock and each 6.6084 outstanding shares of Series C Preferred Stock will be exchanged and combined, automatically and without further action, into one (1) share of Voting Common Stock, one (1) share of Non-Voting Common Stock, one (1) share of Series A Preferred Stock, one (1) share of Series B Preferred Stock and one (1) share of Series C Preferred Stock, respectively (the "**Reverse Stock Split**"). The Reverse Stock Split shall also apply to any outstanding securities or rights convertible into, or exchangeable or exercisable for, Common Stock or Preferred Stock of the Corporation. The Reverse Stock Split shall be effected on a certificate-by-certificate basis and each certificate share number will then be rounded down to the nearest whole number. No fractional shares shall be issued upon the exchange and combination. In lieu of any fractional shares to which the holder would otherwise be entitled, the Corporation shall pay an amount of cash equal to the product of (i) the fractional share to which the holder would otherwise be entitled and (ii) the then fair value of a share as determined in good faith by the Board of Directors of the Corporation.

The total number of shares of all classes of stock which this corporation shall have authority to issue is (i) 40,100,477 shares of Common Stock, $0.01 par value per share ("**Common Stock**") and (ii) 17,219,074 shares of Preferred Stock, $0.01 par value per share ("**Preferred Stock**"). 33,669,269 shares of the Common Stock are voting and

are hereby designated as "**Voting Common Stock**" and 6,431,208 shares of the Common Stock are non-voting and are hereby designated as "**Non-Voting Common Stock**," each with the following rights, preferences, powers, privileges and restrictions, qualifications and limitations. For the avoidance of doubt, each reference to "Common Stock" in this Amended and Restated Certificate of Incorporation, as amended from time to time (the "**Certificate of Incorporation**"), shall be deemed to include both Voting Common Stock and Non-Voting Common Stock. Furthermore, any reference to "Common Stock" issued by the Corporation in any contract, agreement or otherwise to which the Corporation is a party, whether before or after the date of filing of this Amended and Restated Certificate of Incorporation, shall refer to Voting Common Stock, unless specific reference is made to the Non-Voting Common Stock issued in respect of shares of Series C Preferred Stock converted pursuant to Section (d) of Article FIFTH hereof. The Preferred Stock shall be divided into three series. 401,004 shares of the Preferred Stock are hereby designated "**Series A Preferred Stock**." 9,100,620 shares of the Preferred Stock are hereby designated "**Series B Preferred Stock**." 7,717,450 shares of the Preferred Stock are hereby designated "**Series C Preferred Stock**." The Series A Preferred Stock and the Series B Preferred Stock are sometimes collectively referred to herein as the "**Legacy Preferred Stock**."

* * *

IN WITNESS WHEREOF, IGM BIOSCIENCES, INC. has caused this Certificate of Amendment to be signed by its Chief Executive Officer and President this 30th day of August, 2019.

IGM BIOSCIENCES, INC.

By: /s/ Fred Schwarzer
Fred Schwarzer
Chief Executive Officer and President

AMENDED AND RESTATED CERTIFICATE OF INCORPORATION OF IGM BIOSCIENCES, INC.

IGM Biosciences, Inc., a corporation organized and existing under the laws of the State of Delaware (the "Corporation"), does hereby certify as follows:

A. The name of the Corporation is IGM Biosciences, Inc. The Corporation was originally incorporated pursuant to the General Corporation Law of the State of Delaware ("DGCL") on August 25, 1993 under the name Palingen, Inc. The name of the Corporation was changed on October 13, 2010 to IGM Biosciences, Inc.

B. This Amended and Restated Certificate of Incorporation (this "Amended and Restated Certificate of Incorporation") was duly adopted by the Board of Directors of the Corporation (the "Board of Directors") in accordance with Sections 242 and 245 of the DGCL, and has been duly approved by the written consent of the stockholders of the Corporation in accordance with Section 228 of the DGCL.

C. The text of the Amended and Restated Certificate of Incorporation is hereby amended and restated in its entirety to read as follows:

ARTICLE I

The name of the Corporation is IGM Biosciences, Inc.

ARTICLE II

The address of the Corporation's registered office in the State of Delaware is 1209 Orange Street, City of Wilmington, County of New Castle, Delaware 19801. The name of its registered agent at such address is The Corporation Trust Company.

ARTICLE III

The nature of the business or purposes to be conducted or promoted by the Corporation is to engage in any lawful act or activity for which corporations may be organized under the DGCL.

ARTICLE IV

Section 1. This Corporation is authorized to issue two classes of stock, to be designated, respectively, "Common Stock" and "Preferred Stock." The total number of shares of stock that the Corporation shall have authority to issue is One Billion Two Hundred Six Million Four Hundred Thirty-One Thousand Two Hundred Eight (1,206,431,208) shares, of which One Billion Six Million Four Hundred Thirty-One Thousand Two Hundred Eight (1,006,431,208) shares are Common Stock, $0.01 par value, and Two Hundred Million (200,000,000) shares are Preferred Stock, $0.01 par value. One Billion (1,000,000,000) shares of the Common Stock are hereby designated "Voting Common Stock" and Six Million Four Hundred Thirty-One Thousand Two Hundred Eight (6,431,208) shares of the Common Stock are hereby designated as "Non-Voting Common Stock," each with the following rights, preferences, powers, privileges and restrictions, qualifications and limitations. Any reference to "Common Stock" issued by the Corporation in any contract, agreement or otherwise to which the Corporation is a party, whether before or after the date of filing of this Amended and Restated Certificate of Incorporation, shall refer to Voting Common Stock, unless specific reference is made to the Non-Voting Common Stock.

Section 2. Each share of Voting Common Stock shall entitle the holder thereof to one (1) vote on any matter submitted to a vote at a meeting of stockholders. Non-Voting Common Stock (i) shall be non-voting except as may be required by law and (ii) shall not entitle the holder thereof to vote on the election of directors at any time.

Section 3. The Preferred Stock may be issued from time to time in one or more series pursuant to a resolution or resolutions providing for such issue duly adopted by the Board of Directors (authority to do so being hereby expressly vested in the Board of Directors). The Board of Directors is further authorized, subject to limitations prescribed by law, to fix by resolution or resolutions the designations, powers, preferences and rights, and the qualifications, limitations or restrictions thereof, of any wholly unissued series of Preferred Stock, including, without limitation, authority to fix by resolution or resolutions the dividend rights, dividend rate, conversion rights, voting rights, rights and terms of redemption (including sinking fund provisions), redemption price or prices, and liquidation preferences of any such series, and the number of shares constituting any such series and the designation thereof, or any of the foregoing. The Board of Directors is further authorized to increase (but not above the total number of authorized shares of the class) or decrease (but not below the number of shares of any such series then outstanding) the number of shares of any series, the number of which was fixed by it, subsequent to the issuance of shares of such series then outstanding, subject to the powers, preferences and rights, and the qualifications, limitations and restrictions thereof stated in this Amended and Restated Certificate of Incorporation or the resolution of the Board of Directors originally fixing the number of shares of such series. If the number of shares of any series is so decreased, then the Corporation shall take all such steps as are necessary to cause the shares constituting such decrease to resume the status which they had prior to the adoption of the resolution originally fixing the number of shares of such series.

Section 4. Except as otherwise required by law, holders of Voting Common Stock shall not be entitled to vote on any amendment to this Amended and Restated Certificate of Incorporation (including any certificate of designation filed with respect to any series of Preferred Stock) that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series are entitled, either separately or together as a class with the holders of one or more other such series, to vote thereon by law or pursuant to this Amended and Restated Certificate of Incorporation (including any certificate of designation filed with respect to any series of Preferred Stock).

Section 5. Each holder of shares of Non-Voting Common Stock shall have the right to convert each share of Non-Voting Common Stock held by such holder into one (1) share of Voting Common Stock at such holder’s election by providing written notice to the Corporation; provided, however, that such shares of Non-Voting Common Stock may only be converted into shares of Voting Common Stock during such time or times as immediately prior to or as a result of such conversion would not result in the holder(s) thereof beneficially owning (for purposes of Section 13(d) of the Securities Exchange Act of 1934, as amended and the rules and regulations promulgated thereunder (collectively, the “Exchange Act”)), when aggregated with affiliates with whom such holder is required to aggregate beneficial ownership for purposes of Section 13(d) of the Exchange Act, in excess of the Beneficial Ownership Limitation. The “Beneficial Ownership Limitation” means initially 4.99% of the Voting Common Stock. Any holder of Non-Voting Common Stock may increase the Beneficial Ownership Limitation with respect to such holder upon 61 days’ prior written notice to the Corporation and may decrease the Beneficial Ownership Limitation at any time upon providing written notice of such election to the Corporation; provided, however, that no holder may make such an election to change the percentage with respect to such holder unless all holders managed by the same investment advisor as such electing holder make the same election.

The effectiveness of any conversion of any shares of Non-Voting Common Stock into shares of Voting Common Stock is subject to the expiration or early termination of any applicable premerger notification and waiting period requirements of the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, and the rules and regulations promulgated thereunder.

ARTICLE V

Section 1. The number of directors that constitutes the entire Board of Directors of the Corporation shall be determined in the manner set forth in the Bylaws of the Corporation. At each annual meeting of stockholders, directors of the Corporation shall be elected to hold office until the expiration of the term for which they are elected and until their successors have been duly elected and qualified or until their earlier resignation or removal; except that if any such meeting shall not be so held, such election shall take place at a stockholders' meeting called and held in accordance with the DGCL.

Section 2. From and after the effectiveness of this Amended and Restated Certificate of Incorporation, the directors of the Corporation (other than any who may be elected by holders of Preferred Stock under specified circumstances) shall be divided into three classes as nearly equal in size as is practicable, hereby designated Class I, Class II and Class III. Directors already in office shall be assigned to each class at the time such classification becomes effective in accordance with a resolution or resolutions adopted by the Board of Directors. At the first annual meeting of stockholders following the date hereof, the term of office of the Class I directors shall expire and Class I directors shall be elected for a full term of three years. At the second annual meeting of stockholders following the date hereof, the term of office of the Class II directors shall expire and Class II directors shall be elected for a full term of three years. At the third annual meeting of stockholders following the date hereof, the term of office of the Class III directors shall expire and Class III directors shall be elected for a full term of three years. At each succeeding annual meeting of stockholders, directors shall be elected for a full term of three years to succeed the directors of the class whose terms expire at such annual meeting. If the number of directors is changed, any newly created directorships or decrease in directorships shall be so apportioned hereafter among the classes as to make all classes as nearly equal in number as is practicable, *provided that* no decrease in the number of directors constituting the Board of Directors shall shorten the term of any incumbent director.

ARTICLE VI

Section 1. Any director or the entire Board of Directors may be removed from office at any time, but only for cause, and only by the affirmative vote of the holders of at least a majority of the voting power of the issued and outstanding capital stock of the Corporation entitled to vote in the election of directors.

Section 2. Except as otherwise provided for or fixed by or pursuant to the provisions herein in relation to the rights of the holders of Preferred Stock to elect directors under specified circumstances, newly created directorships resulting from any increase in the number of directors, created in accordance with the Bylaws of the Corporation, and any vacancies on the Board of Directors resulting from death, resignation, disqualification, removal or other cause shall be filled only by the affirmative vote of a majority of the remaining directors then in office, even though less than a quorum of the Board of Directors, or by a sole

remaining director, and not by the stockholders. A person so elected by the Board of Directors to fill a vacancy or newly created directorship shall hold office until the next election of the class for which such director shall have been chosen until his or her successor shall have been duly elected and qualified, or until such director's earlier death, resignation or removal. No decrease in the number of directors constituting the Board of Directors shall shorten the term of any incumbent director.

ARTICLE VII

Section 1. The Corporation is to have perpetual existence.

Section 2. The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors. In addition to the powers and authority expressly conferred upon them by statute or by this Amended and Restated Certificate of Incorporation or the Bylaws of the Corporation, the directors are hereby empowered to exercise all such powers and do all such acts and things as may be exercised or done by the Corporation.

Section 3. In furtherance and not in limitation of the powers conferred by statute, the Board of Directors is expressly authorized to adopt, alter, amend or repeal the Bylaws of the Corporation. The affirmative vote of at least a majority of the Board of Directors then in office shall be required in order for the Board of Directors to adopt, amend, alter or repeal the Corporation's Bylaws. The Corporation's Bylaws may also be adopted, amended, altered or repealed by the stockholders of the Corporation. Notwithstanding the above or any other provision of this Amended and Restated Certificate of Incorporation, the Bylaws of the Corporation may not be amended, altered or repealed except in accordance with Article X of the Bylaws. No Bylaw hereafter legally adopted, amended, altered or repealed shall invalidate any prior act of the directors or officers of the Corporation that would have been valid if such Bylaw had not been adopted, amended, altered or repealed.

Section 4. The election of directors need not be by written ballot unless the Bylaws of the Corporation shall so provide.

Section 5. No stockholder will be permitted to cumulate votes at any election of directors.

ARTICLE VIII

Section 1. Any action required or permitted to be taken by the stockholders of the Corporation must be effected at a duly called annual or special meeting of stockholders of the Corporation and may not be effected by any consent in writing by such stockholders.

Section 2. Special meetings of stockholders of the Corporation may be called only by the Chairperson of the Board of Directors, the Chief Executive Officer, the President or the Board of Directors acting pursuant to a resolution adopted by a majority of the Board of Directors, and any power of stockholders to call a special meeting of stockholders is specifically denied. Only such business shall be considered at a special meeting of stockholders as shall have been stated in the notice for such meeting.

Section 3. Advance notice of stockholder nominations for the election of directors and of business to be brought by stockholders before any meeting of the stockholders of the Corporation shall be given in the manner and to the extent provided in the Bylaws of the Corporation.

ARTICLE IX

Section 1. To the fullest extent permitted by the DGCL as the same exists or as may hereafter be amended from time to time, a director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director. If the DGCL is amended to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the DGCL, as so amended.

Section 2. The Corporation shall indemnify, to the fullest extent permitted by applicable law, any director or officer of the Corporation who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (a "Proceeding") by reason of the fact that he or she is or was a director, officer, employee or agent of the Corporation or is or was serving at the request of the Corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, including service with respect to employee benefit plans, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with any such Proceeding. The Corporation shall be required to indemnify a person in connection with a Proceeding initiated by such person only if the Proceeding was authorized by the Board of Directors.

Section 3. The Corporation shall have the power to indemnify, to the extent permitted by applicable law, any employee or agent of the Corporation who was or is a party or is threatened to be made a party to any Proceeding by reason of the fact that he or she is or was a director, officer, employee or agent of the Corporation or is or was serving at the request of the Corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, including service with respect to employee benefit plans, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with any such Proceeding.

Section 4. Neither any amendment nor repeal of any Section of this Article IX, nor the adoption of any provision of this Amended and Restated Certificate of Incorporation or the Bylaws of the Corporation inconsistent with this Article IX, shall eliminate or reduce the effect of this Article IX in respect of any matter occurring, or any cause of action, suit, claim or proceeding accruing or arising or that, but for this Article IX, would accrue or arise, prior to such amendment, repeal or adoption of an inconsistent provision.

ARTICLE X

Meetings of stockholders may be held within or outside of the State of Delaware, as the Bylaws may provide. The books of the Corporation may be kept (subject to any provision contained in the statutes) outside of the State of Delaware at such place or places as may be designated from time to time by the Board of Directors or in the Bylaws of the Corporation.

ARTICLE XI

The Corporation reserves the right to amend or repeal any provision contained in this Amended and Restated Certificate of Incorporation in the manner prescribed by the laws of the State of Delaware and all rights conferred upon stockholders are granted subject to this reservation; *provided*, *however*, that notwithstanding any other provision of this Amended and Restated Certificate of Incorporation or any provision of law that might otherwise permit a lesser vote or no vote, the Board of Directors acting pursuant to a resolution adopted by a majority of the Board of Directors and the affirmative vote of sixty-six and two-

thirds percent (66 2/3%) of the then outstanding voting securities of the Corporation, voting together as a single class (for clarification, the holders of Non-Voting Common Stock are not entitled to vote in the election of directors and should not be included in the calculation of such percentage of the voting power), shall be required for the amendment, repeal or modification of the provisions of Section 3 of Article IV, Section 2 of Article V, Article VI, Section 5 of Article VII, Article VIII or Article XI of this Amended and Restated Certificate of Incorporation.

IN WITNESS WHEREOF, IGM Biosciences, Inc. has caused this Amended and Restated Certificate of Incorporation to be signed by Fred Schwarzer, a duly authorized officer of the Corporation, on this day of , 2019.

Fred Schwarzer
Chief Executive Officer and President

AMENDED AND RESTATED BYLAWS OF IGM BIOSCIENCES, INC.

(amended and restated on August 30, 2019 and effective as of the closing of the corporation's initial public offering)

TABLE OF CONTENTS

TABLE OF CONTENTS
(continued)

AMENDED AND RESTATED BYLAWS OF IGM BIOSCIENCES, INC.

ARTICLE I – CORPORATE OFFICES

1.1 REGISTERED OFFICE

The registered office of IGM Biosciences, Inc. shall be fixed in the corporation's certificate of incorporation, as the same may be amended from time to time.

1.2 OTHER OFFICES

The corporation's board of directors may at any time establish other offices at any place or places where the corporation is qualified to do business.

ARTICLE II – MEETINGS OF STOCKHOLDERS

2.1 PLACE OF MEETINGS

Meetings of stockholders shall be held at any place, within or outside the State of Delaware, determined by the board of directors. The board of directors may, in its sole discretion, determine that a meeting of stockholders shall not be held at any place, but may instead be held solely by means of remote communication as authorized by Section 211(a)(2) of the Delaware General Corporation Law (the "DGCL"). In the absence of any such designation or determination, stockholders' meetings shall be held at the corporation's principal executive office.

2.2 ANNUAL MEETING

The annual meeting of stockholders shall be held each year. The board of directors shall designate the date and time of the annual meeting. In the absence of such designation the annual meeting of stockholders shall be held on the second Tuesday of May of each year at 10:00 a.m. However, if such day falls on a legal holiday, then the meeting shall be held at the same time and place on the next succeeding business day. At the annual meeting, directors shall be elected and any other proper business may be transacted.

2.3 SPECIAL MEETING

(i) A special meeting of the stockholders, other than those required by statute, may be called at any time by (A) the board of directors, (B) the chairperson of the board of directors, (C) the chief executive officer or (D) the president (in the absence of a chief executive officer), but a special meeting may not be called by any other person or persons. The board of directors may cancel, postpone or reschedule any previously scheduled special meeting at any time, before or after the notice for such meeting has been sent to the stockholders.

(ii) The notice of a special meeting shall include the purpose for which the meeting is called. Only such business shall be conducted at a special meeting of stockholders as shall have been brought before the meeting by or at the direction of the board of directors, chairperson of the board of directors, chief executive officer or president (in the absence of a chief executive officer). Nothing contained in this Section 2.3(ii) shall be construed as limiting, fixing or affecting the time when a meeting of stockholders called by action of the board of directors may be held.

2.4 ADVANCE NOTICE PROCEDURES

(i) *Advance Notice of Stockholder Business.* At an annual meeting of the stockholders, only such business shall be conducted as shall have been properly brought before the meeting. To be properly brought before an annual meeting, business must be brought (A) pursuant to the corporation's proxy materials with respect to such meeting, (B) by or at the direction of the board of directors, or (C) by a stockholder of the corporation who (1) is a stockholder of record at the time of the giving of the notice required by this Section 2.4(i) and on the record date for the determination of stockholders entitled to vote at the annual meeting and (2) has timely complied in proper written form with the notice procedures set forth in this Section 2.4(i). In addition, for business to be properly brought before an annual meeting by a stockholder, such business must be a proper matter for stockholder action pursuant to these bylaws and applicable law. Except for proposals properly made in accordance with Rule 14a-8 under the Securities Exchange Act of 1934, as amended (the "1934 Act") and the rules and regulations thereunder (as so amended and inclusive of such rules and regulations), and included in the notice of meeting given by or at the direction of the board of directors, for the avoidance of doubt, clause (C) above shall be the exclusive means for a stockholder to bring business before an annual meeting of stockholders.

(a) To comply with clause (C) of Section 2.4(i) above, a stockholder's notice must set forth all information required under this Section 2.4(i) and must be timely received by the secretary of the corporation. To be timely, a stockholder's notice must be received by the secretary at the principal executive offices of the corporation not later than the 45th day nor earlier than the 75th day before the one-year anniversary of the date on which the corporation first mailed its proxy materials or a notice of availability of proxy materials (whichever is earlier) for the preceding year's annual meeting; *provided*, *however*, that in the event that no annual meeting was held in the previous year or if the date of the annual meeting is advanced by more than 30 days prior to or delayed by more than 60 days after the one-year anniversary of the date of the previous year's annual meeting, then, for notice by the stockholder to be timely, it must be so received by the secretary not earlier than the close of business on the 120th day prior to such annual meeting and not later than the close of business on the later of (i) the 90th day prior to such annual meeting, or (ii) the tenth day following the day on which Public Announcement (as defined below) of the date of such annual meeting is first made. In no event shall any adjournment or postponement of an annual meeting or the announcement thereof commence a new time period for the giving of a stockholder's notice as described in this Section 2.4(i)(a). "Public Announcement" shall mean disclosure in a press release reported by a national news service or in a document publicly filed by the corporation with the Securities and Exchange Commission pursuant to Section 13, 14 or 15(d) of the 1934 Act.

(b) To be in proper written form, a stockholder's notice to the secretary must set forth as to each matter of business the stockholder intends to bring before the annual meeting: (1) a brief description of the business intended to be brought before the annual meeting and the reasons for conducting such business at the annual meeting, (2) the name and address, as they appear on the corporation's books, of the stockholder proposing such business and any Stockholder Associated Person (as defined below), (3) the class and number of shares of the corporation that are held of record or are beneficially owned by the stockholder or any Stockholder Associated Person and any derivative positions held or beneficially held by the stockholder or any Stockholder Associated Person, (4) whether and the extent to which any hedging or other transaction or series of transactions has been entered into by or on behalf of such stockholder or any

Stockholder Associated Person with respect to any securities of the corporation, and a description of any other agreement, arrangement or understanding (including any short position or any borrowing or lending of shares), the effect or intent of which is to mitigate loss to, or to manage the risk or benefit from share price changes for, or to increase or decrease the voting power of, such stockholder or any Stockholder Associated Person with respect to any securities of the corporation, (5) any material interest of the stockholder or a Stockholder Associated Person in such business, and (6) a statement whether either such stockholder or any Stockholder Associated Person will deliver a proxy statement and form of proxy to holders of at least the percentage of the corporation's voting shares required under applicable law to carry the proposal (such information provided and statements made as required by clauses (1) through (6), a "Business Solicitation Statement"). In addition, to be in proper written form, a stockholder's notice to the secretary must be supplemented not later than ten days following the record date for notice of the meeting to disclose the information contained in clauses (3) and (4) above as of the record date for notice of the meeting. For purposes of this Section 2.4, a "Stockholder Associated Person" of any stockholder shall mean (i) any person controlling, directly or indirectly, or acting in concert with, such stockholder, (ii) any beneficial owner of shares of stock of the corporation owned of record or beneficially by such stockholder and on whose behalf the proposal or nomination, as the case may be, is being made, or (iii) any person controlling, controlled by or under common control with such person referred to in the preceding clauses (i) and (ii).

(c) Without exception, no business shall be conducted at any annual meeting except in accordance with the provisions set forth in this Section 2.4(i) and, if applicable, Section 2.4(ii). In addition, business proposed to be brought by a stockholder may not be brought before the annual meeting if such stockholder or a Stockholder Associated Person, as applicable, takes action contrary to the representations made in the Business Solicitation Statement applicable to such business or if the Business Solicitation Statement applicable to such business contains an untrue statement of a material fact or omits to state a material fact necessary to make the statements therein not misleading. The chairperson of the annual meeting shall, if the facts warrant, determine and declare at the annual meeting that business was not properly brought before the annual meeting and in accordance with the provisions of this Section 2.4(i), and, if the chairperson should so determine, he or she shall so declare at the annual meeting that any such business not properly brought before the annual meeting shall not be conducted.

(ii) *Advance Notice of Director Nominations at Annual Meetings.* Notwithstanding anything in these bylaws to the contrary, only persons who are nominated in accordance with the procedures set forth in this Section 2.4(ii) shall be eligible for election or re-election as directors at an annual meeting of stockholders. Nominations of persons for election to the board of directors of the corporation shall be made at an annual meeting of stockholders only (A) by or at the direction of the board of directors or (B) by a stockholder of the corporation who (1) was a stockholder of record at the time of the giving of the notice required by this Section 2.4(ii), on the record date for the determination of stockholders entitled to notice of the annual meeting and on the record date for the determination of stockholders entitled to vote at the annual meeting and (2) has complied with the notice procedures set forth in this Section 2.4(ii). In addition to any other applicable requirements, for a nomination to be made by a stockholder, the stockholder must have given timely notice thereof in proper written form to the secretary of the corporation.

(a) To comply with clause (B) of Section 2.4(ii) above, a nomination to be made by a stockholder must set forth all information required under this Section 2.4(ii) and must be received by the secretary of the corporation at the principal executive offices of the corporation at the time set forth in, and in accordance with, the final three sentences of Section 2.4(i)(a) above.

(b) To be in proper written form, such stockholder's notice to the secretary must set forth:

(1) as to each person (a "nominee") whom the stockholder proposes to nominate for election or re-election as a director: (A) the name, age, business address and residence address of the nominee, (B) the principal occupation or employment of the nominee, (C) the class and number of shares of the corporation that are held of record or are beneficially owned by the nominee and any derivative positions held or beneficially held by the nominee, (D) whether and the extent to which any hedging or other transaction or series of transactions has been entered into by or on behalf of the nominee with respect to any securities of the corporation, and a description of any other agreement, arrangement or understanding (including any short position or any borrowing or lending of shares), the effect or intent of which is to mitigate loss to, or to manage the risk or benefit of share price changes for, or to increase or decrease the voting power of the nominee, (E) a description of all arrangements or understandings between the stockholder and each nominee and any other person or persons (naming such person or persons) pursuant to which the nominations are to be made by the stockholder, (F) a written statement executed by the nominee acknowledging that as a director of the corporation, the nominee will owe a fiduciary duty under Delaware law with respect to the corporation and its stockholders, and (G) any other information relating to the nominee that would be required to be disclosed about such nominee if proxies were being solicited for the election of the nominee as a director, or that is otherwise required, in each case pursuant to Regulation 14A under the 1934 Act (including without limitation the nominee's written consent to being named in the proxy statement, if any, as a nominee and to serving as a director if elected); and

(2) as to such stockholder giving notice, (A) the information required to be provided pursuant to clauses (2) through (5) of Section 2.4(i)(b) above, and the supplement referenced in the second sentence of Section 2.4(i)(b) above (except that the references to "business" in such clauses shall instead refer to nominations of directors for purposes of this paragraph), and (B) a statement whether either such stockholder or Stockholder Associated Person will deliver a proxy statement and form of proxy to holders of a number of the corporation's voting shares reasonably believed by such stockholder or Stockholder Associated Person to be necessary to elect such nominee(s) (such information provided and statements made as required by clauses (A) and (B) above, a "Nominee Solicitation Statement").

(c) At the request of the board of directors, any person nominated by a stockholder for election as a director must furnish to the secretary of the corporation (1) that information required to be set forth in the stockholder's notice of nomination of such person as a director as of a date subsequent to the date on which the notice of such person's nomination was given and (2) such other information as may reasonably be required by the corporation to determine the eligibility of such proposed nominee to serve as an independent director of the corporation or that could be material to a reasonable stockholder's understanding of the independence, or lack thereof, of such nominee; in the absence of the furnishing of such information if requested, such stockholder's nomination shall not be considered in proper form pursuant to this Section 2.4(ii).

(d) Without exception, no person shall be eligible for election or re-election as a director of the corporation at an annual meeting of stockholders unless nominated in accordance with the provisions set forth in this Section 2.4(ii). In addition, a nominee shall not be eligible for election or re-election if a stockholder or Stockholder Associated Person, as applicable, takes action contrary to the representations made in the Nominee Solicitation Statement applicable to such nominee or if the Nominee Solicitation Statement applicable to such nominee contains an untrue statement of a material fact or omits to state a material fact necessary to make the statements therein not misleading. The chairperson of the annual

meeting shall, if the facts warrant, determine and declare at the annual meeting that a nomination was not made in accordance with the provisions prescribed by these bylaws, and if the chairperson should so determine, he or she shall so declare at the annual meeting, and the defective nomination shall be disregarded.

(iii) *Advance Notice of Director Nominations for Special Meetings.*

(a) For a special meeting of stockholders at which directors are to be elected pursuant to Section 2.3, nominations of persons for election to the board of directors shall be made only (1) by or at the direction of the board of directors or (2) by any stockholder of the corporation who (A) is a stockholder of record at the time of the giving of the notice required by this Section 2.4(iii), on the record date for the determination of stockholders entitled to notice of the special meeting and on the record date for the determination of stockholders entitled to vote at the special meeting and (B) delivers a timely written notice of the nomination to the secretary of the corporation that includes the information set forth in Sections 2.4(ii)(b) and (ii)(c) above. To be timely, such notice must be received by the secretary at the principal executive offices of the corporation not later than the close of business on the later of the 90th day prior to such special meeting or the tenth day following the day on which Public Announcement is first made of the date of the special meeting and of the nominees proposed by the board of directors to be elected at such meeting. A person shall not be eligible for election or re-election as a director at a special meeting unless the person is nominated (i) by or at the direction of the board of directors or (ii) by a stockholder in accordance with the notice procedures set forth in this Section 2.4(iii). In addition, a nominee shall not be eligible for election or re-election if a stockholder or Stockholder Associated Person, as applicable, takes action contrary to the representations made in the Nominee Solicitation Statement applicable to such nominee or if the Nominee Solicitation Statement applicable to such nominee contains an untrue statement of a material fact or omits to state a material fact necessary to make the statements therein not misleading.

(b) The chairperson of the special meeting shall, if the facts warrant, determine and declare at the meeting that a nomination or business was not made in accordance with the procedures prescribed by these bylaws, and if the chairperson should so determine, he or she shall so declare at the meeting, and the defective nomination or business shall be disregarded.

(iv) *Other Requirements and Rights.* In addition to the foregoing provisions of this Section 2.4, a stockholder must also comply with all applicable requirements of state law and of the 1934 Act and the rules and regulations thereunder with respect to the matters set forth in this Section 2.4, including, with respect to business such stockholder intends to bring before the annual meeting that involves a proposal that such stockholder requests to be included in the corporation's proxy statement, the requirements of Rule 14a-8 (or any successor provision) under the 1934 Act. Nothing in this Section 2.4 shall be deemed to affect any right of the corporation to omit a proposal from the corporation's proxy statement pursuant to Rule 14a-8 (or any successor provision) under the 1934 Act.

2.5 NOTICE OF STOCKHOLDERS' MEETINGS

Whenever stockholders are required or permitted to take any action at a meeting, a written notice of the meeting shall be given which shall state the place, if any, date and hour of the meeting, the means of remote communications, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at such meeting, the record date for determining the stockholders entitled to vote at the meeting, if such date is different from the record date for determining stockholders entitled to notice of the meeting, and, in the case of a special meeting, the purpose or purposes for which the meeting is called. Except as otherwise provided in the DGCL, the certificate of incorporation or these bylaws, the written notice of any meeting of stockholders shall be given not less than 10 nor more than 60 days before the date of the meeting to each stockholder entitled to vote at such meeting as of the record date for determining the stockholders entitled to notice of the meeting.

2.6 QUORUM

The holders of a majority of the stock issued and outstanding and entitled to vote, present in person or represented by proxy, shall constitute a quorum for the transaction of business at all meetings of the stockholders. Where a separate vote by a class or series or classes or series is required, a majority of the outstanding shares of such class or series or classes or series, present in person or represented by proxy, shall constitute a quorum entitled to take action with respect to that vote on that matter, except as otherwise provided by law, the certificate of incorporation or these bylaws.

If, however, such quorum is not present or represented at any meeting of the stockholders, then either (i) the chairperson of the meeting, or (ii) the stockholders entitled to vote at the meeting, present in person or represented by proxy, shall have power to adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum is present or represented. At such adjourned meeting at which a quorum is present or represented, any business may be transacted that might have been transacted at the meeting as originally noticed.

2.7 ADJOURNED MEETING; NOTICE

When a meeting is adjourned to another time or place, unless these bylaws otherwise require, notice need not be given of the adjourned meeting if the time, place, if any, thereof, and the means of remote communications, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at such adjourned meeting are announced at the meeting at which the adjournment is taken. At the adjourned meeting, the corporation may transact any business which might have been transacted at the original meeting. If the adjournment is for more than 30 days, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting. If after the adjournment a new record date for stockholders entitled to vote is fixed for the adjourned meeting, the board of directors shall fix a new record date for notice of such adjourned meeting in accordance with Section 213(a) of the DGCL and Section 2.11 of these bylaws, and shall give notice of the adjourned meeting to each stockholder of record entitled to vote at such adjourned meeting as of the record date fixed for notice of such adjourned meeting.

2.8 CONDUCT OF BUSINESS

The chairperson of any meeting of stockholders shall determine the order of business and the procedure at the meeting, including such regulation of the manner of voting and the conduct of business. The chairperson of any meeting of stockholders shall be designated by the board of directors; in the absence of such designation, the chairperson of the board, if any, the chief executive officer (in the absence of the chairperson) or the president (in the absence of the chairperson of the board and the chief executive officer), or in their absence any other executive officer of the corporation, shall serve as chairperson of the stockholder meeting.

2.9 VOTING

The stockholders entitled to vote at any meeting of stockholders shall be determined in accordance with the provisions of Section 2.11 of these bylaws, subject to Section 217 (relating to voting rights of fiduciaries, pledgors and joint owners of stock) and Section 218 (relating to voting trusts and other voting agreements) of the DGCL.

Except as may be otherwise provided in the certificate of incorporation or these bylaws, each stockholder shall be entitled to one vote for each share of capital stock held by such stockholder.

Except as otherwise required by law, the certificate of incorporation or these bylaws, in all matters other than the election of directors, the affirmative vote of a majority of the voting power of the shares present in person or represented by proxy at the meeting and entitled to vote on the subject matter shall be the act of the stockholders. Except as otherwise required by law, the certificate of incorporation or these bylaws, directors shall be elected by a plurality of the voting power of the shares present in person or represented by proxy at the meeting and entitled to vote on the election of directors. Where a separate vote by a class or series or classes or series is required, in all matters other than the election of directors, the affirmative vote of the majority of shares of such class or series or classes or series present in person or represented by proxy at the meeting shall be the act of such class or series or classes or series, except as otherwise provided by law, the certificate of incorporation or these bylaws.

2.10 STOCKHOLDER ACTION BY WRITTEN CONSENT WITHOUT A MEETING

Subject to the rights of the holders of the shares of any series of preferred stock or any other class of stock or series thereof having a preference over the common stock as dividend or upon liquidation, any action required or permitted to be taken by the stockholders of the corporation must be effected at a duly called annual or special meeting of stockholders of the corporation and may not be effected by any consent in writing by such stockholders.

2.11 RECORD DATES

In order that the corporation may determine the stockholders entitled to notice of any meeting of stockholders or any adjournment thereof, the board of directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the board of directors and which record date shall not be more than 60 nor less than 10 days before the date of such meeting. If the board of directors so fixes a date, such date shall also be the record date for determining the stockholders entitled to vote at such meeting unless the board of directors determines, at the time it fixes such record date, that a later date on or before the date of the meeting shall be the date for making such determination.

If no record date is fixed by the board of directors, the record date for determining stockholders entitled to notice of and to vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or, if notice is waived, at the close of business on the day next preceding the day on which the meeting is held.

A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; *provided*, *however*, that the board of directors may fix a new record date for determination of stockholders entitled to vote at the adjourned meeting, and in such case shall also fix as the record date for stockholders entitled to notice of such adjourned meeting the same or an earlier date as that fixed for determination of stockholders entitled to vote in accordance with the provisions of Section 213 of the DGCL and this Section 2.11 at the adjourned meeting.

In order that the corporation may determine the stockholders entitled to receive payment of any dividend or other distribution or allotment of any rights or the stockholders entitled to exercise any rights in respect of any change, conversion or exchange of stock, or for the purpose of any other lawful action, the board of directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted, and which record date shall be not more than 60 days prior to such action. If no record date is fixed, the record date for determining stockholders for any such purpose shall be at the close of business on the day on which the board of directors adopts the resolution relating thereto.

2.12 PROXIES

Each stockholder entitled to vote at a meeting of stockholders may authorize another person or persons to act for such stockholder by proxy authorized by an instrument in writing or by a transmission permitted by law filed in accordance with the procedure established for the meeting, but no such proxy shall be voted or acted upon after three years from its date, unless the proxy provides for a longer period. The revocability of a proxy that states on its face that it is irrevocable shall be governed by the provisions of Section 212 of the DGCL. A written proxy may be in the form of a telegram, cablegram, or other means of electronic transmission which sets forth or is submitted with information from which it can be determined that the telegram, cablegram, or other means of electronic transmission was authorized by the person.

2.13 LIST OF STOCKHOLDERS ENTITLED TO VOTE

The corporation shall prepare, at least 10 days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting; *provided*, *however*, if the record date for determining the stockholders entitled to vote is less than 10 days before the meeting date, the list shall reflect the stockholders entitled to vote as of the tenth day before the meeting date, arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. The corporation shall not be required to include electronic mail addresses or other electronic contact information on such list. Such list shall be open to the examination of any stockholder for any purpose germane to the meeting for a period of at least 10 days prior to the meeting: (i) on a reasonably accessible electronic network, *provided* that the information required to gain access to such list is provided with the notice of the meeting, or (ii) during ordinary business hours, at the corporation's principal place of business. In the event that the corporation determines to make the list available on an electronic network, the corporation may take reasonable steps to ensure that such information is available only to stockholders of the corporation. If the meeting is to be held at a place, then a list of stockholders entitled to vote at the meeting shall be produced and kept at the time and place of the meeting during the whole time thereof, and may be examined by any stockholder who is present. If the meeting is to be held solely by means of remote communication, then such list shall also be open to the examination of any stockholder during the whole time of the meeting on a reasonably accessible electronic network, and the information required to access such list shall be provided with the notice of the meeting.

2.14 INSPECTORS OF ELECTION

Before any meeting of stockholders, the board of directors shall appoint an inspector or inspectors of election to act at the meeting or its adjournment. The number of inspectors shall be either one (1) or three (3). If any person appointed as inspector fails to appear or fails or refuses to act, then the chairperson of the meeting may, and upon the request of any stockholder or a stockholder's proxy shall, appoint a person to fill that vacancy.

Such inspectors shall:

(i) ascertain the number of shares outstanding and the voting power of each;

(ii) determine the shares represented at the meeting and the validity of proxies and ballots;

(iii) count all votes and ballots;

(iv) determine and retain for a reasonable period a record of the disposition of any challenges made to any determination by the inspectors; and

(v) certify their determination of the number of shares represented at the meeting, and their count of all votes and ballots.

The inspectors of election shall perform their duties impartially, in good faith, to the best of their ability and as expeditiously as is practical. If there are three (3) inspectors of election, the decision, act or certificate of a majority is effective in all respects as the decision, act or certificate of all. Any report or certificate made by the inspectors of election is *prima facie* evidence of the facts stated therein.

ARTICLE III – DIRECTORS

3.1 POWERS

The business and affairs of the corporation shall be managed by or under the direction of the board of directors, except as may be otherwise provided in the DGCL or the certificate of incorporation.

3.2 NUMBER OF DIRECTORS

The board of directors shall consist of one or more members, each of whom shall be a natural person. Unless the certificate of incorporation fixes the number of directors, the number of directors shall be determined from time to time by resolution of the board of directors. No reduction of the authorized number of directors shall have the effect of removing any director before that director's term of office expires.

3.3 ELECTION, QUALIFICATION AND TERM OF OFFICE OF DIRECTORS

Except as provided in Section 3.4 of these bylaws, each director, including a director elected to fill a vacancy, shall hold office until the expiration of the term for which elected and until such director's successor is elected and qualified or until such director's earlier death, resignation or removal. Directors need not be stockholders unless so required by the certificate of incorporation or these bylaws. The certificate of incorporation or these bylaws may prescribe other qualifications for directors.

If so provided in the certificate of incorporation, the directors of the corporation shall be divided into three classes.

3.4 RESIGNATION AND VACANCIES

Any director may resign at any time upon notice given in writing or by electronic transmission to the corporation. A resignation is effective when the resignation is delivered unless the resignation specifies a later effective date or an effective date determined upon the happening of an event or events. A resignation which is conditioned upon the director failing to receive a specified vote for reelection as a director may provide that it is irrevocable. Unless otherwise provided in the certificate of incorporation or these bylaws, when one or more directors resign from the board of directors, effective at a future date, a majority of the directors then in office, including those who have so resigned, shall have power to fill such vacancy or vacancies, the vote thereon to take effect when such resignation or resignations shall become effective.

Unless otherwise provided in the certificate of incorporation or these bylaws, vacancies and newly created directorships resulting from any increase in the authorized number of directors elected by all of the stockholders having the right to vote as a single class may be filled by a majority of the directors then in office, although less than a quorum, or by a sole remaining director, and not by stockholders. If the directors are divided into classes, a person so elected by the directors then in office to fill a vacancy or newly created directorship shall hold office until the next election of the class for which such director shall have been chosen and until his or her successor shall have been duly elected and qualified.

If at any time, by reason of death or resignation or other cause, the corporation should have no directors in office, then any officer or any stockholder or an executor, administrator, trustee or guardian of a stockholder, or other fiduciary entrusted with like responsibility for the person or estate of a stockholder, may call a special meeting of stockholders in accordance with the provisions of the certificate of incorporation or these bylaws, or may apply to the Court of Chancery for a decree summarily ordering an election as provided in Section 211 of the DGCL.

If, at the time of filling any vacancy or any newly created directorship, the directors then in office constitute less than a majority of the whole board of directors (as constituted immediately prior to any such increase), the Court of Chancery may, upon application of any stockholder or stockholders holding at least 10% of the voting stock at the time outstanding having the right to vote for such directors, summarily order an election to be held to fill any such vacancies or newly created directorships, or to replace the directors chosen by the directors then in office as aforesaid, which election shall be governed by the provisions of Section 211 of the DGCL as far as applicable.

3.5 PLACE OF MEETINGS; MEETINGS BY TELEPHONE

The board of directors may hold meetings, both regular and special, either within or outside the State of Delaware.

Unless otherwise restricted by the certificate of incorporation or these bylaws, members of the board of directors, or any committee designated by the board of directors or any subcommittee, may participate in a meeting of the board of directors, or any such committee or subcommittee, by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and such participation in a meeting shall constitute presence in person at the meeting.

3.6 REGULAR MEETINGS

Regular meetings of the board of directors may be held without notice at such time and at such place as shall from time to time be determined by the board of directors.

3.7 SPECIAL MEETINGS; NOTICE

Special meetings of the board of directors for any purpose or purposes may be called at any time by the chairperson of the board of directors, the chief executive officer, the president, the secretary or a majority of the authorized number of directors.

Notice of the time and place of special meetings shall be:

(i) delivered personally by hand, by courier or by telephone;

(ii) sent by United States first-class mail, postage prepaid;

(iii) sent by facsimile;

(iv) sent by electronic mail; or

(v) otherwise given by electronic transmission (as defined in Section 7.2),

directed to each director at that director's address, telephone number, facsimile number, electronic mail address or other contact for notice by electronic transmission, as the case may be, as shown on the corporation's records.

If the notice is (i) delivered personally by hand, by courier or by telephone, (ii) sent by facsimile, (iii) sent by electronic mail or (iv) otherwise given by electronic transmission, it shall be delivered, sent or otherwise directed to each director, as applicable, at least 24 hours before the time of the holding of the meeting. If the notice is sent by United States mail, it shall be deposited in the United States mail at least four days before the time of the holding of the meeting. Any oral notice may be communicated to the director. The notice need not specify the place of the meeting (if the meeting is to be held at the corporation's principal executive office) nor the purpose of the meeting.

3.8 QUORUM; VOTING

At all meetings of the board of directors, a majority of the total authorized number of directors shall constitute a quorum for the transaction of business. If a quorum is not present at any meeting of the board of directors, then the directors present thereat may adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum is present. A meeting at which a quorum is initially present may continue to transact business notwithstanding the withdrawal of directors, if any action taken is approved by at least a majority of the required quorum for that meeting.

The vote of a majority of the directors present at any meeting at which a quorum is present shall be the act of the board of directors, except as may be otherwise specifically provided by statute, the certificate of incorporation or these bylaws.

If the certificate of incorporation provides that one or more directors shall have more or less than one vote per director on any matter, every reference in these bylaws to a majority or other proportion of the directors shall refer to a majority or other proportion of the votes of the directors.

3.9 BOARD ACTION BY WRITTEN CONSENT WITHOUT A MEETING

Unless otherwise restricted by the certificate of incorporation or these bylaws, any action required or permitted to be taken at any meeting of the board of directors, or of any committee or subcommittee thereof, may be taken without a meeting if all members of the board of directors or committee or subcommittee, as the case may be, consent thereto in writing or by electronic transmission and the writing or writings or electronic transmission or transmissions are filed with the minutes of proceedings of the board of directors or committee or subcommittee. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form. Any person (whether or not then a director) may provide, whether through instruction to an agent or otherwise, that a consent to action will be effective at a future time (including a time determined upon the happening of an event), no later than 60 days after such instruction is given or such provision is made and such consent shall be deemed to have been given for purposes of this Section 3.9 at such effective time so long as such person is then a director and did not revoke the consent prior to such time. Any such consent shall be revocable prior to its becoming effective.

3.10 FEES AND COMPENSATION OF DIRECTORS

Unless otherwise restricted by the certificate of incorporation or these bylaws, the board of directors shall have the authority to fix the compensation of directors.

3.11 REMOVAL OF DIRECTORS

Consistent with Section 141(k) of the DGCL, so long as the board of directors remains classified as provided in Section 141(d) of the DGCL, any director may be removed from office by the stockholders of the corporation only for cause.

No reduction of the authorized number of directors shall have the effect of removing any director prior to the expiration of such director’s term of office.

ARTICLE IV – COMMITTEES

4.1 COMMITTEES OF DIRECTORS

The board of directors may designate one or more committees, each committee to consist of one or more of the directors of the corporation. The board of directors may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee. In the absence or disqualification of a member of a committee, the member or members thereof present at any meeting and not disqualified from voting, whether or not such member or members constitute a quorum, may unanimously appoint another member of the board of directors to act at the meeting in the place of any such absent or disqualified member. Any such committee, to the extent provided in the resolution of the board of directors or in these bylaws, shall have and may exercise all the powers and authority of the board of directors in the management of the business and affairs of the corporation, and may authorize the seal of the corporation to be affixed to all papers that may require it; but no such committee shall have the power or authority to (i) approve or adopt, or recommend to the stockholders, any action or matter (other than the election or removal of directors) expressly required by the DGCL to be submitted to stockholders for approval, or (ii) adopt, amend or repeal any bylaw of the corporation.

4.2 COMMITTEE MINUTES

Each committee and subcommittee shall keep regular minutes of its meetings and report the same to the board of directors, or the committee, when required.

4.3 MEETINGS AND ACTION OF COMMITTEES

A majority of the directors then serving on a committee or subcommittee shall constitute a quorum for the transaction of business by the committee or subcommittee, unless the certificate of incorporation, these bylaws, a resolution of the board of directors or a resolution of a committee that created the subcommittee requires a greater or lesser number, *provided* that in no case shall a quorum be less than 1/3 of the directors then serving on the committee or subcommittee. The vote of the majority of the members of a committee or subcommittee present at a meeting at which a quorum is present shall be the act of the committee or subcommittee, unless the certificate of incorporation, these bylaws, a resolution of the board of directors or a resolution of a committee that created the subcommittee requires a greater number. Meetings and actions of committees and subcommittees shall otherwise be governed by, and held and taken in accordance with, the provisions of:

(i) Section 3.5 (place of meetings and meetings by telephone);

(ii) Section 3.6 (regular meetings);

(iii) Section 3.7 (special meetings and notice);

(iv) Section 3.8 (quorum; voting);

(v) Section 7.5 (waiver of notice); and

(vi) Section 3.9 (action without a meeting)

with such changes in the context of those bylaws as are necessary to substitute the committee or subcommittee and its members for the board of directors and its members. *However*:

(i) the time and place of regular meetings of committees and subcommittees may be determined either by resolution of the board of directors or by resolution of the committee or subcommittee;

(ii) special meetings of committees and subcommittees may also be called by resolution of the board of directors or the committee or subcommittee; and

(iii) notice of special meetings of committees and subcommittees shall also be given to all alternate members, as applicable, who shall have the right to attend all meetings of the committee or subcommittee. The board of directors, or, in the absence of any such action by the board of directors, the committee or subcommittee, may adopt rules for the government of any committee or subcommittee not inconsistent with the provisions of these bylaws.

Any provision in the certificate of incorporation providing that one or more directors shall have more or less than one vote per director on any matter shall apply to voting in any committee or subcommittee, unless otherwise provided in the certificate of incorporation or these bylaws.

4.4 SUBCOMMITTEES

Unless otherwise provided in the certificate of incorporation, these bylaws or the resolutions of the board of directors designating the committee, a committee may create one or more subcommittees, each subcommittee to consist of one or more members of the committee, and delegate to a subcommittee any or all of the powers and authority of the committee.

ARTICLE V – OFFICERS

5.1 OFFICERS

The officers of the corporation shall be a president and a secretary. The corporation may also have, at the discretion of the board of directors, a chairperson of the board of directors, a vice chairperson of the board of directors, a chief executive officer, a chief financial officer or treasurer, one or more vice presidents, one or more assistant vice presidents, one or more assistant treasurers, one or more assistant secretaries, and any such other officers as may be appointed in accordance with the provisions of these bylaws. Any number of offices may be held by the same person.

5.2 APPOINTMENT OF OFFICERS

The board of directors shall appoint the officers of the corporation, except such officers as may be appointed in accordance with the provisions of Sections 5.3 of these bylaws, subject to the rights, if any, of an officer under any contract of employment.

5.3 SUBORDINATE OFFICERS

The board of directors may appoint, or empower the chief executive officer or, in the absence of a chief executive officer, the president, to appoint, such other officers and agents as the business of the corporation may require. Each of such officers and agents shall hold office for such period, have such authority, and perform such duties as are provided in these bylaws or as the board of directors may from time to time determine.

5.4 REMOVAL AND RESIGNATION OF OFFICERS

Subject to the rights, if any, of an officer under any contract of employment, any officer may be removed, either with or without cause, by an affirmative vote of the majority of the board of directors at any regular or special meeting of the board of directors or, except in the case of an officer chosen by the board of directors, by any officer upon whom such power of removal may be conferred by the board of directors.

Any officer may resign at any time by giving written notice to the corporation. Any resignation shall take effect at the date of the receipt of that notice or at any later time specified in that notice. Unless otherwise specified in the notice of resignation, the acceptance of the resignation shall not be necessary to make it effective. Any resignation is without prejudice to the rights, if any, of the corporation under any contract to which the officer is a party.

5.5 VACANCIES IN OFFICES

Any vacancy occurring in any office of the corporation shall be filled by the board of directors or as provided in Section 5.3.

5.6 REPRESENTATION OF SHARES OF OTHER CORPORATIONS

The chairperson of the board of directors, the president, any vice president, the treasurer, the secretary or assistant secretary of this corporation, or any other person authorized by the board of directors or the president or a vice president, is authorized to vote, represent, and exercise on behalf of this corporation all rights incident to any and all shares of any other corporation or corporations standing in the name of this corporation. The authority granted herein may be exercised either by such person directly or by any other person authorized to do so by proxy or power of attorney duly executed by such person having the authority.

5.7 AUTHORITY AND DUTIES OF OFFICERS

All officers of the corporation shall respectively have such authority and perform such duties in the management of the business of the corporation as may be designated from time to time by the board of directors and, to the extent not so provided, as generally pertain to their respective offices, subject to the control of the board of directors.

ARTICLE VI – STOCK

6.1 STOCK CERTIFICATES; PARTLY PAID SHARES

The shares of the corporation shall be represented by certificates, provided that the board of directors may provide by resolution or resolutions that some or all of any or all classes or series of its stock shall be uncertificated shares. Any such resolution shall not apply to shares represented by a certificate until such certificate is surrendered to the corporation. Unless otherwise provided by resolution of the board of directors, every holder of stock represented by certificates shall be entitled to have a certificate signed by, or in the name of, the corporation by any two authorized officers of the corporation representing the number of shares registered in certificate form. Any or all of the signatures on the certificate may be a facsimile. In case any officer, transfer agent or registrar who has signed or whose facsimile signature has been placed upon a certificate has ceased to be such officer, transfer agent or registrar before such certificate is issued, it may be issued by the corporation with the same effect as if such person were such officer, transfer agent or registrar at the date of issue. The corporation shall not have power to issue a certificate in bearer form.

The corporation may issue the whole or any part of its shares as partly paid and subject to call for the remainder of the consideration to be paid therefor. Upon the face or back of each stock certificate issued to represent any such partly paid shares, or upon the books and records of the corporation in the case of uncertificated partly paid shares, the total amount of the consideration to be paid therefor and the amount paid thereon shall be stated. Upon the declaration of any dividend on fully paid shares, the corporation shall declare a dividend upon partly paid shares of the same class, but only upon the basis of the percentage of the consideration actually paid thereon.

6.2 SPECIAL DESIGNATION ON CERTIFICATES

If the corporation is authorized to issue more than one class of stock or more than one series of any class, then the powers, the designations, the preferences, and the relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights shall be set forth in full or summarized on the face or back of the certificate that the corporation shall issue to represent such class or series of stock; *provided*, *however*, that, except as otherwise provided in Section 202 of the DGCL, in lieu of the foregoing requirements, there may be set forth on the face or back of the certificate that the corporation shall issue to represent such class or series of stock, a statement that the corporation will furnish without charge to each stockholder who so requests the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights. Within a reasonable time after the issuance or transfer of uncertificated stock, the registered owner thereof shall be given a notice, in writing or by electronic transmission, containing the information required to be set forth or stated on certificates pursuant to this Section 6.2 or Sections 156, 202(a), 218(a) or 364 of the DGCL or with respect to this Section 6.2 a statement that the corporation will furnish without charge to each stockholder who so requests the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights. Except as otherwise expressly provided by law, the rights and obligations of the holders of uncertificated stock and the rights and obligations of the holders of certificates representing stock of the same class and series shall be identical.

6.3 LOST CERTIFICATES

Except as provided in this Section 6.3, no new certificates for shares shall be issued to replace a previously issued certificate unless the latter is surrendered to the corporation and cancelled at the same time. The corporation may issue a new certificate of stock or uncertificated shares in the place of any certificate theretofore issued by it, alleged to have been lost, stolen or destroyed, and the corporation may require the owner of the lost, stolen or destroyed certificate, or such owner's legal representative, to give the corporation a bond sufficient to indemnify it against any claim that may be made against it on account of the alleged loss, theft or destruction of any such certificate or the issuance of such new certificate or uncertificated shares.

6.4 DIVIDENDS

The board of directors, subject to any restrictions contained in the certificate of incorporation or applicable law, may declare and pay dividends upon the shares of the corporation's capital stock. Dividends may be paid in cash, in property, or in shares of the corporation's capital stock, subject to the provisions of the certificate of incorporation.

The board of directors may set apart out of any of the funds of the corporation available for dividends a reserve or reserves for any proper purpose and may abolish any such reserve. Such purposes shall include but not be limited to equalizing dividends, repairing or maintaining any property of the corporation, and meeting contingencies.

6.5 TRANSFER OF STOCK

Transfers of record of shares of stock of the corporation shall be made only upon its books by the holders thereof, in person or by an attorney duly authorized, and, if such stock is certificated, upon the surrender of a certificate or certificates for a like number of shares, properly endorsed or accompanied by proper evidence of succession, assignation or authority to transfer.

6.6 STOCK TRANSFER AGREEMENTS

The corporation shall have power to enter into and perform any agreement with any number of stockholders of any one or more classes of stock of the corporation to restrict the transfer of shares of stock of the corporation of any one or more classes owned by such stockholders in any manner not prohibited by the DGCL.

6.7 REGISTERED STOCKHOLDERS

The corporation:

(i) shall be entitled to treat the person registered on its books as the owner of any share or shares as the person exclusively entitled to receive dividends, vote, receive notifications and otherwise exercise all the rights and powers of an owner of such share or shares; and

(ii) shall not be bound to recognize any equitable or other claim to or interest in such share or shares on the part of another person, whether or not it shall have express or other notice thereof, except as otherwise provided by the laws of Delaware.

ARTICLE VII – MANNER OF GIVING NOTICE AND WAIVER

7.1 NOTICE OF STOCKHOLDERS' MEETINGS

Notice of any meeting of stockholders, if mailed, is given when deposited in the United States mail, postage prepaid, directed to the stockholder at such stockholder's address as it appears on the corporation's records. An affidavit of the secretary or an assistant secretary of the corporation or of the transfer agent or other agent of the corporation that the notice has been given shall, in the absence of fraud, be *prima facie* evidence of the facts stated therein.

7.2 NOTICE BY ELECTRONIC TRANSMISSION

Without limiting the manner by which notice otherwise may be given effectively to stockholders pursuant to the DGCL, the certificate of incorporation or these bylaws, any notice to stockholders given by the corporation under any provision of the DGCL, the certificate of incorporation or these bylaws shall be effective if given by a form of electronic transmission consented to by the stockholder to whom the notice is given. Any such consent shall be revocable by the stockholder by written notice to the corporation. Any such consent shall be deemed revoked if:

(i) the corporation is unable to deliver by electronic transmission two consecutive notices given by the corporation in accordance with such consent; and

(ii) such inability becomes known to the secretary or an assistant secretary of the corporation or to the transfer agent, or other person responsible for the giving of notice.

However, the inadvertent failure to treat such inability as a revocation shall not invalidate any meeting or other action.

Any notice given pursuant to the preceding paragraph shall be deemed given:

(i) if by facsimile telecommunication, when directed to a number at which the stockholder has consented to receive notice;

(ii) if by electronic mail, when directed to an electronic mail address at which the stockholder has consented to receive notice;

(iii) if by a posting on an electronic network together with separate notice to the stockholder of such specific posting, upon the later of (A) such posting and (B) the giving of such separate notice; and

(iv) if by any other form of electronic transmission, when directed to the stockholder.

An affidavit of the secretary or an assistant secretary or of the transfer agent or other agent of the corporation that the notice has been given by a form of electronic transmission shall, in the absence of fraud, be *prima facie* evidence of the facts stated therein.

An "electronic transmission" means any form of communication, not directly involving the physical transmission of paper, including the use of, or participation in, one or more electronic networks or databases (including one or more distributed electronic networks or databases), that creates a record that may be retained, retrieved, and reviewed by a recipient thereof, and that may be directly reproduced in paper form by such a recipient through an automated process.

Notice by a form of electronic transmission shall not apply to Sections 164, 296, 311, 312 or 324 of the DGCL.

7.3 NOTICE TO STOCKHOLDERS SHARING AN ADDRESS

Except as otherwise prohibited under the DGCL, without limiting the manner by which notice otherwise may be given effectively to stockholders, any notice to stockholders given by the corporation under the provisions of the DGCL, the certificate of incorporation or these bylaws shall be effective if given by a single written notice to stockholders who share an address if consented to by the stockholders at that address to whom such notice is given. Any such consent shall be revocable by the stockholder by written notice to the corporation. Any stockholder who fails to object in writing to the corporation, within 60 days of having been given written notice by the corporation of its intention to send the single notice, shall be deemed to have consented to receiving such single written notice.

7.4 NOTICE TO PERSON WITH WHOM COMMUNICATION IS UNLAWFUL

Whenever notice is required to be given, under the DGCL, the certificate of incorporation or these bylaws, to any person with whom communication is unlawful, the giving of such notice to such person shall not be required and there shall be no duty to apply to any governmental authority or agency for a license or permit to give such notice to such person. Any action or meeting which shall be taken or held without notice to any such person with whom communication is unlawful shall have the same force and effect as if such notice had been duly given. In the event that the action taken by the corporation is such as to require the filing of a certificate under the DGCL, the certificate shall state, if such is the fact and if notice is required, that notice was given to all persons entitled to receive notice except such persons with whom communication is unlawful.

7.5 WAIVER OF NOTICE

Whenever notice is required to be given under any provision of the DGCL, the certificate of incorporation or these bylaws, a written waiver, signed by the person entitled to notice, or a waiver by electronic transmission by the person entitled to notice, whether before or after the time of the event for which notice is to be given, shall be deemed equivalent to notice. Attendance of a person at a meeting shall constitute a waiver of notice of such meeting, except when the person attends a meeting for the express purpose of objecting at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Neither the business to be transacted at, nor the purpose of, any regular or special meeting of the stockholders need be specified in any written waiver of notice or any waiver by electronic transmission unless so required by the certificate of incorporation or these bylaws.

ARTICLE VIII – INDEMNIFICATION

8.1 INDEMNIFICATION OF DIRECTORS AND OFFICERS IN THIRD PARTY PROCEEDINGS

Subject to the other provisions of this Article VIII, the corporation shall indemnify, to the fullest extent permitted by the DGCL, as now or hereinafter in effect, any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (a "Proceeding") (other than an action by or in the right of the corporation) by reason of the fact that such person is or was a director or officer of the corporation, or is or was a director or officer of the corporation serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such Proceeding if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe such person's conduct was unlawful. The termination of any Proceeding by judgment, order, settlement, conviction, or upon a plea of *nolo contendere* or its equivalent, shall not, of itself, create a presumption that the person did not act in good faith and in a manner which such person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had reasonable cause to believe that such person's conduct was unlawful.

8.2 INDEMNIFICATION OF DIRECTORS AND OFFICERS IN ACTIONS BY OR IN THE RIGHT OF THE CORPORATION

Subject to the other provisions of this Article VIII, the corporation shall indemnify, to the fullest extent permitted by the DGCL, as now or hereinafter in effect, any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that such person is or was a director or officer of the corporation, or is or was a director or officer of the corporation serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or

other enterprise against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection with the defense or settlement of such action or suit if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the corporation; except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

8.3 SUCCESSFUL DEFENSE

To the extent that a present or former director or officer of the corporation has been successful on the merits or otherwise in defense of any action, suit or proceeding described in Section 8.1 or Section 8.2, or in defense of any claim, issue or matter therein, such person shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection therewith.

8.4 INDEMNIFICATION OF OTHERS

Subject to the other provisions of this Article VIII, the corporation shall have power to indemnify its employees and agents to the extent not prohibited by the DGCL or other applicable law. The board of directors shall have the power to delegate to such person or persons the determination of whether employees or agents shall be indemnified.

8.5 ADVANCED PAYMENT OF EXPENSES

Expenses (including attorneys' fees) actually and reasonably incurred by an officer or director of the corporation in defending any Proceeding shall be paid by the corporation in advance of the final disposition of such Proceeding upon receipt of a written request therefor (together with documentation reasonably evidencing such expenses) and an undertaking by or on behalf of the person to repay such amounts if it shall ultimately be determined that the person is not entitled to be indemnified under this Article VIII or the DGCL. Such expenses (including attorneys' fees) actually and reasonably incurred by former directors and officers or other employees and agents of the corporation or by persons serving at the request of the corporation as directors, officers, employees or agents of another corporation, partnership, joint venture, trust or other enterprise may be so paid upon such terms and conditions, if any, as the corporation deems appropriate. The right to advancement of expenses shall not apply to any Proceeding (or any part of any Proceeding) for which indemnity is excluded pursuant to these bylaws, but shall apply to any Proceeding (or any part of any Proceeding) referenced in Section 8.6(ii) or 8.6(iii) prior to a determination that the person is not entitled to be indemnified by the corporation.

8.6 LIMITATION ON INDEMNIFICATION

Subject to the requirements in Section 8.3 and the DGCL, the corporation shall not be obligated to indemnify any person pursuant to this Article VIII in connection with any Proceeding (or any part of any Proceeding):

(i) for which payment has actually been made to or on behalf of such person under any statute, insurance policy, indemnity provision, vote or otherwise, except with respect to any excess beyond the amount paid;

(ii) for an accounting or disgorgement of profits pursuant to Section 16(b) of the 1934 Act, or similar provisions of federal, state or local statutory law or common law, if such person is held liable therefor (including pursuant to any settlement arrangements);

(iii) for any reimbursement of the corporation by such person of any bonus or other incentive-based or equity-based compensation or of any profits realized by such person from the sale of securities of the corporation, as required in each case under the 1934 Act (including any such reimbursements that arise from an accounting restatement of the corporation pursuant to Section 304 of the Sarbanes-Oxley Act of 2002 (the "Sarbanes-Oxley Act"), or the payment to the corporation of profits arising from the purchase and sale by such person of securities in violation of Section 306 of the Sarbanes-Oxley Act), if such person is held liable therefor (including pursuant to any settlement arrangements);

(iv) initiated by such person, including any Proceeding (or any part of any Proceeding) initiated by such person against the corporation or its directors, officers, employees, agents or other indemnitees, unless (a) the board of directors authorized the Proceeding (or the relevant part of the Proceeding) prior to its initiation, (b) the corporation provides the indemnification, in its sole discretion, pursuant to the powers vested in the corporation under applicable law, (c) otherwise required to be made under Section 8.7 or (d) otherwise required by applicable law; or

(v) if prohibited by applicable law.

8.7 DETERMINATION; CLAIM

If a claim for indemnification or advancement of expenses under this Article VIII is not paid in full within 90 days after receipt by the corporation of the written request therefor, the claimant shall be entitled to an adjudication by a court of competent jurisdiction of his or her entitlement to such indemnification or advancement of expenses. The corporation shall indemnify such person against any and all expenses that are actually and reasonably incurred by such person in connection with any action for indemnification or advancement of expenses from the corporation under this Article VIII, to the extent such person is successful in such action, and to the extent not prohibited by law. In any such suit, the corporation shall, to the fullest extent not prohibited by law, have the burden of proving that the claimant is not entitled to the requested indemnification or advancement of expenses.

8.8 NON-EXCLUSIVITY OF RIGHTS

The indemnification and advancement of expenses provided by, or granted pursuant to, this Article VIII shall not be deemed exclusive of any other rights to which those seeking indemnification or advancement of expenses may be entitled under the certificate of incorporation or any statute, bylaw, agreement, vote of stockholders or disinterested directors or otherwise, both as to action in such person's official capacity and as to action in another capacity while holding such office. The corporation is specifically authorized to enter into individual contracts with any or all of its directors, officers, employees or agents respecting indemnification and advancement of expenses, to the fullest extent not prohibited by the DGCL or other applicable law.

8.9 INSURANCE

The corporation may purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as

a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any liability asserted against such person and incurred by such person in any such capacity, or arising out of such person's status as such, whether or not the corporation would have the power to indemnify such person against such liability under the provisions of the DGCL.

8.10 SURVIVAL

The rights to indemnification and advancement of expenses conferred by this Article VIII shall continue as to a person who has ceased to be a director, officer, employee or agent and shall inure to the benefit of the heirs, executors and administrators of such a person.

8.11 EFFECT OF REPEAL OR MODIFICATION

A right to indemnification or to advancement of expenses arising under a provision of the certificate of incorporation or a bylaw shall not be eliminated or impaired by an amendment to the certificate of incorporation or these bylaws after the occurrence of the act or omission that is the subject of the civil, criminal, administrative or investigative action, suit or proceeding for which indemnification or advancement of expenses is sought, unless the provision in effect at the time of such act or omission explicitly authorizes such elimination or impairment after such action or omission has occurred.

8.12 CERTAIN DEFINITIONS

For purposes of this Article VIII, references to the "corporation" shall include, in addition to the resulting corporation, any constituent corporation (including any constituent of a constituent) absorbed in a consolidation or merger which, if its separate existence had continued, would have had power and authority to indemnify its directors, officers, employees or agents, so that any person who is or was a director, officer, employee or agent of such constituent corporation, or is or was serving at the request of such constituent corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, shall stand in the same position under the provisions of this Article VIII with respect to the resulting or surviving corporation as such person would have with respect to such constituent corporation if its separate existence had continued. For purposes of this Article VIII, references to "other enterprises" shall include employee benefit plans; references to "fines" shall include any excise taxes assessed on a person with respect to an employee benefit plan; and references to "serving at the request of the corporation" shall include any service as a director, officer, employee or agent of the corporation which imposes duties on, or involves services by, such director, officer, employee or agent with respect to an employee benefit plan, its participants or beneficiaries; and a person who acted in good faith and in a manner such person reasonably believed to be in the interest of the participants and beneficiaries of an employee benefit plan shall be deemed to have acted in a manner "not opposed to the best interests of the corporation" as referred to in this Article VIII.

ARTICLE IX – GENERAL MATTERS

9.1 EXECUTION OF CORPORATE CONTRACTS AND INSTRUMENTS

Except as otherwise provided by law, the certificate of incorporation or these bylaws, the board of directors may authorize any officer or officers, or agent or agents, to enter into any contract or execute any document or instrument in the name of and on behalf of the corporation; such authority may be general or confined to specific instances. Unless so authorized or ratified by the board of directors or within the agency power of an officer, no officer, agent or employee shall have any power or authority to bind the corporation by any contract or engagement or to pledge its credit or to render it liable for any purpose or for any amount.

9.2 FISCAL YEAR

The fiscal year of the corporation shall be fixed by resolution of the board of directors and may be changed by the board of directors.

9.3 SEAL

The corporation may adopt a corporate seal, which shall be adopted and which may be altered by the board of directors. The corporation may use the corporate seal by causing it or a facsimile thereof to be impressed or affixed or in any other manner reproduced.

9.4 CONSTRUCTION; DEFINITIONS

Unless the context requires otherwise, the general provisions, rules of construction, and definitions in the DGCL shall govern the construction of these bylaws. Without limiting the generality of this provision, the singular number includes the plural, the plural number includes the singular, and the term “person” includes both a corporation and a natural person.

ARTICLE X – AMENDMENTS

These bylaws may be adopted, amended or repealed by the stockholders entitled to vote; provided, however, that the affirmative vote of the holders of at least 66 2/3% of the total voting power of outstanding voting securities, voting together as a single class, shall be required for the stockholders of the corporation to alter, amend or repeal, or adopt any bylaw inconsistent with, the following provisions of these bylaws: Article II, Sections 3.1, 3.2, 3.4 and 3.11 of Article III, Article VIII and this Article X (including, without limitation, any such Article or Section as renumbered as a result of any amendment, alteration, change, repeal, or adoption of any other Bylaw). The board of directors shall also have the power to adopt, amend or repeal bylaws; provided, however, that a bylaw amendment adopted by stockholders which specifies the votes that shall be necessary for the election of directors shall not be further amended or repealed by the board of directors.

ARTICLE XI – EXCLUSIVE FORUM

Unless the corporation consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall, to the fullest extent permitted by law, be the sole and exclusive forum for (i) any derivative action or proceeding under Delaware statutory or common law brought on behalf of the corporation, (ii) any action asserting a claim of breach of a fiduciary duty owed by any director, officer or other employee of the corporation to the corporation or the corporation’s stockholders, (iii) any action arising pursuant to any provision of the DGCL or the corporation’s certificate of incorporation or these bylaws (as either may be amended from time to time), or (iv) any action asserting a claim governed by the internal affairs doctrine, except for, as to each of (i) through (iv) above, any claim (A) as to which such court determines that there is an indispensable party not subject to the jurisdiction of such court (and the indispensable party does not consent to the personal jurisdiction of such court within ten (10) days following such determination), (B) which is vested in the exclusive jurisdiction of a court or forum other than such

court, or (C) for which such court does not have subject matter jurisdiction. Nothing herein contained shall be construed to preclude stockholders that assert claims under the Securities Act of 1933, as amended, the 1934 Act or any successor thereto, from bringing such claims in state or federal court, subject to applicable law.

Any person or entity purchasing or otherwise acquiring or holding any interest in any security of the corporation shall be deemed to have notice of and consented to the provisions of this Article XI.

NUMBER

IB

SHARES

igm biosciences

CUSIP 449585 10 8

INCORPORATED UNDER THE LAWS OF THE STATE OF DELAWARE

SEE REVERSE FOR CERTAIN DEFINITIONS AND LEGENDS

This certifies that

is the record holder of

FULLY PAID AND NONASSESSABLE SHARES OF VOTING COMMON STOCK, $0.01 PAR VALUE PER SHARE, OF

IGM BIOSCIENCES, INC.

transferable on the books of the corporation in person or by duly authorized attorney upon surrender of this Certificate properly endorsed. This Certificate is not valid until countersigned by the Transfer Agent and registered by the Registrar.

WITNESS the facsimile seal of the Corporation and the facsimile signatures of its duly authorized officers.

Dated:

PRESIDENT & CHIEF EXECUTIVE OFFICER

IGM BIOSCIENCES, INC. CORPORATE SEAL 1993 DELAWARE

CHIEF FINANCIAL OFFICER

BY:

AUTHORIZED SIGNATURE

COUNTERSIGNED AND REGISTERED:
AMERICAN STOCK TRANSFER & TRUST COMPANY, LLC
(BROOKLYN, NY)
TRANSFER AGENT
AND REGISTRAR

The Corporation shall furnish without charge to each stockholder who so requests a statement of the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock of the Corporation or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights. Such requests shall be made to the Corporation's Secretary at the principal office of the Corporation.

KEEP THIS CERTIFICATE IN A SAFE PLACE. IF IT IS LOST, STOLEN, OR DESTROYED THE CORPORATION WILL REQUIRE A BOND INDEMNITY AS A CONDITION TO THE ISSUANCE OF A REPLACEMENT CERTIFICATE.

The following abbreviations, when used in the inscription on the face of this certificate, shall be construed as though they were written out in full according to applicable laws or regulations:

TEN COM	–	as tenants in common
TEN ENT	–	as tenants by the entireties
JT TEN	–	as joint tenants with right of survivorship and not as tenants in common
COM PROP	–	as community property

UNIF GIFT MIN ACT – ..... Custodian .....
(Cust) (Minor)
under Uniform Gifts to Minors Act.....
(State)

UNIF TRF MIN ACT – ..... Custodian (until age .....)
(Cust)
..... under Uniform Transfers
(Minor)
to Minors Act.....
(State)

Additional abbreviations may also be used though not in the above list.

FOR VALUE RECEIVED, _____ hereby sell(s), assign(s) and transfer(s) unto

PLEASE INSERT SOCIAL SECURITY OR OTHER IDENTIFYING NUMBER OF ASSIGNEE

_____

(PLEASE PRINT OR TYPEWRITE NAME AND ADDRESS, INCLUDING ZIP CODE, OF ASSIGNEE)

_____

_____

_____ shares
of the capital stock represented by within Certificate, and do hereby irrevocably constitute and appoint

_____ attorney-in-fact
to transfer the said stock on the books of the within named Corporation with full power of the substitution in the premises.

Dated _____

x _____
_____

x _____
_____

Signature(s) Guaranteed:

NOTICE: THE SIGNATURE TO THIS ASSIGNMENT MUST CORRESPOND WITH THE NAME AS WRITTEN UPON THE FACE OF THE CERTIFICATE IN EVERY PARTICULAR, WITHOUT ALTERATION OR ENLARGEMENT OR ANY CHANGE WHATSOEVER.

By _____

THE SIGNATURE(S) SHOULD BE GUARANTEED BY AN ELIGIBLE GUARANTOR INSTITUTION, (BANKS, STOCKBROKERS, SAVINGS AND LOAN ASSOCIATIONS AND CREDIT UNIONS WITH MEMBERSHIP IN AN APPROVED SIGNATURE GUARANTEE MEDALLION PROGRAM), PURSUANT TO S.E.C. RULE 17Ad-15. GUARANTEES BY A NOTARY PUBLIC ARE NOT ACCEPTABLE. SIGNATURE GUARANTEES MUST NOT BE DATED.

Exhibit 5.1

650 Page Mill Road
Palo Alto, CA 94304-1050

PHONE 650.493.9300
FAX 650.493.6811
www.wsgr.com

Wilson Sonsini Goodrich & Rosati
PROFESSIONAL CORPORATION

September 3, 2019

IGM Biosciences, Inc.
325 E. Middlefield Road
Mountain View, California 94043

Re: Registration Statement on Form S-1

Ladies and Gentlemen:

This opinion is furnished to you in connection with the Registration Statement on Form S-1 (Registration No. 333-233365), as amended (the "**Registration Statement**"), filed by IGM Biosciences, Inc. (the "**Company**") with the Securities and Exchange Commission in connection with the registration under the Securities Act of 1933, as amended, of up to 8,984,375 shares (including up to 1,171,875 shares issuable upon exercise of an option granted to the underwriters by the Company) of the Company's voting common stock, $0.01 par value per share (the "**Shares**"), to be issued and sold by the Company. We understand that the Shares are to be sold to the underwriters for resale to the public as described in the Registration Statement and pursuant to an underwriting agreement, substantially in the form filed as an exhibit to the Registration Statement, to be entered into by and among the Company and the underwriters (the "**Underwriting Agreement**").

We are acting as counsel for the Company in connection with the sale of the Shares by the Company. In such capacity, we have examined originals or copies, certified or otherwise identified to our satisfaction, of such documents, corporate records, certificates of public officials and other instruments as we have deemed necessary for the purposes of rendering this opinion. In our examination, we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, the conformity with the originals of all documents submitted to us as copies, the authenticity of the originals of such documents and the legal competence of all signatories to such documents.

We express no opinion herein as to the laws of any state or jurisdiction other than the General Corporation Law of the State of Delaware (including the statutory provisions and all applicable judicial decisions interpreting those laws) and the federal laws of the United States of America.

On the basis of the foregoing, we are of the opinion that upon the effectiveness of the Company's Amended and Restated Certificate of Incorporation, a form of which has been filed as Exhibit 3.2 to the Registration Statement, the Shares to be issued and sold by the Company have been duly authorized and, when such Shares are issued and paid for in accordance with the terms of the Underwriting Agreement, will be validly issued, fully paid and nonassessable.

We consent to the use of this opinion as an exhibit to the Registration Statement, and we consent to the reference of our name under the caption "Legal Matters" in the prospectus forming part of the Registration Statement.

Very truly yours,

WILSON SONSINI GOODRICH & ROSATI
Professional Corporation

/s/ Wilson Sonsini Goodrich & Rosati

IGM BIOSCIENCES, INC.
2018 OMNIBUS INCENTIVE PLAN

ARTICLE 1
PURPOSE

1.1 GENERAL. The purpose of the IGM Biosciences, Inc. 2018 Omnibus Incentive Plan (the "Plan") is to promote the success, and enhance the value, of IGM Biosciences, Inc. (the "Company"), by linking the personal interests of employees, officers, directors and consultants of the Company or any Affiliate (as defined below) to those of Company stockholders and by providing such persons with an incentive for outstanding performance. The Plan is further intended to provide flexibility to the Company in its ability to motivate, attract, and retain the services of employees, officers, directors and consultants upon whose judgment, interest, and special effort the successful conduct of the Company's operation is largely dependent. Accordingly, the Plan permits the grant of incentive awards from time to time to selected employees, officers, directors and consultants of the Company and its Affiliates.

ARTICLE 2
DEFINITIONS

2.1 DEFINITIONS. When a word or phrase appears in this Plan with the initial letter capitalized, and the word or phrase does not commence a sentence, the word or phrase shall generally be given the meaning ascribed to it in this Section or in Section 1.1 unless a clearly different meaning is required by the context. The following words and phrases shall have the following meanings:

(a) "Affiliate" means (i) any Subsidiary or Parent, or (ii) an entity that directly or through one or more intermediaries controls, is controlled by or is under common control with, the Company, as determined by the Committee.

(b) "Award" means an award of Options, Stock Appreciation Rights, Restricted Stock, Restricted Stock Units, Deferred Stock Units, Performance Awards, Other Stock-Based Awards, or any other right or interest relating to Stock or cash, granted to a Participant under the Plan.

(c) "Award Certificate" means a written document, in such form as the Committee prescribes from time to time, setting forth the terms and conditions of an Award. Award Certificates may be in the form of individual award agreements or certificates or a program document describing the terms and provisions of an Award or series of Awards under the Plan. The Committee may provide for the use of electronic, internet or other non-paper Award Certificates, and the use of electronic, internet or other non-paper means for the acceptance thereof and actions thereunder by a Participant.

(d) "Beneficial Owner" shall have the meaning given such term in Rule 13d-3 of the General Rules and Regulations under the 1934 Act.

(e) "Board" means the Board of Directors of the Company.

(f) "Cause" as a reason for a Participant's termination of employment shall have the meaning assigned such term in the employment, severance or similar agreement, if any, between such Participant and the Company or an Affiliate, provided, however that if there is no such employment, severance or similar agreement in which such term is defined, and unless

otherwise defined in the applicable Award Certificate, "Cause" shall mean any of the following acts by the Participant, as determined in good faith by the Committee or the Board: (i) commission of an act of fraud, embezzlement, misappropriation, or breach of fiduciary duty against the Company or any Affiliate; (ii) commission of a felony involving the business, assets, customers or clients of the Company or any Affiliate, or charge with, indictment for, conviction of, pleading guilty to, confession to, or entering of a plea of *nolo contendere* by Participant for any other felony or any crime involving fraud, dishonesty, moral turpitude, or a breach of trust; (iii) breach of any written confidentiality, non-compete, non-solicitation or business opportunity covenant contained in any agreement entered into by such Participant with the Company or any Affiliate; (iv) substantial failure to perform duties to the Company or any Affiliate (other than any such failure resulting from the Participant's Disability) after written notice and an opportunity to cure (not to exceed 30 days); (v) gross misconduct or gross negligence materially injurious to the Company or any Affiliate; (vi) Participant's violation of the Company's or any Affiliate's policy against harassment, its equal employment opportunity policy, or the Company's or any Affiliate's code of business conduct; or (vii) a material violation of any other policy or procedure of the Company or any Affiliate.

(g) "Change in Control" means and includes the occurrence of any one of the following events but specifically excludes a Public Offering:

(i) individuals who, on the Effective Date, constitute the Board (the "Incumbent Directors") cease for any reason to constitute at least a majority of such Board, provided that any person becoming a director after the Effective Date and whose election or nomination for election was approved by a vote of at least a majority of the Incumbent Directors then on the Board shall be an Incumbent Director; provided, however, that no individual initially elected or nominated as a director of the Company as a result of an actual or threatened election contest with respect to the election or removal of directors ("Election Contest") or other actual or threatened solicitation of proxies or consents by or on behalf of any Person other than the Board ("Proxy Contest"), including by reason of any agreement intended to avoid or settle any Election Contest or Proxy Contest, shall be deemed an Incumbent Director; or

(ii) any person becomes a Beneficial Owner, directly or indirectly, of either (A) 50% or more of the then-outstanding shares of common stock of the Company ("Company Common Stock") or (B) securities of the Company representing 50% or more of the combined voting power of the Company's then outstanding securities eligible to vote for the election of directors (the "Company Voting Securities"); provided, however, that for purposes of this subsection (ii), the following acquisitions of Company Common Stock or Company Voting Securities shall not constitute a Change in Control: (w) an acquisition directly from the Company, (x) an acquisition by the Company or a Subsidiary of the Company, (y) an acquisition by any employee benefit plan (or related trust) sponsored or maintained by the Company or any Subsidiary of the Company, or (z) an acquisition pursuant to a Non-Qualifying Transaction (as defined in subsection (iii) below); or

(iii) the consummation of a reorganization, merger, consolidation, statutory share exchange or similar form of corporate transaction involving the Company or a Subsidiary (a "Reorganization"), or the sale or other disposition of all or substantially all of the Company's assets (a "Sale") or the acquisition of assets or stock of another corporation (an "Acquisition"), unless immediately following such Reorganization,

Sale or Acquisition: (A) all or substantially all of the individuals and entities who were the beneficial owners, respectively, of the outstanding Company Common Stock and outstanding Company Voting Securities immediately prior to such Reorganization, Sale or Acquisition beneficially own, directly or indirectly, more than 50% of, respectively, the then outstanding shares of common stock and the combined voting power of the then outstanding voting securities entitled to vote generally in the election of directors, as the case may be, of the corporation resulting from such Reorganization, Sale or Acquisition (including, without limitation, a corporation which as a result of such transaction owns the Company or all or substantially all of the Company's assets or stock either directly or through one or more subsidiaries, the "Surviving Corporation") in substantially the same proportions as their ownership, immediately prior to such Reorganization, Sale or Acquisition, of the outstanding Company Common Stock and the outstanding Company Voting Securities, as the case may be, and (B) no person (other than (x) the Company or any Subsidiary of the Company, (y) the Surviving Corporation or its ultimate parent corporation, or (z) any employee benefit plan (or related trust) sponsored or maintained by any of the foregoing) is the beneficial owner, directly or indirectly, of 50% or more of the total common stock or 50% or more of the total voting power of the outstanding voting securities eligible to elect directors of the Surviving Corporation, and (C) at least a majority of the members of the board of directors of the Surviving Corporation were Incumbent Directors at the time of the Board's approval of the execution of the initial agreement providing for such Reorganization, Sale or Acquisition (any Reorganization, Sale or Acquisition which satisfies all of the criteria specified in (A), (B) and (C) above shall be deemed to be a "Non-Qualifying Transaction"); or

(iv) stockholders approve a complete liquidation or dissolution of the Company, other than a Non-Qualifying Transaction.

(h) "Code" means the Internal Revenue Code of 1986, as amended from time to time. For purposes of this Plan, references to sections of the Code shall be deemed to include references to any applicable regulations thereunder and any successor or similar provision.

(i) "Committee" means the committee of the Board described in Article 4.

(j) "Company" means IGM Biosciences, Inc., a Delaware corporation, or any successor corporation.

(k) "Continuous Service" means the absence of any interruption or termination of service as an employee, officer, director or consultant of the Company or any Affiliate, as applicable; provided, however, that for purposes of an Incentive Stock Option "Continuous Service" means the absence of any interruption or termination of service as an employee of the Company or any Parent or Subsidiary, as applicable, pursuant to applicable tax regulations. Unless otherwise defined in the applicable Award Certificate, Continuous Service shall not be considered interrupted in the following cases: (i) a Participant transfers employment between the Company and an Affiliate or between Affiliates, (ii) in the discretion of the Committee as specified at or prior to such occurrence, in the case of a spin-off, sale or disposition of the Participant's employer from the Company or any Affiliate, (iii) a Participant transfers from being an employee of the Company or an Affiliate to being a director of the Company or of an Affiliate, or vice versa, (iv) in the discretion of the Committee, a Participant transfers from being an employee of the Company or an Affiliate to being a consultant to the Company or of

an Affiliate, or vice versa, (v) in the discretion of the Committee as specified at or prior to such occurrence, a Participant transfers from being an employee of the Company or an Affiliate to being a consultant to the Company or an Affiliate, or vice versa, or (vi) any leave of absence authorized in writing by the Company prior to its commencement; provided, however, that for purposes of Incentive Stock Options, no such leave may exceed 90 days, unless reemployment upon expiration of such leave is guaranteed by statute or contract. If reemployment upon expiration of a leave of absence approved by the Company is not so guaranteed, on the 91st day of such leave any Incentive Stock Option held by the Participant shall cease to be treated as an Incentive Stock Option and shall be treated for tax purposes as a Nonstatutory Stock Option. Whether military, government or other service or other leave of absence shall constitute a termination of Continuous Service shall be determined in each case by the Committee at its discretion, and any determination by the Committee shall be final and conclusive; provided, however, that for purposes of any Award that is subject to Code Section 409A, the determination of a leave of absence must comply with the requirements of a "bona fide leave of absence" as provided in Treas. Reg. Section 1.409A-1(h).

(l) "Deferred Stock Unit" means a right granted to a Participant under Article 9 to receive Shares (or the equivalent value in cash or other property if the Committee so provides) at a future time as determined by the Committee, or as determined by the Participant within guidelines established by the Committee in the case of voluntary deferral elections.

(m) "Disability" means, unless otherwise defined in the applicable Award Certificate, the inability of the Participant, as reasonably determined by the Company, to perform the essential functions of his or her regular duties and responsibilities, with or without reasonable accommodation, due to a medically determinable physical or mental illness which has lasted (or can reasonably be expected to last) for a period of six (6) consecutive months.

(n) "Dividend Equivalent" means a right granted to a Participant under Article 11.

(o) "Effective Date" has the meaning assigned such term in Section 3.1.

(p) "Eligible Participant" means an employee, officer, director or consultant of the Company or any Affiliate.

(q) "Exchange" means any national securities exchange on which the Stock may from time to time be listed or traded.

(r) "Fair Market Value," on any date, will be determined by such method or procedures as the Committee determines in good faith to be reasonable and in compliance with Code Section 409A.

(s) "Full-Value Award" means an Award other than in the form of an Option or SAR, and which is settled by the issuance of Stock (or at the discretion of the Committee, settled in cash valued by reference to Stock value).

(t) "Grant Date" of an Award means the first date on which all necessary corporate action has been taken to approve the grant of the Award as provided in the Plan, or such later date as is determined and specified as part of that authorization process. Notice of the grant shall be provided to the grantee within a reasonable time after the Grant Date.

(u) "Incentive Stock Option" means an Option that is intended to be an incentive stock option and meets the requirements of Section 422 of the Code or any successor provision thereto.

(v) "Nonstatutory Stock Option" means an Option that is not an Incentive Stock Option.

(w) "Option" means a right granted to a Participant under Article 7 of the Plan to purchase Stock at a specified price during specified time periods. An Option may be either an Incentive Stock Option or a Nonstatutory Stock Option.

(x) "Other Stock-Based Award" means a right, granted to a Participant under Article 12, that relates to or is valued by reference to Stock or other Awards relating to Stock.

(y) "Parent" means a corporation, limited liability company, partnership or other entity which owns or beneficially owns a majority of the outstanding voting stock or voting power of the Company. Notwithstanding the above, with respect to an Incentive Stock Option, Parent shall have the meaning set forth in Section 424(e) of the Code.

(z) "Participant" means an Eligible Participant who has been granted an Award under the Plan; provided that in the case of the death of a Participant, the term "Participant" refers to a beneficiary designated pursuant to Section 13.4 or the legal guardian or other legal representative acting in a fiduciary capacity on behalf of the Participant under applicable state law and court supervision.

(aa) "Performance Award" means any award granted under the Plan pursuant to Article 10.

(bb) "Person" means any individual, entity or group, within the meaning of Section 3(a)(9) of the 1934 Act and as used in Section 13(d)(3) or 14(d)(2) of the 1934 Act.

(cc) "Plan" means the IGM Biosciences, Inc. 2018 Omnibus Incentive Plan, as amended from time to time.

(dd) "Public Offering" means a public offering of any class or series of the Company's equity securities pursuant to a registration statement filed by the Company under the 1933 Act.

(ee) "Restricted Stock" means Stock granted to a Participant under Article 9 that is subject to certain restrictions and to risk of forfeiture.

(ff) "Restricted Stock Unit" means the right granted to a Participant under Article 9 to receive shares of Stock (or the equivalent value in cash or other property if the Committee so provides) in the future, which right is subject to certain restrictions and to risk of forfeiture.

(gg) "Shares" means shares of Stock. If there has been an adjustment or substitution pursuant to Section 14.1, the term "Shares" shall also include any shares of stock or other securities that are substituted for Shares or into which Shares are adjusted pursuant to Section 14.1.

(hh) "Stock" means the Company's Common Stock, $0.01 par value and such other securities of the Company as may be substituted for Stock pursuant to Article 14.

(ii) "Stock Appreciation Right" or "SAR" means a right granted to a Participant under Article 8 to receive a payment equal to the difference between the Fair Market Value of a Share as of the date of exercise of the SAR over the base price of the SAR, all as determined pursuant to Article 8.

(jj) "Subsidiary" means any corporation, limited liability company, partnership or other entity, domestic or foreign, of which a majority of the outstanding voting stock or voting power is beneficially owned directly or indirectly by the Company. Notwithstanding the above, with respect to an Incentive Stock Option, Subsidiary shall have the meaning set forth in Section 424(f) of the Code.

(kk) "1933 Act" means the Securities Act of 1933, as amended from time to time.

(ll) "1934 Act" means the Securities Exchange Act of 1934, as amended from time to time.

ARTICLE 3
EFFECTIVE TERM OF PLAN

3.1 EFFECTIVE DATE. The Plan shall be effective as of the date it is approved by the Board (the "Effective Date"). The Plan shall be submitted to the Company's stockholders for approval within twelve (12) months of the Board's approval thereof. No Incentive Stock Options granted under the Plan may be exercised prior to approval of the Plan by the stockholders and if the stockholders fail to approve the Plan within twelve (12) months of the Board's approval thereof, any Incentive Stock Options previously granted hereunder shall be automatically converted to Nonstatutory Stock Options without any further act by the Company or the Participant.

3.2 TERMINATION OF PLAN. Unless earlier terminated as provided herein, the Plan shall continue in effect until the tenth (10^{th}) anniversary of the Effective Date or, if the stockholders approve an amendment to the Plan that increases the number of Shares subject to the Plan, the tenth (10^{th}) anniversary of the date of such approval. The termination of the Plan on such date shall not affect the validity of any Award outstanding on the date of termination, which shall continue to be governed by the applicable terms and conditions of the Plan. Notwithstanding the foregoing, no Incentive Stock Options may be granted more than ten (10) years after the Effective Date.

ARTICLE 4
ADMINISTRATION

4.1 COMMITTEE. The Plan shall be administered by a Committee appointed by the Board (which Committee shall consist of at least two directors) or, at the discretion of the Board from time to time, the Plan may be administered by the Board. Unless and until changed by the Board, the Compensation, Nomination and Governance Committee of the Board is designated as the Committee to administer the Plan. The members of the Committee shall be appointed by, and may be changed at any time and from time to time in the discretion of, the Board. The Board may reserve to itself any or all of the authority and responsibility of the Committee under the Plan or may act as administrator of the Plan for any and all purposes. To the extent the Board has reserved any authority and responsibility or during any time that the Board is acting as administrator of the Plan, it shall have all the powers and protections of the Committee hereunder, and any reference herein to the Committee (other than in this Section 4.1) shall include the Board. To the extent any action of the Board under the Plan conflicts with actions taken by the Committee, the actions of the Board shall control.

4.2 ACTION AND INTERPRETATIONS BY THE COMMITTEE. For purposes of administering the Plan, the Committee may from time to time adopt rules, regulations, guidelines and procedures for carrying out the provisions and purposes of the Plan and make such other determinations, not inconsistent with the Plan, as the Committee may deem appropriate. The Committee may correct any defect, supply any omission or reconcile any inconsistency in the Plan or in any Award in the manner and to the extent it deems necessary to carry out the intent of the Plan. The Committee's interpretation of the Plan, any Awards granted under the Plan, any Award Certificate and all decisions and determinations by the Committee with respect to the Plan are final, binding, and conclusive on all parties. Each member of the Committee is entitled to, in good faith, rely or act upon any report or other information furnished to that member by any officer or other employee of the Company or any Affiliate, the Company's or an Affiliate's independent certified public accountants, Company counsel or any executive compensation consultant or other professional retained by the Company or the Committee to assist in the administration of the Plan. No member of the Committee will be liable for any good faith determination, act or omission in connection with the Plan or any Award.

4.3 AUTHORITY OF COMMITTEE. Except as provided in Section 4.1 hereof, the Committee has the exclusive power, authority and discretion to:

(a) grant Awards;

(b) designate Participants;

(c) determine the type or types of Awards to be granted to each Participant;

(d) determine the number of Awards to be granted and the number of Shares or dollar amount to which an Award will relate;

(e) determine the terms and conditions of any Award granted under the Plan;

(f) prescribe the form of each Award Certificate, which need not be identical for each Participant;

(g) decide all other matters that must be determined in connection with an Award;

(h) establish, adopt or revise any plan, program or policy for the grant of Awards as it may deem necessary or advisable, including but not limited to short-term incentive programs, and any special plan documents;

(i) establish, adopt or revise any rules, regulations, guidelines or procedures as it may deem necessary or advisable to administer the Plan;

(j) make all other decisions and determinations that may be required under the Plan or as the Committee deems necessary or advisable to administer the Plan;

(k) amend the Plan or any Award Certificate as provided herein; and

(l) adopt such modifications, procedures, and subplans as may be necessary or desirable to comply with provisions of the laws of the United States or any non-U.S. jurisdictions in which the Company or any Affiliate may operate, in order to assure the viability of the benefits of Awards granted to participants located in the United States or such other jurisdictions and to further the objectives of the Plan.

4.4 DELEGATION.

(a) Administrative Duties. The Committee may delegate to one or more of its members or to one or more officers of the Company or an Affiliate or to one or more agents or advisors such administrative duties or powers as it may deem advisable, and the Committee or any individuals to whom it has delegated duties or powers as aforesaid may employ one or more individuals to render advice with respect to any responsibility the Committee or such individuals may have under this Plan.

(b) Special Committee. The Board may, by resolution, expressly delegate to a special committee, consisting of one or more directors who may but need not be officers of the Company, the authority, within specified parameters as to the number and terms of Awards, to (i) designate officers and/or employees of the Company or any of its Affiliates to be recipients of Awards under the Plan, and (ii) to determine the number of such Awards to be received by any such Participants. The acts of such delegates shall be treated hereunder as acts of the Board and such delegates shall report regularly to the Board and the Committee regarding the delegated duties and responsibilities and any Awards so granted.

4.5 INDEMNIFICATION. Each person who is or shall have been a member of the Committee, or the Board, or an officer of the Company to whom authority was delegated in accordance with this Article 4, shall be indemnified and held harmless by the Company against and from any loss, cost, liability, or expense that may be imposed upon or reasonably incurred by him or her in connection with or resulting from any claim, action, suit, or proceeding to which he or she may be a party or in which he or she may be involved by reason of any action taken or failure to act under the Plan and against and from any and all amounts paid by him or her in settlement thereof, with the Company's approval, or paid by him or her in satisfaction of any judgment in any such action, suit, or proceeding against him or her, provided he or she shall give the Company an opportunity, at its own expense, to handle and defend the same before he or she undertakes to handle and defend it on his or her own behalf, unless such loss, cost, liability, or expense is a result of his or her own willful misconduct or except as expressly provided by statute. The foregoing right of indemnification shall not be exclusive of any other rights of indemnification to which such persons may be entitled under the Company's charter or bylaws, as a matter of law, or otherwise, or any power that the Company may have to indemnify them or hold them harmless.

ARTICLE 5
SHARES SUBJECT TO THE PLAN

5.1 NUMBER OF SHARES. Subject to adjustment as provided in Section 5.2 and Section 14.1, the aggregate number of Shares reserved and available for issuance pursuant to Awards granted under the Plan shall be 8,000,000 Shares. The maximum number of Shares that may be issued upon exercise of Incentive Stock Options granted under the Plan shall be 8,000,000 Shares.

5.2 SHARE COUNTING. Shares covered by an Award shall be subtracted from the Plan share reserve as of the Grant Date, but shall be added back to the Plan share reserve or otherwise treated in accordance with subsections (a) through (g) of this Section 5.2.

(a) To the extent that an Award is canceled, terminates, expires, is forfeited or lapses for any reason, any unissued or forfeited Shares subject to the Award will be added back to the Plan share reserve and again be available for issuance pursuant to Awards granted under the Plan.

(b) Shares subject to Awards settled in cash will be added back to the Plan share reserve and again be available for issuance pursuant to Awards granted under the Plan.

(c) Shares withheld from an Award to satisfy tax withholding requirements will count against the number of Shares remaining available for issuance pursuant to Awards granted under the Plan, and Shares delivered by a participant to satisfy tax withholding requirements will not be added to the Plan share reserve.

(d) The full number of Shares subject to an Option shall count against the number of Shares remaining available for issuance pursuant to Awards granted under the Plan, even if the exercise price of an Option is satisfied through net-settlement or by delivering Shares to the Company (by either actual delivery or attestation).

(e) The full number of Shares subject to a SAR shall count against the number of Shares remaining available for issuance pursuant to Awards made under the Plan (rather than the net number of Shares actually delivered upon exercise).

(f) Substitute Awards granted pursuant to Section 13.9 of the Plan shall not count against the Shares otherwise available for issuance under the Plan under Section 5.1.

(g) Shares available under a stockholder-approved plan of a company acquired by the Company (as appropriately adjusted to Shares to reflect the transaction) may be issued under the Plan pursuant to Awards granted to individuals who were not employees of the Company or its Affiliates immediately before such transaction and will not count against the maximum share limitation specified in Section 5.1.

5.3 STOCK DISTRIBUTED. Any Stock distributed pursuant to an Award may consist, in whole or in part, of authorized and unissued Stock, treasury Stock or Stock purchased on the open market.

ARTICLE 6
ELIGIBILITY

6.1 GENERAL. Awards may be granted only to Eligible Participants. Incentive Stock Options may be granted only to Eligible Participants who are employees of the Company or a Parent or Subsidiary as defined in Section 424(e) and (f) of the Code. Eligible Participants who are service providers to an Affiliate may be granted Options or SARs under this Plan only if the Affiliate qualifies as an "eligible issuer of service recipient stock" within the meaning of Treas. Reg. Section 1.409A-1(b)(5)(iii)(E).

ARTICLE 7
STOCK OPTIONS

7.1 GENERAL. The Committee is authorized to grant Options to Participants on the following terms and conditions:

(a) Exercise Price. The exercise price per Share under an Option shall be determined by the Committee, provided that the exercise price for any Option (other than an Option issued as a substitute Award pursuant to Section 13.9) shall not be less than the Fair Market Value as of the Grant Date.

(b) Time and Conditions of Exercise. The Committee shall determine the time or times at which an Option may be exercised in whole or in part, subject to Sections 7.1(d). The Committee shall also determine the performance or other conditions, if any, that must be satisfied before all or part of an Option may be exercised or vested.

(c) Payment. The Committee shall determine the methods by which the exercise price of an Option may be paid, the form of payment, and the methods by which Shares shall be delivered or deemed to be delivered to Participants. As determined by the Committee at or after the Grant Date, payment of the exercise price of an Option may be made, in whole or in part, in the form of (i) cash or cash equivalents, (ii) delivery (by either actual delivery or attestation) of previously-acquired Shares based on the Fair Market Value of the Shares on the date the Option is exercised, (iii) withholding of Shares from the Option based on the Fair Market Value of the Shares on the date the Option is exercised, (iv) broker-assisted market sales, or (iv) any other "cashless exercise" arrangement.

(d) Exercise Term. Except for Nonstatutory Options granted to Participants outside the United States, no Option granted under the Plan shall be exercisable for more than ten years from the Grant Date. Notwithstanding any other provision of the Plan to the contrary, if the Participant's Continuous Service is terminated by the Company or any Affiliate for Cause or if, following the Participant's termination of Continuous Service and during any period in which the Option otherwise would remain exercisable, the Participant engages in any act that would constitute Cause, then the Option shall terminate in its entirety and cease to be exercisable immediately upon such termination of Continuous Service or act, as applicable.

(e) No Deferral Feature. No Option shall provide for any feature for the deferral of compensation other than the deferral of recognition of income until the exercise or disposition of the Option.

(f) No Dividend Equivalents. No Option shall provide for Dividend Equivalents.

7.2 INCENTIVE STOCK OPTIONS. The terms of any Incentive Stock Options granted under the Plan must comply with the requirements of Section 422 of the Code. Without limiting the foregoing, any Incentive Stock Option granted to a Participant who at the Grant Date owns more than 10% of the voting power of all classes of shares of the Company must have an exercise price per Share of not less than 110% of the Fair Market Value per Share on the Grant Date and an Option term of not more than five years. If all of the requirements of Section 422 of the Code (including the above) are not met, the Option shall automatically become a Nonstatutory Stock Option.

ARTICLE 8
STOCK APPRECIATION RIGHTS

8.1 GRANT OF STOCK APPRECIATION RIGHTS. The Committee is authorized to grant Stock Appreciation Rights to Participants on the following terms and conditions:

(a) Right to Payment. Upon the exercise of a SAR, the Participant has the right to receive, for each Share with respect to which the SAR is being exercised, the excess, if any, of:

(1) The Fair Market Value of one Share on the date of exercise; over

(2) The base price of the SAR as determined by the Committee and set forth in the Award Certificate, which for any SAR (other than a SAR issued as a substitute Award pursuant to Section 13.9) shall not be less than the Fair Market Value of one Share on the Grant Date.

(b) Time and Conditions of Exercise. The Committee shall determine the time or times at which a SAR may be exercised in whole or in part. No SAR shall be exercisable for more than ten years from the Grant Date.

(c) No Deferral Feature. No SAR shall provide for any feature for the deferral of compensation other than the deferral of recognition of income until the exercise or disposition of the SAR.

(d) No Dividend Equivalents. No SAR shall provide for Dividend Equivalents.

(e) Other Terms. All SARs shall be evidenced by an Award Certificate. Subject to the limitations of this Article 8, the terms, methods of exercise, methods of settlement, form of consideration payable in settlement (e.g., cash, Shares or other property), and any other terms and conditions of the SAR shall be determined by the Committee at the time of the grant and shall be reflected in the Award Certificate.

ARTICLE 9
RESTRICTED STOCK AND STOCK UNITS

9.1 GRANT OF RESTRICTED STOCK AND STOCK UNITS. The Committee is authorized to make Awards of Restricted Stock, Restricted Stock Units or Deferred Stock Units to Participants in such amounts and subject to such terms and conditions as may be selected by the Committee. An Award of Restricted Stock, Restricted Stock Units or Deferred Stock Units shall be evidenced by an Award Certificate setting forth the terms, conditions, and restrictions applicable to the Award.

9.2 ISSUANCE AND RESTRICTIONS. Restricted Stock, Restricted Stock Units or Deferred Stock Units shall be subject to such restrictions on transferability and other restrictions as the Committee may impose (including, for example, limitations on the right to vote Restricted Stock or the right to receive dividends on the Restricted Stock). These restrictions may lapse separately or in combination at such times, under such circumstances, in such installments, upon the satisfaction of performance goals or otherwise, as the Committee determines, at the time of the grant of the Award or thereafter. Except as otherwise provided in an Award Certificate or any special Plan document governing an Award, a Participant shall have none of the rights of a stockholder with respect to Restricted Stock Units or Deferred Stock Units until such time as Shares of Stock are paid in settlement of such Awards.

9.3 DIVIDENDS ON RESTRICTED STOCK. In the case of Restricted Stock, the Committee may provide that ordinary cash dividends declared on the Shares before they are vested (i) will be forfeited; (ii) will be deemed to have been reinvested in additional Shares or otherwise reinvested (subject to Share availability under Section 5.1 hereof and subject to the same vesting provisions as provided for the host Award); (iii) will be credited by the Company to an account for the Participant and accumulated without interest until the date upon which the host Award becomes vested, and any dividends accrued with respect to forfeited Restricted Stock will be reconveyed to the Company without further consideration or any act or action by the Participant; or (iv) will be

paid or distributed to the Participant as accrued (in which case, such dividends must be paid or distributed no later than the 15th day of the 3rd month following the later of (A) the calendar year in which the corresponding dividends were paid to stockholders, or (B) the first calendar year in which the Participant's right to such dividends is no longer subject to a substantial risk of forfeiture).

9.4 FORFEITURE. Subject to the terms of the Award Certificate and except as otherwise determined by the Committee at the time of the grant of the Award or thereafter, upon termination of Continuous Service during the applicable restriction period or upon failure to satisfy a performance goal during the applicable restriction period, Restricted Stock or Restricted Stock Units that are at that time subject to restrictions shall be forfeited.

9.5 DELIVERY OF RESTRICTED STOCK. Shares of Restricted Stock shall be delivered to the Participant at the Grant Date either by book-entry registration or by delivering to the Participant, or a custodian or escrow agent (including, without limitation, the Company or one or more of its employees) designated by the Committee, a stock certificate or certificates registered in the name of the Participant. If physical certificates representing shares of Restricted Stock are registered in the name of the Participant, such certificates must bear an appropriate legend referring to the terms, conditions, and restrictions applicable to such Restricted Stock.

ARTICLE 10
PERFORMANCE AWARDS

10.1 GRANT OF PERFORMANCE AWARDS. The Committee is authorized to grant any Award under this Plan, including cash-based Awards, with performance-based vesting criteria, on such terms and conditions as may be selected by the Committee. Any such Awards with performance-based vesting criteria are referred to herein as Performance Awards. The Committee shall have the complete discretion to determine the number of Performance Awards granted to each Participant and to designate the provisions of such Performance Awards as provided in Section 4.3. All Performance Awards shall be evidenced by an Award Certificate or a written program established by the Committee, pursuant to which Performance Awards are awarded under the Plan under uniform terms, conditions and restrictions set forth in such written program.

ARTICLE 11
DIVIDEND EQUIVALENTS

11.1 GRANT OF DIVIDEND EQUIVALENTS. The Committee is authorized to grant Dividend Equivalents with respect to Full-Value Awards granted hereunder. Dividend Equivalents shall entitle the Participant to receive payments equal to ordinary cash dividends or distributions with respect to all or a portion of the number of Shares subject to a Full-Value Award, as determined by the Committee. The Committee may provide that Dividend Equivalents (i) will be deemed to have been reinvested in additional Shares or otherwise reinvested, which shall be subject to the same vesting provisions as provided for the host Award; (ii) will be credited by the Company to an account for the Participant and accumulated without interest until the date upon which the host Award becomes vested, and any Dividend Equivalents accrued with respect to forfeited Awards will be reconveyed to the Company without further consideration or any act or action by the Participant; or (iii) will be paid or distributed to the Participant as accrued (in which case, such Dividend Equivalents must be paid or distributed no later than the 15th day of the 3rd month following the later of (A) the calendar year in which the corresponding dividends were paid to stockholders, or (B) the first calendar year in which the Participant's right to such Dividends Equivalents is no longer subject to a substantial risk of forfeiture).

ARTICLE 12
STOCK OR OTHER STOCK-BASED AWARDS

12.1 GRANT OF STOCK OR OTHER STOCK-BASED AWARDS. The Committee is authorized, subject to limitations under applicable law, to grant to Participants such other Awards that are payable in, valued in whole or in part by reference to, or otherwise based on or related to Shares, as deemed by the Committee to be consistent with the purposes of the Plan, including without limitation, convertible or exchangeable debt securities, other rights convertible or exchangeable into Shares, including limited partnership interests in a limited partnership entity of which the Company is general partner that may be exchanged or redeemed for Shares on a one-for-one basis, or any profits interest in such limited partnership entity that may be exchanged or converted into such limited partnership interests, and Awards valued by reference to book value of Shares or the value of securities of or the performance of specified Parents or Subsidiaries. The Committee shall determine the terms and conditions of such Awards.

ARTICLE 13
PROVISIONS APPLICABLE TO AWARDS

13.1 AWARD CERTIFICATES. Each Award shall be evidenced by an Award Certificate. Each Award Certificate shall include such provisions, not inconsistent with the Plan, as may be specified by the Committee.

13.2 FORM OF PAYMENT FOR AWARDS. At the discretion of the Committee, payment of Awards may be made in cash, Stock, a combination of cash and Stock, or any other form of property as the Committee shall determine. In addition, payment of Awards may include such terms, conditions, restrictions and/or limitations, if any, as the Committee deems appropriate, including, in the case of Awards paid in the form of Stock, restrictions on transfer and forfeiture provisions.

13.3 LIMITS ON TRANSFER.

(a) Each Award and each right under any Award shall be exercisable only by the holder thereof during such holder's lifetime, or, if permissible under applicable law, by such holder's guardian or legal representative or by a transferee receiving such Award pursuant to a domestic relations order (a "QDRO") as defined in Section 414(p)(1)(B) of the Code or Title I of the Employee Retirement Income Security Act of 1974, as amended, or the rules thereunder.

(b) No Award (prior to the time, if applicable, Shares are delivered in respect of such Award), and no right under any Award, may be assigned, alienated, pledged, attached, sold or otherwise transferred or encumbered by a grantee otherwise than by will or by the laws of descent and distribution (or in the case of Restricted Stock, to the Company) or pursuant to a QDRO, and any such purported assignment, alienation, pledge, attachment, sale, transfer or encumbrance shall be void and unenforceable against the Company or any Affiliate; provided that the designation of a beneficiary to receive benefits in the event of the grantee's death shall not constitute an assignment, alienation, pledge, attachment, sale, transfer or encumbrance.

(c) Notwithstanding subsections (a) and (b) above, to the extent provided in the Award Certificate, Awards (other than Incentive Stock Options and corresponding Awards), may be transferred, without consideration, to a Permitted Transferee. For this purpose, a "Permitted

Transferee" in respect of any grantee means any member of the Immediate Family of such grantee, any trust of which all of the primary beneficiaries are such grantee or members of his or her Immediate Family, or any partnership (including limited liability companies and similar entities) of which all of the partners or members are such grantee or members of his or her Immediate Family; and the "Immediate Family" of a grantee means the grantee's spouse, any person sharing the grantee's household (other than a tenant or employee), children, stepchildren, grandchildren, parents, stepparents, siblings, grandparents, nieces and nephews. Such Award may be exercised by such transferee in accordance with the terms of the Award Certificate.

(d) Nothing herein shall be construed as requiring the Company or any Affiliate to honor a QDRO except to the extent required under applicable law.

13.4 BENEFICIARIES. Notwithstanding Section 13.3, a Participant may, in the manner determined by the Committee, designate a beneficiary to exercise the rights of the Participant and to receive any distribution with respect to any Award upon the Participant's death. A Permitted Transferee, beneficiary, legal guardian, legal representative, or other person claiming any rights under the Plan is subject to all terms and conditions of the Plan and any Award Certificate applicable to the Participant, except to the extent the Plan and Award Certificate otherwise provide, and to any additional restrictions deemed necessary or appropriate by the Committee. If no beneficiary has been designated or survives the Participant, any payment due to the Participant shall be made to the Participant's estate. Subject to the foregoing, a beneficiary designation may be changed or revoked by a Participant, in the manner provided by the Company, at any time provided the change or revocation is filed with the Committee.

13.5 STOCK TRADING RESTRICTIONS. All Stock issuable under the Plan is subject to any stop-transfer orders and other restrictions as the Committee deems necessary or advisable to comply with federal or state securities laws, rules and regulations and the rules of any national securities exchange or automated quotation system on which the Stock is listed, quoted, or traded. The Committee may place legends on any Stock certificate or issue instructions to the transfer agent to reference restrictions applicable to the Stock.

13.6 EFFECT OF A CHANGE IN CONTROL. Except as otherwise provided in the Award Certificate or any special Plan document or separate agreement with a Participant governing an Award, in the event that the Surviving Corporation or other successor corporation in a Change in Control does not assume, substitute for or otherwise equitably convert outstanding Awards in a manner approved by the Committee or the Board, then, upon the occurrence of such Change in Control, (i) all outstanding Options or SARs shall become fully vested and exercisable, (ii) all time-based vesting restrictions on other outstanding Awards shall lapse; and (iii) the target payout opportunities attainable under outstanding performance-based Awards shall be deemed to have been fully earned as of the effective date of the Change in Control based upon (A) an assumed achievement of all relevant performance goals at the "target" level if the Change in Control occurs during the first half of the applicable performance period, or (B) the actual level of achievement of all relevant performance goals against target, if the Change in Control occurs during the second half of the applicable performance period, and, in either such case, there shall be a payout to Participants within thirty (30) days following the Change in Control. In addition, with respect to outstanding Options or SARs that are not assumed, substituted for or otherwise equitably converted in the event of a Change in Control, then the Committee will notify the Participant in writing or electronically that the Option or SAR will be exercisable for a period of time determined by the Committee in its sole discretion, and the Option or SAR will terminate upon the expiration of such period. To the extent that this Section 13.6 causes Incentive Stock Options to exceed the dollar limitation set forth in Code Section 422(d), the excess Options shall be deemed to be Nonstatutory Stock Options.

13.7 DISCRETION TO ACCELERATE AWARDS. Regardless of whether an event has occurred as described in Section 13.6 above, the Committee may in its sole discretion determine that, at any time, all or a portion of such Participant's Options or SARs shall become fully or partially exercisable, that all or a part of the restrictions on all or a portion of the Participant's outstanding Awards shall lapse, and/or that any performance-based criteria with respect to any Awards held by that Participant shall be deemed to be wholly or partially satisfied, in each case, as of such date as the Committee may, in its sole discretion, declare. The Committee may discriminate among Participants and among Awards granted to a Participant in exercising its discretion pursuant to this Section 13.7.

13.8 FORFEITURE EVENTS. Awards under the Plan shall be subject to any compensation recoupment policy that the Committee may adopt from time to time that is applicable by its terms to the Participant. In addition, the Committee may specify in an Award Certificate that the Participant's rights, payments and benefits with respect to an Award shall be subject to reduction, cancellation, forfeiture or recoupment upon the occurrence of certain specified events, in addition to any otherwise applicable vesting or performance conditions of an Award.

13.9 SUBSTITUTE AWARDS. The Committee may grant Awards under the Plan in substitution for stock and stock-based awards held by employees of another entity who become employees of the Company or an Affiliate as a result of a merger or consolidation of the former employing entity with the Company or an Affiliate or the acquisition by the Company or an Affiliate of property or stock of the former employing corporation. The Committee may direct that the substitute awards be granted on such terms and conditions as the Committee considers appropriate in the circumstances.

ARTICLE 14
CHANGES IN CAPITAL STRUCTURE

14.1 MANDATORY ADJUSTMENTS. In the event of a nonreciprocal transaction between the Company and its stockholders that causes the per-share value of the Stock to change (including, without limitation, any stock dividend, stock split, spin-off, rights offering, or large nonrecurring cash dividend), the authorization limits under Section 5.1 shall be adjusted proportionately, and the Committee shall make such adjustments to the Plan and Awards as it deems necessary, in its sole discretion, to prevent dilution or enlargement of rights immediately resulting from such transaction. Action by the Committee may include: (i) adjustment of the number and kind of shares that may be delivered under the Plan; (ii) adjustment of the number and kind of shares subject to outstanding Awards; (iii) adjustment of the exercise price of outstanding Awards or the measure to be used to determine the amount of the benefit payable on an Award; and (iv) any other adjustments that the Committee determines to be equitable. Notwithstanding the foregoing, the Committee shall not make any adjustments to outstanding Options or SARs that would constitute a modification or substitution of the stock right under Treas. Reg. Sections 1.409A-1(b)(5)(v) that would be treated as the grant of a new stock right or change in the form of payment for purposes of Code Section 409A. Without limiting the foregoing, in the event of a subdivision of the outstanding Stock (stock-split), a declaration of a dividend payable in Shares, or a combination or consolidation of the outstanding Stock into a lesser number of Shares, the authorization limits under Section 5.1 shall automatically be adjusted proportionately, and the Shares then subject to each Award shall automatically, without the necessity for any additional action by the Committee, be adjusted proportionately without any change in the aggregate purchase price therefor.

14.2 DISCRETIONARY ADJUSTMENTS. Upon the occurrence or in anticipation of any corporate event or transaction involving the Company (including, without limitation, any merger, reorganization, recapitalization, combination or exchange of shares, or any transaction described in Section 14.1), the Committee may, in its sole discretion, provide (i) that Awards will be settled in cash rather than Stock, (ii) that Awards will become immediately vested and non-forfeitable and exercisable (in whole or in part) and will expire after a designated period of time to the extent not then exercised, (iii) that Awards will be assumed by another party to a transaction or otherwise be equitably converted or substituted in connection with such transaction, (iv) that outstanding Awards may be settled by payment in cash or cash equivalents equal to the excess of the Fair Market Value of the underlying Stock, as of a specified date associated with the transaction, over the exercise or base price of the Award, (v) that performance targets and performance periods for Performance Awards will be modified, or (vi) any combination of the foregoing. The Committee's determination need not be uniform and may be different for different Participants whether or not such Participants are similarly situated.

14.3 GENERAL. Any discretionary adjustments made pursuant to this Article 14 shall be subject to the provisions of Section 15.2. To the extent that any adjustments made pursuant to this Article 14 cause Incentive Stock Options to cease to qualify as Incentive Stock Options, such Options shall be deemed to be Nonstatutory Stock Options.

ARTICLE 15
AMENDMENT, MODIFICATION AND TERMINATION

15.1 AMENDMENT, MODIFICATION AND TERMINATION. The Board or the Committee may, at any time and from time to time, amend, modify or terminate the Plan without stockholder approval; provided, however, that if an amendment to the Plan would, in the reasonable opinion of the Board or the Committee, constitute a material change requiring stockholder approval under applicable laws, policies or regulations or the applicable listing or other requirements of an Exchange, then such amendment shall be subject to stockholder approval; and provided, further, that the Board or Committee may condition any other amendment or modification on the approval of stockholders of the Company for any reason, including by reason of such approval being necessary or deemed advisable (i) to comply with the listing or other requirements of an Exchange, or (ii) to satisfy any other tax, securities or other applicable laws, policies or regulations.

15.2 AWARDS PREVIOUSLY GRANTED. At any time and from time to time, the Committee may amend, modify or terminate any outstanding Award without approval of the Participant; provided, however:

(a) Subject to the terms of the applicable Award Certificate, such amendment, modification or termination shall not, without the Participant's consent, reduce or diminish the value of such Award determined as if the Award had been exercised, vested, cashed in or otherwise settled on the date of such amendment or termination (with the per-share value of an Option or SAR for this purpose being calculated as the excess, if any, of the Fair Market Value as of the date of such amendment or termination over the exercise or base price of such Award);

(b) No termination, amendment, or modification of the Plan shall adversely affect in any material respect any Award previously granted under the Plan, without the written consent of the Participant affected thereby. An outstanding Award shall not be deemed to be "adversely affected" by a Plan amendment if such amendment would not reduce or diminish the value of such Award determined as if the Award had been exercised, vested, cashed in or otherwise settled on the date of such amendment (with the per-share value of an Option or SAR for this purpose being calculated as the excess, if any, of the Fair Market Value as of the date of such amendment over the exercise or base price of such Award).

15.3 COMPLIANCE AMENDMENTS. Notwithstanding anything in the Plan or in any Award Certificate to the contrary, the Board may amend the Plan or an Award Certificate, to take effect retroactively or otherwise, as deemed necessary or advisable for the purpose of conforming the Plan or Award Certificate to any present or future law relating to plans of this or similar nature (including, but not limited to, Section 409A of the Code), and to the administrative regulations and rulings promulgated thereunder. By accepting an Award under this Plan, a Participant agrees to any amendment made pursuant to this Section 15.3 to any Award granted under the Plan without further consideration or action.

ARTICLE 16
GENERAL PROVISIONS

16.1 RIGHTS OF PARTICIPANTS.

(a) No Participant or any Eligible Participant shall have any claim to be granted any Award under the Plan. Neither the Company, its Affiliates nor the Committee is obligated to treat Participants or Eligible Participants uniformly, and determinations made under the Plan may be made by the Committee selectively among Eligible Participants who receive, or are eligible to receive, Awards (whether or not such Eligible Participants are similarly situated).

(b) Nothing in the Plan, any Award Certificate or any other document or statement made with respect to the Plan, shall interfere with or limit in any way the right of the Company or any Affiliate to terminate any Participant's employment or status as an officer, or any Participant's service as a director or consultant, at any time, nor confer upon any Participant any right to continue as an employee, officer, director or consultant of the Company or any Affiliate, whether for the duration of a Participant's Award or otherwise.

(c) Neither an Award nor any benefits arising under this Plan shall constitute an employment contract with the Company or any Affiliate and, accordingly, subject to Article 15, this Plan and the benefits hereunder may be terminated at any time in the sole and exclusive discretion of the Committee without giving rise to any liability on the part of the Company or any of its Affiliates.

(d) No Award gives a Participant any of the rights of a stockholder of the Company unless and until Shares are in fact issued to such person in connection with such Award.

16.2 WITHHOLDING. The Company or any Affiliate shall have the authority and the right to deduct or withhold, or require a Participant to remit to the Company or such Affiliate, an amount sufficient to satisfy federal, state, and local taxes (including the Participant's FICA obligation) required by law to be withheld with respect to any exercise, lapse of restriction or other taxable event arising as a result of the Plan. The obligations of the Company under the Plan will be conditioned on such payment or arrangements and the Company or such Affiliate will, to the extent permitted by law, have the right to deduct any such taxes from any payment of any kind otherwise due to the Participant. Unless otherwise determined by the Committee at the time the

Award is granted or thereafter, any such withholding requirement may be satisfied, in whole or in part, by withholding from the Award Shares having a Fair Market Value on the date of withholding equal to the amount required to be withheld in accordance with applicable tax requirements (up to the maximum individual statutory rate in the applicable jurisdiction as may be permitted under then-current accounting principles to qualify for equity classification), in accordance with such procedures as the Committee establishes. All such elections shall be subject to any restrictions or limitations that the Committee, in its sole discretion, deems appropriate.

16.3 SPECIAL PROVISIONS RELATED TO SECTION 409A OF THE CODE.

(a) General. It is intended that the payments and benefits provided under the Plan and any Award shall either be exempt from the application of, or comply with, the requirements of Section 409A of the Code. The Plan and all Award Certificates shall be construed in a manner that effects such intent. Nevertheless, the tax treatment of the benefits provided under the Plan or any Award is not warranted or guaranteed. Neither the Company, its Affiliates nor their respective directors, officers, employees or advisers (other than in his or her capacity as a Participant) shall be held liable for any taxes, interest, penalties or other monetary amounts owed by any Participant or other taxpayer as a result of the Plan or any Award.

(b) Definitional Restrictions. Notwithstanding anything in the Plan or in any Award Certificate to the contrary, to the extent that any amount or benefit that would constitute non-exempt "deferred compensation" for purposes of Section 409A of the Code ("Non-Exempt Deferred Compensation") would otherwise be payable or distributable, or a different form of payment (e.g., lump sum or installment) of such Non-Exempt Deferred Compensation would be effected, under the Plan or any Award Certificate by reason of the occurrence of a Change in Control, or the Participant's Disability or separation from service, such Non-Exempt Deferred Compensation will not be payable or distributable to the Participant, and/or such different form of payment will not be effected, by reason of such circumstance unless the circumstances giving rise to such Change in Control, Disability or separation from service meet any description or definition of "change in control event", "disability" or "separation from service", as the case may be, in Section 409A of the Code and applicable regulations (without giving effect to any elective provisions that may be available under such definition). This provision does not prohibit the vesting of any Award upon a Change in Control, Disability or separation from service, however defined. If this provision prevents the payment or distribution of any amount or benefit, or the application of a different form of payment of any amount or benefit, such payment or distribution shall be made at the time and in the form that would have applied absent the Change in Control, Disability or separation from service as applicable.

(c) Allocation among Possible Exemptions. If any one or more Awards granted under the Plan to a Participant could qualify for any separation pay exemption described in Treas. Reg. Section 1.409A-1(b)(9), but such Awards in the aggregate exceed the dollar limit permitted for the separation pay exemptions, the Company shall determine which Awards or portions thereof will be subject to such exemptions.

(d) Installment Payments. If, pursuant to an Award, a Participant is entitled to a series of installment payments, such Participant's right to the series of installment payments shall be treated as a right to a series of separate payments and not to a single payment. For purposes of the preceding sentence, the term "series of installment payments" has the meaning provided in Treas. Reg. Section 1.409A-2(b)(2)(iii) (or any successor thereto).

(e) Timing of Release of Claims. Whenever an Award conditions a payment or benefit on the Participant's execution and non-revocation of a release of claims, such release must be executed and all revocation periods shall have expired within sixty (60) days after the date of termination of the Participant's employment; failing which such payment or benefit shall be forfeited. If such payment or benefit is exempt from Section 409A of the Code, the Company may elect to make or commence payment at any time during such 60-day period. If such payment or benefit constitutes Non-Exempt Deferred Compensation, then (i) if such 60-day period begins and ends in a single calendar year, the Company may make or commence payment at any time during such period at its discretion, and (ii) if such 60-day period begins in one calendar year and ends in the next calendar year, the payment shall be made or commence during the second such calendar year (or any later date specified for such payment under the applicable Award), even if such signing and non-revocation of the release occur during the first such calendar year included within such 60-day period. In other words, a Participant is not permitted to influence the calendar year of payment based on the timing of signing the release.

(f) Permitted Acceleration. The Company shall have the sole authority to make any accelerated distribution permissible under Treas. Reg. Section 1.409A-3(j)(4) to Participants of deferred amounts, provided that such distribution(s) meets the requirements of Treas. Reg. Section 1.409A-3(j)(4).

16.4 UNFUNDED STATUS OF AWARDS. The Plan is intended to be an "unfunded" plan for incentive and deferred compensation. With respect to any payments not yet made to a Participant pursuant to an Award, nothing contained in the Plan or any Award Certificate shall give the Participant any rights that are greater than those of a general creditor of the Company or any Affiliate. In its sole discretion, the Committee may authorize the creation of grantor trusts or other arrangements to meet the obligations created under the Plan to deliver Shares or payments in lieu of Shares or with respect to Awards. This Plan is not intended to be subject to ERISA.

16.5 RELATIONSHIP TO OTHER BENEFITS. No payment under the Plan shall be taken into account in determining any benefits under any pension, retirement, savings, profit sharing, group insurance, welfare or benefit plan of the Company or any Affiliate unless provided otherwise in such other plan. Nothing contained in the Plan will prevent the Company from adopting other or additional compensation arrangements, subject to stockholder approval if such approval is required; and such arrangements may be either generally applicable or applicable only in specific cases.

16.6 EXPENSES. The expenses of administering the Plan shall be borne by the Company and its Affiliates.

16.7 TITLES AND HEADINGS. The titles and headings of the Sections in the Plan are for convenience of reference only, and in the event of any conflict, the text of the Plan, rather than such titles or headings, shall control.

16.8 GENDER AND NUMBER. Except where otherwise indicated by the context, any masculine term used herein also shall include the feminine; the plural shall include the singular and the singular shall include the plural.

16.9 FRACTIONAL SHARES. No fractional Shares shall be issued and the Committee shall determine, in its discretion, whether cash shall be given in lieu of fractional Shares or whether such fractional Shares shall be eliminated by rounding up or down.

16.10 GOVERNMENT AND OTHER REGULATIONS. Notwithstanding any other provision of the Plan, if at any time the Committee shall determine that the registration, listing or qualification of the Shares covered by an Award upon any Exchange or under any foreign, federal, state or local law or practice, or the consent or approval of any governmental regulatory body, is necessary or desirable as a condition of, or in connection with, the granting of such Award or the purchase or receipt of Shares thereunder, no Shares may be purchased, delivered or received pursuant to such Award unless and until such registration, listing, qualification, consent or approval shall have been effected or obtained free of any condition not acceptable to the Committee. Any Participant receiving or purchasing Shares pursuant to an Award shall make such representations and agreements and furnish such information as the Committee may request to assure compliance with the foregoing or any other applicable legal requirements. The Company shall not be required to issue or deliver any certificate or certificates for Shares under the Plan prior to the Committee's determination that all related requirements have been fulfilled. The Company shall in no event be obligated to register any securities pursuant to the 1933 Act or applicable state or foreign law or to take any other action in order to cause the issuance and delivery of such certificates to comply with any such law, regulation or requirement.

16.11 GOVERNING LAW. To the extent not governed by federal law, the Plan and all Award Certificates shall be construed in accordance with and governed by the laws of the State of California.

16.12 SEVERABILITY. In the event that any provision of this Plan is found to be invalid or otherwise unenforceable under any applicable law, such invalidity or unenforceability will not be construed as rendering any other provisions contained herein as invalid or unenforceable, and all such other provisions will be given full force and effect to the same extent as though the invalid or unenforceable provision was not contained herein.

16.13 NO LIMITATIONS ON RIGHTS OF COMPANY. The grant of any Award shall not in any way affect the right or power of the Company to make adjustments, reclassification or changes in its capital or business structure or to merge, consolidate, dissolve, liquidate, sell or transfer all or any part of its business or assets. The Plan shall not restrict the authority of the Company, for proper corporate purposes, to draft or assume awards, other than under the Plan, to or with respect to any person. If the Committee so directs, the Company may issue or transfer Shares to an Affiliate, for such lawful consideration as the Committee may specify, upon the condition or understanding that the Affiliate will transfer such Shares to a Participant in accordance with the terms of an Award granted to such Participant and specified by the Committee pursuant to the provisions of the Plan.

INCENTIVE STOCK OPTION AWARD CERTIFICATE

Non-transferable
GRANT TO

_____
("Optionee")

of the right to purchase from IGM Biosciences, Inc. (the "Company")

_____ shares of its common stock, $.01 par value (the "Shares"),

at the price of $_____per Share

pursuant to and subject to the provisions of the IGM Biosciences, Inc. 2018 Omnibus Incentive Plan (the "Plan") and to the terms and conditions set forth on the following pages (the "Terms and Conditions"). By accepting the Option, Optionee shall be deemed to have agreed to the Terms and Conditions set forth in this Award Certificate and the Plan. Capitalized terms used herein and not otherwise defined shall have the meanings assigned to such terms in the Plan.

The Option shall vest and become exercisable in accordance with the following schedule:

[Twenty-five percent (25%) of the Shares subject to the Option shall vest (and become exercisable) on [insert the one (1) year anniversary of the vesting start date, normally hire date for new hires], provided that Optionee remains in Continuous Service on such date; and one forty-eighth (1/48th) of the Shares subject to the Option shall vest (and become exercisable) each month thereafter on the [insert same day of the month or if after the 28th day, the last day of the month], provided that Optionee remains in Continuous Service on such date.]

Optionee acknowledges receipt of a copy of the Plan and hereby accepts this Option subject to all of the terms and conditions hereof and in the Plan.

Print Optionee address below:

_____
Optionee Signature

IGM Biosciences, Inc., acting by and through its duly authorized officers, has caused this Award Certificate to be duly executed.

IGM BIOSCIENCES, INC.

_____ Grant Date:
By:
Its:

TERMS AND CONDITIONS

1. Vesting of Option. The Option shall vest (and become exercisable) in accordance with the schedule shown on the cover page of this Award Certificate, subject to Optionee's Continuous Service from the date hereof through each of the applicable dates as set forth thereon. In the event of the termination of Optionee's Continuous Service for any reason, the unvested portion of the Option will expire immediately. In the event that the Surviving Corporation or other successor corporation in a Change in Control does not assume, substitute for or otherwise equitably convert the Option in a manner approved by the Committee or the Board, then, upon the occurrence of such Change in Control, the Option shall become fully vested and exercisable.

2. Term of Option and Limitations on Right to Exercise. Unless an earlier lapse is provided for herein or in the Plan, the term of the Option will be for a period of ten years, expiring at 5:00 p.m., Eastern Time, on the tenth anniversary of the Grant Date (the "Expiration Date"). To the extent not previously exercised, the Option will lapse prior to the Expiration Date upon the earliest to occur of the following circumstances:

(a) three (3) months after the termination of Optionee's Continuous Service for any reason other than (i) by reason of Optionee's death or Disability, or (ii) by the Company for Cause;

(b) twelve (12) months after the date of the termination of Optionee's Continuous Service by reason of his or her Disability;

(c) twelve (12) months after Optionee's death, if (i) Optionee dies during his or her Continuous Service and before the Option otherwise expires, or (ii) Optionee dies during the three-month period described in subsection (a) above and before the Option otherwise expires or (iii) Optionee dies during the twelve-month period described in subsection (b) above and before the Option otherwise expires (upon Optionee's death, the Option may be exercised by Optionee's estate or other beneficiary designated pursuant to the Plan); or

(d) immediately upon the termination of Optionee's Continuous Service by the Company for Cause.

If Optionee or his or her beneficiary exercises an Option after termination of service, the Option may be exercised only with respect to the Shares that were otherwise vested on Optionee's termination of Continuous Service. For the avoidance of doubt, any portion of the Option that is unvested as of the date of Optionee's termination of Continuous Service shall expire as of the date of Optionee's termination of Continuous Service.

In addition, if this Option is not assumed, substituted for or otherwise equitably converted in the event of a Change in Control, then the Committee will notify the Optionee in writing or electronically that the Option will be exercisable for a period of time determined by the Committee in its sole discretion, and the Option will terminate upon the expiration of such period.

3. Exercise of Option. The Option shall be exercised by written notice directed to the Secretary of the Company or his or her designee at the address and in the form attached hereto as Exhibit A or as otherwise specified by the Company from time to time (which may include, among other terms, a "lockup" or agreement restricting transfers or dispositions of Shares in the period following a registered public offering by the Company). The Company reserves the right to change the means of exercising the Option (including exercise through an on-line system) or the Plan administration at any time. Optionee must make payment to the Company in full for the Shares subject to such exercise. If the person exercising an

Option is not Optionee, such person shall also provide appropriate proof of his or her right to exercise the Option. Payment for such Shares shall be (i) in cash, (ii) if approved by the Company, by delivery (actual or by attestation) of Shares previously acquired by the purchaser, (iii) at the election of the Company, by withholding of Shares from the Option, or (iv) any combination thereof, for the number of Shares being exercised. Shares surrendered or withheld for this purpose shall be valued at their Fair Market Value on the date of exercise.

4. Limitation of Rights. The Option does not confer to Optionee or Optionee's beneficiary any rights of a stockholder of the Company unless and until Shares are in fact issued to such person in connection with the exercise of the Option. Nothing in this Award Certificate shall interfere with or limit in any way the right of the Company or any Affiliate to terminate Optionee's service at any time, nor confer upon Optionee any right to continue in the service of the Company or any Affiliate.

5. Restrictions on Transfer and Pledge. No right or interest of Optionee in the Option may be assigned, alienated, pledged, attached, sold or otherwise transferred or encumbered by Optionee other than by will or the laws of descent and distribution, or pursuant to a domestic relations order as defined in Section 414(p)(1)(B) of the Code or Title I of ERISA, or the rules thereunder. Notwithstanding the foregoing, the Option may be transferred, without consideration, to a Permitted Transferee (as defined in Section 13.3 of the Plan). The Option may be exercised during the lifetime of Optionee only by Optionee or any Permitted Transferee. Optionee acknowledges that any Shares issued upon exercise of the Option shall be subject to a right of first refusal as set forth in the Bylaws of the Company.

6. Restrictions on Issuance of Shares. If at any time the Board shall determine in its discretion, that registration, listing or qualification of the Shares covered by the Option upon any securities exchange or under any foreign, federal, or local law or practice, or the consent or approval of any governmental regulatory body, is necessary or desirable as a condition to the exercise of the Option, the Option may not be exercised in whole or in part unless and until such registration, listing, qualification, consent or approval shall have been effected or obtained free of any conditions not acceptable to the Board.

7. Notification of Disposition; Withholding. Optionee agrees to notify the Company in writing within thirty (30) days of any disposition of Shares acquired by Optionee pursuant to the exercise of the Option, if such disposition occurs within two years of the Grant Date, or one year of the date of exercise, of the Option. The Company or any employer Affiliate has the authority and the right to deduct or withhold, or require Optionee to remit to the employer, an amount sufficient to satisfy federal, state, foreign, and local taxes (including Optionee's FICA obligation) required by law to be withheld with respect to any "disqualifying disposition" of Shares or other taxable event arising as a result of the Option. At the election of the Company, the withholding requirement may be satisfied, in whole or in part, by withholding, from the Options, Shares having a Fair Market Value on the date of withholding equal to the amount required to be withheld for tax purposes under applicable law.

8. Interpretation. It is the intent of the parties hereto that the Option qualifies for incentive stock option treatment pursuant to, and to the extent permitted by, Section 422 of the Code. All provisions hereof are intended to have, and shall be construed to have, such meanings as are set forth in applicable provisions of the Code and Treasury Regulations to allow the Option to so qualify. To the extent that any portion of the Option fails to qualify for incentive stock option treatment pursuant to Section 422 of the Code, such nonqualifying portion of the Option shall be a nonstatutory stock option, governed under Section 83 of the Code.

9. Plan Controls. The terms contained in the Plan are incorporated into and made a part of this Award Certificate and this Award Certificate shall be governed by and construed in accordance with the Plan. In the event of any actual or alleged conflict between the provisions of the Plan and the provisions of this Award Certificate, the provisions of the Plan shall be controlling and determinative.

10. Successors. This Award Certificate shall be binding upon any successor of the Company, in accordance with the terms of this Award Certificate and the Plan.

11. Severability. If any one or more of the provisions contained in this Award Certificate is invalid, illegal or unenforceable, the other provisions of this Award Certificate will be construed and enforced as if the invalid, illegal or unenforceable provision had never been included.

12. Notice. Notices hereunder must be delivered in writing, delivered personally or sent by registered or certified U.S. mail, return receipt requested, postage prepaid. Notices to the Company must be addressed to IGM Biosciences, Inc., 325 E. Middlefield Road Mountain View, CA 94043; Attn: Corporate Secretary, or any other address designated by the Company in a written notice to Optionee. Notices to Optionee will be directed to Optionee either electronically to Optionee's business email address then currently on file with the Company or at the home address of Optionee then currently on file with the Company, or at any other address given by Optionee in a written notice to the Company.

13. Clawback. The Option shall be subject to any compensation recoupment policy of the Company that is applicable by its terms to Optionee and to awards of this type.

EXHIBIT A

NOTICE OF EXERCISE OF OPTION TO PURCHASE COMMON STOCK

NOTICE OF EXERCISE OF OPTION TO PURCHASE
COMMON STOCK OF
IGM BIOSCIENCES, INC.

Name of Optionee: _____

Date: _____

IGM Biosciences, Inc.
325 E. Middlefield Road
Mountain View, CA 94043
Attn: Corporate Secretary

Re: Exercise of Option under the IGM Biosciences, Inc. 2018 Omnibus Incentive Plan (the "Plan")

I elect to purchase_____shares of common stock ("Stock") of IGM Biosciences, Inc. (the "Company") pursuant to my option granted under an Incentive Stock Option Award Certificate dated_____(the "Option"). The exercise price of the Option is $_____per share.

The purchase will take place on the Exercise Date, which will be as soon as practicable following the date on which this exercise notice and all other necessary forms and payments are received by the Company.

I acknowledge that the Exercise Date will not occur, and I am not entitled to receive any shares of Stock, until I have (i) paid the exercise price in full, and (ii) satisfied any tax withholding obligation.

I further acknowledge that as a condition to the exercise of the Option and the issuance of Stock pursuant to such exercise, I will be required to become a party to any Stockholders Agreement which may be executed by and among the Company and its stockholders in the future.

I understand that if I request, and the Company agrees, to satisfy the exercise price and/or tax withholding obligation relating to the Option by having the Company withhold shares of Stock from the Option, the number of shares withheld will be determined based upon the "Fair Market Value" of the Stock. As provided in the Plan, Fair Market Value is determined by the Compensation Committee using such method as it considers to be reasonable.

1. Payment of Exercise Price. I will pay the full exercise price in the form specified below (*check one*):

☐ Cash: by delivering a check to the Company for $_____, which is the full amount of the exercise price.

☐ Delivery of Shares: subject to the Company's agreement to do so, by delivering to the Company previously-acquired shares of Company Stock that have a Fair Market Value as of the Exercise Date equal to the full exercise price of the Option. (Such delivery may be made by attestation of my ownership or by actual delivery of one or more stock certificates duly endorsed for transfer.) If the number of shares of such Company Stock exceeds the number needed to pay the exercise price and any tax withholding (as indicated below), the Company will issue me a new stock certificate (or book-entry shares) for the excess.

☐ Withholding of Shares: subject to the Company's agreement to do so, by having the Company withhold shares of Company Stock from the Option having a Fair Market Value on the Exercise Date equal to the full exercise price of the Option.

2. Withholding Taxes. I will satisfy any required tax withholding obligations arising from the exercise of the Option in the form specified below (*check one*):

☐ Cash: by delivering a check to the Company for the required tax withholding amount (to be determined by the Company).

☐ Delivery of Shares: subject to the Company's agreement to do so, by delivering to the Company shares of Company Stock that have a Fair Market Value as of the Exercise Date equal to the required tax withholding amount. (Such delivery may be made by attestation of ownership or by actual delivery of one or more stock certificates duly endorsed for transfer.) If the number of shares of such Company Stock exceeds the number needed to pay the tax withholding amount and the exercise price (as indicated above), the Company will issue me a new stock certificate (or book-entry shares) for the excess.

☐ Withholding of Shares: subject to the Company's agreement to do so, by having the Company withhold shares of Company Stock from the Option having a Fair Market Value on the Exercise Date equal to the amount required to be withheld for tax purposes.

3. Covenants and Representations of Optionee. I hereby represent, warrant, covenant, and agree with the Company as follows as of the Exercise Date:

(a) I have received, read and understood a copy of the Plan and the Incentive Stock Option Award Certificate relating to my Option;

(b) The shares of Company Stock are being received for my own account without the participation of any other person, with the intent of holding the shares of Company Stock for investment and without a view to or the intent of participating, directly or indirectly, in a sale or distribution of the shares of Company Stock or any portion thereof;

(c) I am not acquiring the shares of Company Stock based on any representation, oral or written, by any person with respect to the future value of, or income from, the shares of Company Stock, but rather on an independent examination and judgment as to the prospects of the Company;

(d) I am familiar with the business and affairs of the Company, and realize that the receipt of the shares of Company Stock is a speculative investment and that any possible profit therefrom is uncertain;

(e) I have had the opportunity to ask questions of and receive answers from the Company and have received all information and data with respect to the Company that I have requested and that I have deemed relevant in connection with my receipt of the shares of Company Stock;

(f) I am able to bear the economic risk of the investment in shares of Company Stock, including the risk of a complete loss of my investment, and I acknowledge that I must continue to bear the economic risk of the investment in the shares of Company Stock received on exercise of the Option for an indefinite period;

(g) I understand and agree that the shares of Company Stock subject to the Option may be issued and sold to me without registration under any state or federal securities laws, and in that event (i) will be issued and sold in reliance on exemptions from registration under applicable state and federal laws and (ii) will be "restricted" under applicable state and federal securities laws and that, pursuant to those laws, the Company Stock cannot be resold unless registered under the Securities Act of 1933 (the "1933 Act") or in reliance on an exemption from registration.

(h) The Company will be under no obligation to register or qualify the shares of Company Stock issuable pursuant to the Option or to comply with any exemption available for sale of the shares of Company Stock by me without registration, and the Company is under no obligation to act in any manner so as to make Rule 144 promulgated under the 1933 Act available with respect to sale of the shares of Company Stock by me; and

(i) A legend indicating that the shares of Company Stock issued pursuant to the Option have not been registered under applicable securities laws and referring to any applicable restrictions on transferability and sale of the shares of Company Stock may be placed on any certificate or certificates delivered to me and any transfer agent of the Company may be instructed to require compliance therewith.

[*remainder of page intentionally blank*]

Upon receipt of a written request by the Company or by its underwriters in connection with a registration (as defined below), I shall not sell, sell short, grant an option to buy, or otherwise dispose of shares of the Company's Common Stock or other securities (except for any such shares included in the registration) for a period of one hundred and eighty (180) days following the effective date of the initial registration of the Company's securities. The Company may impose stop-transfer instructions with respect to the shares (or securities) subject to the foregoing restriction until the end of said 180-day period. The terms "register," "registered" and "registration" refer to a registration effected by preparing and filing a registration statement in compliance with the Securities Act of 1933, as amended (the "Securities Act"), and the declaration or ordering of the effectiveness of such registration statement.

_____
Signature of Optionee

AGREED TO AND ACCEPTED:

IGM BIOSCIENCES, INC.

By: _____

Title: _____

Number of Option Shares
Exercised: _____

Number of Option Shares
Remaining: _____

Date: _____

NON-STATUTORY STOCK OPTION AWARD CERTIFICATE

Non-transferable
GRANT TO

_____
("Optionee")

of the right to purchase from IGM Biosciences, Inc. (the "Company")

_____ shares of its common stock, $.01 par value (the "Shares"),
at the price of $_____per Share

pursuant to and subject to the provisions of the IGM Biosciences, Inc. 2018 Omnibus Incentive Plan (the "Plan") and to the terms and conditions set forth on the following pages (the "Terms and Conditions"). By accepting the Option, Optionee shall be deemed to have agreed to the Terms and Conditions set forth in this Award Certificate and the Plan. Capitalized terms used herein and not otherwise defined shall have the meanings assigned to such terms in the Plan.

The Option shall vest (and become exercisable) in accordance with the following schedule:

[Twenty-five percent (25%) of the Shares subject to the Option shall vest (and become exercisable) on [insert the one (1) year anniversary of the vesting start date, normally hire date for new hires], provided that Optionee remains in Continuous Service on such date; and one forty-eighth (1/48th) of the Shares subject to the Option shall vest (and become exercisable) each month thereafter on the [insert same day of the month or if after the 28th day, the last day of the month], provided that Optionee remains in Continuous Service on such date.]

Optionee acknowledges receipt of a copy of the Plan and hereby accepts this Option subject to all of the terms and conditions hereof and in the Plan.

Print Optionee address below:

_____
Optionee Signature

IGM Biosciences, Inc., acting by and through its duly authorized officers, has caused this Award Certificate to be duly executed.

IGM BIOSCIENCES, INC.

_____ Grant Date:
By:
Its:

TERMS AND CONDITIONS

1. Vesting of Option. The Option shall vest (and become exercisable) in accordance with the schedule shown on the cover page of this Award Certificate, subject to Optionee's Continuous Service from the date hereof through each of the applicable dates as set forth thereon. In the event of the termination of Optionee's Continuous Service for any reason, the unvested portion of the Option will expire immediately. In the event that the Surviving Corporation or other successor corporation in a Change in Control does not assume, substitute for or otherwise equitably convert the Option in a manner approved by the Committee or the Board, then, upon the occurrence of such Change in Control, the Option shall become fully vested and exercisable.

2. Term of Option and Limitations on Right to Exercise. Unless an earlier lapse is provided for herein or in the Plan, the term of the Option will be for a period of ten years, expiring at 5:00 p.m., Eastern Time, on the tenth anniversary of the Grant Date (the "Expiration Date"). To the extent not previously exercised, the Option will lapse prior to the Expiration Date upon the earliest to occur of the following circumstances:

(a) three (3) months after the termination of Optionee's Continuous Service for any reason other than (i) by reason of Optionee's death or Disability, or (ii) by the Company for Cause;

(b) twelve (12) months after the date of the termination of Optionee's Continuous Service by reason of his or her Disability;

(c) twelve (12) months after Optionee's death, if (i) Optionee dies during his or her Continuous Service and before the Option otherwise expires, or (ii) Optionee dies during the three-month period described in subsection (a) above and before the Option otherwise expires or (iii) Optionee dies during the twelve-month period described in subsection (b) above and before the Option otherwise expires (upon Optionee's death, the Option may be exercised by Optionee's estate or other beneficiary designated pursuant to the Plan); or

(d) immediately upon the termination of Optionee's Continuous Service by the Company for Cause.

If Optionee or his or her beneficiary exercises an Option after termination of service, the Option may be exercised only with respect to the Shares that were otherwise vested on Optionee's termination of Continuous Service. For the avoidance of doubt, any portion of the Option that is unvested as of the date of Optionee's termination of Continuous Service shall expire as of the date of Optionee's termination of Continuous Service.

In addition, if this Option is not assumed, substituted for or otherwise equitably converted in the event of a Change in Control, then the Committee will notify the Optionee in writing or electronically that the Option will be exercisable for a period of time determined by the Committee in its sole discretion, and the Option will terminate upon the expiration of such period.

3. Exercise of Option. The Option shall be exercised by written notice directed to the Secretary of the Company or his or her designee at the address and in the form attached hereto as Exhibit A, or as otherwise specified by the Company from time to time (which may include, among other terms, a "lockup" or agreement restricting transfers or dispositions of Shares in the period following a registered public offering by the Company). The Company reserves the right to change the means of exercising the Option (including exercise through an on-line system) or the Plan administration at any time. Optionee must make payment to the Company in full for the Shares subject to such exercise. If the person exercising an

Option is not Optionee, such person shall also provide appropriate proof of his or her right to exercise the Option. Payment for such Shares shall be (i) in cash, (ii) if approved by the Company, by delivery (actual or by attestation) of Shares previously acquired by the purchaser, (iii) at the election of the Company, by withholding of Shares from the Option, or (iv) any combination thereof, for the number of Shares being exercised. Shares surrendered or withheld for this purpose shall be valued at their Fair Market Value on the date of exercise.

4. Limitation of Rights. The Option does not confer to Optionee or Optionee's beneficiary any rights of a stockholder of the Company unless and until Shares are in fact issued to such person in connection with the exercise of the Option. Nothing in this Award Certificate shall interfere with or limit in any way the right of the Company or any Affiliate to terminate Optionee's service at any time, nor confer upon Optionee any right to continue in the service of the Company or any Affiliate.

5. Restrictions on Transfer and Pledge. No right or interest of Optionee in the Option may be assigned, alienated, pledged, attached, sold or otherwise transferred or encumbered by Optionee other than by will or the laws of descent and distribution, or pursuant to a domestic relations order as defined in Section 414(p)(1)(B) of the Code or Title I of ERISA, or the rules thereunder. Notwithstanding the foregoing, the Option may be transferred, without consideration, to a Permitted Transferee (as defined in Section 13.3 of the Plan). The Option may be exercised during the lifetime of Optionee only by Optionee or any Permitted Transferee. Optionee acknowledges that any Shares issued upon exercise of the Option shall be subject to a right of first refusal as set forth in the Bylaws of the Company.

6. Restrictions on Issuance of Shares. If at any time the Board shall determine in its discretion, that registration, listing or qualification of the Shares covered by the Option upon any securities exchange or under any foreign, federal, or local law or practice, or the consent or approval of any governmental regulatory body, is necessary or desirable as a condition to the exercise of the Option, the Option may not be exercised in whole or in part unless and until such registration, listing, qualification, consent or approval shall have been effected or obtained free of any conditions not acceptable to the Board.

7. Withholding. The Company or any Affiliate has the authority and the right to deduct or withhold, or require Optionee to remit to the Company or any Affiliate, an amount sufficient to satisfy federal, state, foreign, and local taxes (including Optionee's FICA obligation) required by law to be withheld with respect to any taxable event arising as a result of the Options. At the election of the Company, the withholding requirement may be satisfied, in whole or in part, by withholding, from the Options, Shares having a Fair Market Value on the date of withholding equal to the amount required to be withheld for tax purposes under applicable law.

8. Plan Controls. The terms contained in the Plan are incorporated into and made a part of this Award Certificate and this Award Certificate shall be governed by and construed in accordance with the Plan. In the event of any actual or alleged conflict between the provisions of the Plan and the provisions of this Award Certificate, the provisions of the Plan shall be controlling and determinative.

9. Successors. This Award Certificate shall be binding upon any successor of the Company, in accordance with the terms of this Award Certificate and the Plan.

10. Severability. If any one or more of the provisions contained in this Award Certificate is invalid, illegal or unenforceable, the other provisions of this Award Certificate will be construed and enforced as if the invalid, illegal or unenforceable provision had never been included.

11. Notice. Notices hereunder must be delivered in writing, delivered personally or sent by registered or certified U.S. mail, return receipt requested, postage prepaid. Notices to the Company must be addressed to IGM Biosciences, Inc., 325 E. Middlefield Road Mountain View, CA 94043; Attn: Corporate Secretary, or any other address designated by the Company in a written notice to Optionee. Notices to Optionee will be directed to Optionee either electronically to Optionee's business email address then currently on file with the Company or at the home address of Optionee then currently on file with the Company, or at any other address given by Optionee in a written notice to the Company.

12. Clawback. The Option shall be subject to any compensation recoupment policy of the Company that is applicable by its terms to Optionee and to awards of this type.

EXHIBIT A

NOTICE OF EXERCISE OF OPTION TO PURCHASE COMMON STOCK

NOTICE OF EXERCISE OF OPTION TO PURCHASE
COMMON STOCK OF
IGM BIOSCIENCES, INC.

Name of Optionee: _____

Date: _____

IGM Biosciences, Inc.
325 E. Middlefield Road
Mountain View, CA 94043
Attn: Corporate Secretary

Re: Exercise of Option under the IGM Biosciences, Inc. 2018 Omnibus Incentive Plan (the "Plan")

I elect to purchase _____ shares of common stock ("Stock") of IGM Biosciences, Inc. (the "Company") pursuant to my option granted under a Non-Statutory Stock Option Award Certificate dated _____ (the "Option"). The exercise price of the Option is $ _____ per share.

The purchase will take place on the Exercise Date, which will be as soon as practicable following the date on which this exercise notice and all other necessary forms and payments are received by the Company.

I acknowledge that the Exercise Date will not occur, and I am not entitled to receive any shares of Stock, until I have (i) paid the exercise price in full, and (ii) satisfied my tax withholding obligations.

I further acknowledge that as a condition to the exercise of the Option and the issuance of Stock pursuant to such exercise, I will be required to become a party to any Stockholders Agreement which may be executed by and among the Company and its stockholders in the future.

I understand that if I request, and the Company agrees, to satisfy the exercise price and/or tax withholding obligation relating to the Option by having the Company withhold shares of Stock from the Option, the number of shares withheld will be determined based upon the "Fair Market Value" of the Stock. As provided in the Plan, Fair Market Value is determined by the Compensation Committee using such method as it considers to be reasonable.

1. Payment of Exercise Price. I will pay the full exercise price in the form specified below (*check one*):

☐ Cash: by delivering a check to the Company for $_____, which is the full amount of the exercise price.

☐ Delivery of Shares: subject to the Company's agreement to do so, by delivering to the Company previously-acquired shares of Company Stock that have a Fair Market Value as of the Exercise Date equal to the full exercise price of the Option. (Such delivery may be made by attestation of my ownership or by actual delivery of one or more stock certificates duly endorsed for transfer.) If the number of shares of such Company Stock exceeds the number needed to pay the exercise price and any tax withholding (as indicated below), the Company will issue me a new stock certificate (or book-entry shares) for the excess.

☐ Withholding of Shares: subject to the Company's agreement to do so, by having the Company withhold shares of Company Stock from the Option having a Fair Market Value on the Exercise Date equal to the full exercise price of the Option.

2. Withholding Taxes. I will satisfy any required tax withholding obligations arising from the exercise of the Option in the form specified below (*check one*):

☐ Cash: by delivering a check to the Company for the required tax withholding amount (to be determined by the Company).

☐ Delivery of Shares: subject to the Company's agreement to do so, by delivering to the Company shares of Company Stock that have a Fair Market Value as of the Exercise Date equal to the required tax withholding amount. (Such delivery may be made by attestation of ownership or by actual delivery of one or more stock certificates duly endorsed for transfer.) If the number of shares of such Company Stock exceeds the number needed to pay the tax withholding amount and the exercise price (as indicated above), the Company will issue me a new stock certificate (or book-entry shares) for the excess.

☐ Withholding of Shares: subject to the Company's agreement to do so, by having the Company withhold shares of Company Stock from the Option having a Fair Market Value on the Exercise Date equal to the amount required to be withheld for tax purposes.

3. Covenants and Representations of Optionee. I hereby represent, warrant, covenant, and agree with the Company as follows as of the Exercise Date:

(a) I have received, read and understood a copy of the Plan and the Non-Statutory Stock Option Award Certificate relating to my Option;

(b) The shares of Company Stock are being received for my own account without the participation of any other person, with the intent of holding the shares of Company Stock for investment and without a view to or the intent of participating, directly or indirectly, in a sale or distribution of the shares of Company Stock or any portion thereof;

(c) I am not acquiring the shares of Company Stock based on any representation, oral or written, by any person with respect to the future value of, or income from, the shares of Company Stock, but rather on an independent examination and judgment as to the prospects of the Company;

(d) I am familiar with the business and affairs of the Company, and realize that the receipt of the shares of Company Stock is a speculative investment and that any possible profit therefrom is uncertain;

(e) I have had the opportunity to ask questions of and receive answers from the Company and have received all information and data with respect to the Company that I have requested and that I have deemed relevant in connection with my receipt of the shares of Company Stock;

(f) I am able to bear the economic risk of the investment in shares of Company Stock, including the risk of a complete loss of my investment, and I acknowledge that I must continue to bear the economic risk of the investment in the shares of Company Stock received on exercise of the Option for an indefinite period;

(g) I understand and agree that the shares of Company Stock subject to the Option may be issued and sold to me without registration under any state or federal securities laws, and in that event (i) will be issued and sold in reliance on exemptions from registration under applicable state and federal laws and (ii) will be "restricted" under applicable state and federal securities laws and that, pursuant to those laws, the Company Stock cannot be resold unless registered under the Securities Act of 1933 (the "1933 Act") or in reliance on an exemption from registration.

(h) The Company will be under no obligation to register or qualify the shares of Company Stock issuable pursuant to the Option or to comply with any exemption available for sale of the shares of Company Stock by me without registration, and the Company is under no obligation to act in any manner so as to make Rule 144 promulgated under the 1933 Act available with respect to sale of the shares of Company Stock by me; and

(i) A legend indicating that the shares of Company Stock issued pursuant to the Option have not been registered under applicable securities laws and referring to any applicable restrictions on transferability and sale of the shares of Company Stock may be placed on any certificate or certificates delivered to me and any transfer agent of the Company may be instructed to require compliance therewith.

[*remainder of page intentionally blank*]

Upon receipt of a written request by the Company or by its underwriters in connection with a registration (as defined below), I shall not sell, sell short, grant an option to buy, or otherwise dispose of shares of the Company's Common Stock or other securities (except for any such shares included in the registration) for a period of one hundred and eighty (180) days following the effective date of the initial registration of the Company's securities. The Company may impose stop-transfer instructions with respect to the shares (or securities) subject to the foregoing restriction until the end of said 180-day period. The terms "register," "registered" and "registration" refer to a registration effected by preparing and filing a registration statement in compliance with the Securities Act of 1933, as amended (the "Securities Act"), and the declaration or ordering of the effectiveness of such registration statement.

_____
Signature of Optionee

AGREED TO AND ACCEPTED:

IGM BIOSCIENCES, INC.

By: _____

Title: _____

Number of Option Shares
Exercised: _____

Number of Option Shares
Remaining: _____

Date: _____

IGM BIOSCIENCES, INC.
AMENDED AND RESTATED 2018 OMNIBUS INCENTIVE PLAN

1. Purposes of the Plan. The purposes of this Plan are:

- to attract and retain the best available personnel for positions of substantial responsibility,
- to provide additional incentive to Employees, Directors and Consultants, and
- to promote the success of the Company's business.

The Plan permits the grant of Incentive Stock Options, Nonstatutory Stock Options, Restricted Stock, Restricted Stock Units, Stock Appreciation Rights, Performance Units and Performance Shares.

2. Definitions. As used herein, the following definitions will apply:

(a) "Administrator" means the Board or any of its Committees as will be administering the Plan, in accordance with Section 4 of the Plan.

(b) "Applicable Laws" means the legal and regulatory requirements relating to the administration of equity-based awards and the related issuance of Shares thereunder, including but not limited to U.S. federal and state corporate laws, U.S. federal and state securities laws, the Code, any stock exchange or quotation system on which the Common Stock is listed or quoted and the applicable laws of any non-U.S. country or jurisdiction where Awards are, or will be, granted under the Plan.

(c) "Award" means, individually or collectively, a grant under the Plan of Options, Stock Appreciation Rights, Restricted Stock, Restricted Stock Units, Performance Units or Performance Shares.

(d) "Award Agreement" means the written or electronic agreement setting forth the terms and provisions applicable to each Award granted under the Plan. The Award Agreement is subject to the terms and conditions of the Plan.

(e) "Board" means the Board of Directors of the Company.

(f) "Change in Control" means the occurrence of any of the following events:

(i) A change in the ownership of the Company which occurs on the date that any one person, or more than one person acting as a group ("Person"), acquires ownership of the stock of the Company that, together with the stock held by such Person, constitutes more than 50% of the total voting power of the stock of the Company; provided, however, that for purposes

of this subsection, (A) the acquisition of additional stock by any one Person, who is considered to own more than 50% of the total voting power of the stock of the Company will not be considered a Change in Control, and (B) if the stockholders of the Company immediately before such change in ownership continue to retain immediately after the change in ownership, in substantially the same proportions as their ownership of shares of the Company's voting stock immediately prior to the change in ownership, the direct or indirect beneficial ownership of 50% or more of the total voting power of the stock of the Company or of the ultimate parent entity of the Company, such event will not be considered a Change in Control under this subsection (i). For this purpose, indirect beneficial ownership will include, without limitation, an interest resulting from ownership of the voting securities of one or more corporations or other business entities which own the Company, as the case may be, either directly or through one or more subsidiary corporations or other business entities; or

(ii) A change in the effective control of the Company which occurs on the date that a majority of members of the Board is replaced during any 12-month period by Directors whose appointment or election is not endorsed by a majority of the members of the Board prior to the date of the appointment or election. For purposes of this subsection (ii), if any Person is considered to be in effective control of the Company, the acquisition of additional control of the Company by the same Person will not be considered a Change in Control; or

(iii) A change in the ownership of a substantial portion of the Company's assets which occurs on the date that any Person acquires (or has acquired during the 12-month period ending on the date of the most recent acquisition by such person or persons) assets from the Company that have a total gross fair market value equal to or more than 50% of the total gross fair market value of all of the assets of the Company immediately prior to such acquisition or acquisitions; provided, however, that for purposes of this subsection (iii), the following will not constitute a change in the ownership of a substantial portion of the Company's assets: (A) a transfer to an entity that is controlled by the Company's stockholders immediately after the transfer, or (B) a transfer of assets by the Company to: (1) a stockholder of the Company (immediately before the asset transfer) in exchange for or with respect to the Company's stock, (2) an entity, 50% or more of the total value or voting power of which is owned, directly or indirectly, by the Company, (3) a Person, that owns, directly or indirectly, 50% or more of the total value or voting power of all the outstanding stock of the Company, or (4) an entity, at least 50% of the total value or voting power of which is owned, directly or indirectly, by a Person described in this subsection (iii)(B)(3). For purposes of this subsection (iii), gross fair market value means the value of the assets of the Company, or the value of the assets being disposed of, determined without regard to any liabilities associated with such assets.

For purposes of this definition, persons will be considered to be acting as a group if they are owners of a corporation that enters into a merger, consolidation, purchase or acquisition of stock, or similar business transaction with the Company.

Notwithstanding the foregoing, a transaction will not be deemed a Change in Control unless the transaction qualifies as a change in control event within the meaning of Section 409A.

Further and for the avoidance of doubt, a transaction will not constitute a Change in Control if: (i) its sole purpose is to change the state of the Company's incorporation, or (ii) its sole purpose is to create a holding company that will be owned in substantially the same proportions by the persons who held the Company's securities immediately before such transaction.

(g) "Code" means the Internal Revenue Code of 1986, as amended. Reference to a specific section of the Code or regulation thereunder will include such section or regulation, any valid regulation promulgated under such section, and any comparable provision of any future legislation or regulation amending, supplementing or superseding such section or regulation.

(h) "Committee" means a committee of Directors or of other individuals satisfying Applicable Laws appointed by the Board, or a duly authorized committee of the Board, in accordance with Section 4 hereof.

(i) "Common Stock" means the common stock of the Company.

(j) "Company" means IGM Biosciences, Inc., a Delaware corporation, or any successor thereto.

(k) "Consultant" means any natural person, including an advisor, engaged by the Company or a Parent or Subsidiary to render bona fide services to such entity, provided the services (i) are not in connection with the offer or sale of securities in a capital-raising transaction, and (ii) do not directly promote or maintain a market for the Company's securities, in each case, within the meaning of Form S-8 promulgated under the Securities Act, and provided, further, that a Consultant will include only those persons to whom the issuance of Shares may be registered under Form S-8 promulgated under the Securities Act.

(l) "Director" means a member of the Board.

(m) "Disability" means total and permanent disability as defined in Section 22(e)(3) of the Code, provided that in the case of Awards other than Incentive Stock Options, the Administrator in its discretion may determine whether a permanent and total disability exists in accordance with uniform and non-discriminatory standards adopted by the Administrator from time to time.

(n) "Employee" means any person, including Officers and Directors, employed by the Company or any Parent or Subsidiary of the Company. Neither service as a Director nor payment of a director's fee by the Company will be sufficient to constitute "employment" by the Company.

(o) "Exchange Act" means the Securities Exchange Act of 1934, as amended.

(p) "Exchange Program" means a program under which (i) outstanding Awards are surrendered or cancelled in exchange for awards of the same type (which may have higher or lower exercise prices and different terms), awards of a different type, and/or cash, (ii) Participants would have the opportunity to transfer any outstanding Awards to a financial institution or other person or entity selected by the Administrator, and/or (iii) the exercise price of an outstanding Award is increased or reduced. The Administrator will determine the terms and conditions of any Exchange Program in its sole discretion.

(q) "Fair Market Value" means, as of any date, the value of Common Stock determined as follows:

(i) For purposes of any Awards granted on the Registration Date, the Fair Market Value will be the initial price to the public as set forth in the final prospectus included within the registration statement in Form S-1 filed with the Securities and Exchange Commission for the initial public offering of the Company's Common Stock.

(ii) For purposes of any Awards granted on any other date, the Fair Market Value will be the closing sales price for Common Stock as quoted on any established stock exchange or national market system (including without limitation the New York Stock Exchange, Nasdaq Global Select Market, the Nasdaq Global Market or the Nasdaq Capital Market of The Nasdaq Stock Market) on which the Common Stock is listed on the date of determination (or the closing bid, if no sales were reported), as reported in *The Wall Street Journal* or such other source as the Administrator deems reliable. If the determination date for the Fair Market Value occurs on a non-trading day (i.e., a weekend or holiday), the Fair Market Value will be such price on the immediately preceding trading day, unless otherwise determined by the Administrator. In the absence of an established market for the Common Stock, the Fair Market Value thereof will be determined in good faith by the Administrator.

The determination of fair market value for purposes of tax withholding may be made in the Administrator's discretion subject to Applicable Laws and is not required to be consistent with the determination of Fair Market Value for other purposes.

(r) "Fiscal Year" means the fiscal year of the Company.

(s) "Incentive Stock Option" means an Option intended to qualify as an incentive stock option within the meaning of Section 422 of the Code and the regulations promulgated thereunder.

(t) "Nonstatutory Stock Option" means an Option that by its terms does not qualify or is not intended to qualify as an Incentive Stock Option.

(u) "Officer" means a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act and the rules and regulations promulgated thereunder.

(v) "Option" means a stock option granted pursuant to the Plan.

(w) "Outside Director" means a Director who is not an Employee.

(x) "Parent" means a "parent corporation," whether now or hereafter existing, as defined in Section 424(e) of the Code.

(y) "Participant" means the holder of an outstanding Award.

(z) "Performance Share" means an Award denominated in Shares which may be earned in whole or in part upon attainment of performance goals or other vesting criteria as the Administrator may determine pursuant to Section 10.

(aa) "Performance Unit" means an Award which may be earned in whole or in part upon attainment of performance goals or other vesting criteria as the Administrator may determine and which may be settled for cash, Shares or other securities or a combination of the foregoing pursuant to Section 10.

(bb) "Period of Restriction" means the period during which the transfer of Shares of Restricted Stock are subject to restrictions and therefore, the Shares are subject to a substantial risk of forfeiture. Such restrictions may be based on the passage of time, the achievement of target levels of performance, or the occurrence of other events as determined by the Administrator.

(cc) "Plan" means this Amended and Restated 2018 Omnibus Incentive Plan.

(dd) "Registration Date" means the effective date of the first registration statement that is filed by the Company and declared effective pursuant to Section 12(b) of the Exchange Act, with respect to any class of the Company's securities.

(ee) "Restricted Stock" means Shares issued pursuant to a Restricted Stock award under Section 7 of the Plan, or issued pursuant to the early exercise of an Option.

(ff) "Restricted Stock Unit" means a bookkeeping entry representing an amount equal to the Fair Market Value of one Share, granted pursuant to Section 8. Each Restricted Stock Unit represents an unfunded and unsecured obligation of the Company.

(gg) "Rule 16b-3" means Rule 16b-3 of the Exchange Act or any successor to Rule 16b-3, as in effect when discretion is being exercised with respect to the Plan.

(hh) "Section 409A" means Code Section 409A, as it has been and may be amended from time to time, and any proposed or final Treasury Regulations and Internal Revenue Service guidance that has been promulgated or may be promulgated thereunder from time to time.

(ii) "Securities Act" means the Securities Act of 1933, as amended.

(jj) "Service Provider" means an Employee, Director or Consultant.

(kk) "Share" means a share of the Common Stock, as adjusted in accordance with Section 13 of the Plan.

(ll) "Stock Appreciation Right" means an Award, granted alone or in connection with an Option, that pursuant to Section 9 is designated as a Stock Appreciation Right.

(mm) "Subsidiary" means a "subsidiary corporation," whether now or hereafter existing, as defined in Section 424(f) of the Code.

3. Stock Subject to the Plan.

(a) Stock Subject to the Plan. Subject to the provisions of Section 13 of the Plan and the automatic increase set forth in Section 3(b) of the Plan, the maximum aggregate number of Shares that may be issued under the Plan is 4,384,000 Shares. The Shares may be authorized, but unissued, or reacquired Common Stock.

(b) Automatic Share Reserve Increase. Subject to the provisions of Section 13 of the Plan, the number of Shares available for issuance under the Plan will be increased on the first day of each Fiscal Year beginning with the 2020 Fiscal Year and ending with the 2029 Fiscal Year, in an amount equal to the least of (i) 8,768,000 Shares, (ii) 4% of the outstanding Shares on the last day of the immediately preceding Fiscal Year or (iii) such number of Shares determined by the Board.

(c) Lapsed Awards. If an Award expires or becomes unexercisable without having been exercised in full, is surrendered pursuant to an Exchange Program, or, with respect to Restricted Stock, Restricted Stock Units, Performance Units or Performance Shares, is forfeited to or repurchased by the Company due to failure to vest, the unpurchased Shares (or for Awards other than Options or Stock Appreciation Rights the forfeited or repurchased Shares), which were subject thereto will become available for future grant or sale under the Plan (unless the Plan has terminated). With respect to Stock Appreciation Rights, only Shares actually issued (i.e., the net Shares issued) pursuant to a Stock Appreciation Right will cease to be available under the Plan; all remaining Shares under Stock Appreciation Rights will remain available for future grant or sale under the Plan (unless the Plan has terminated). Shares that have actually been issued under the Plan under any Award will not be returned to the Plan and will not become available for future distribution under the Plan; provided, however, that if Shares issued pursuant to Awards of Restricted Stock, Restricted Stock Units, Performance Shares or Performance Units are repurchased by the Company or are forfeited to the Company, such Shares will become available for future grant under the Plan. Shares used to pay the exercise price of an Award or to satisfy the tax withholding obligations related to an Award will become available for future grant or sale under the Plan. To the extent an Award under the Plan is paid out in cash rather than Shares, such cash payment will not result in reducing the number of Shares available for issuance under the Plan. Notwithstanding the foregoing and, subject to adjustment as provided in Section 13, the maximum number of Shares that may be issued upon the exercise of Incentive Stock Options will equal the aggregate Share number stated in Section 3(a), plus, to the extent allowable under Section 422 of the Code and the Treasury Regulations promulgated thereunder, any Shares that become available for issuance under the Plan pursuant to Sections 3(b) and 3(c).

(d) Share Reserve. The Company, during the term of this Plan, will at all times reserve and keep available such number of Shares as will be sufficient to satisfy the requirements of the Plan.

4. Administration of the Plan.

(a) Procedure.

(i) Multiple Administrative Bodies. Different Committees with respect to different groups of Service Providers may administer the Plan.

(ii) Rule 16b-3. To the extent desirable to qualify transactions hereunder as exempt under Rule 16b-3, the transactions contemplated hereunder will be structured to satisfy the requirements for exemption under Rule 16b-3.

(iii) Other Administration. Other than as provided above, the Plan will be administered by (A) the Board or (B) a Committee, which committee will be constituted to satisfy Applicable Laws.

(b) Powers of the Administrator. Subject to the provisions of the Plan, and in the case of a Committee, subject to the specific duties delegated by the Board to such Committee, the Administrator will have the authority, in its discretion:

(i) to determine the Fair Market Value;

(ii) to select the Service Providers to whom Awards may be granted hereunder;

(iii) to determine the number of Shares to be covered by each Award granted hereunder;

(iv) to approve forms of Award Agreements for use under the Plan;

(v) to determine the terms and conditions, not inconsistent with the terms of the Plan, of any Award granted hereunder. Such terms and conditions include, but are not limited to, the exercise price, the time or times when Awards may be exercised (which may be based on performance criteria), any vesting acceleration or waiver of forfeiture restrictions, and any restriction or limitation regarding any Award or the Shares relating thereto, based in each case on such factors as the Administrator will determine;

(vi) to institute and determine the terms and conditions of an Exchange Program;

(vii) to construe and interpret the terms of the Plan and Awards granted pursuant to the Plan;

(viii) to prescribe, amend and rescind rules and regulations relating to the Plan, including rules and regulations relating to sub-plans established for the purpose of satisfying applicable non-U.S. laws or for qualifying for favorable tax treatment under applicable non-U.S. laws;

(ix) to modify or amend each Award (subject to Section 18 of the Plan), including but not limited to the discretionary authority to extend the post-termination exercisability period of Awards and to extend the maximum term of an Option (subject to Section 6(b) of the Plan regarding Incentive Stock Options);

(x) to allow Participants to satisfy tax withholding obligations in such manner as prescribed in Section 14 of the Plan;

(xi) to authorize any person to execute on behalf of the Company any instrument required to effect the grant of an Award previously granted by the Administrator;

(xii) to allow a Participant to defer the receipt of the payment of cash or the delivery of Shares that would otherwise be due to such Participant under an Award; and

(xiii) to make all other determinations deemed necessary or advisable for administering the Plan.

(c) Effect of Administrator's Decision. The Administrator's decisions, determinations and interpretations will be final and binding on all Participants and any other holders of Awards.

5. Eligibility. Nonstatutory Stock Options, Stock Appreciation Rights, Restricted Stock, Restricted Stock Units, Performance Shares and Performance Units may be granted to Service Providers. Incentive Stock Options may be granted only to Employees.

6. Stock Options.

(a) Limitations. Each Option will be designated in the Award Agreement as either an Incentive Stock Option or a Nonstatutory Stock Option. However, notwithstanding such designation, to the extent that the aggregate fair market value of the shares with respect to which incentive stock options are exercisable for the first time by the Participant during any calendar year (under all plans of the Company and any Parent or Subsidiary) exceeds $100,000, such options will be treated as nonstatutory stock options. For purposes of this Section 6(a), incentive stock options will be taken into account in the order in which they were granted. The fair market value of the shares will be determined as of the time the option with respect to such shares is granted.

(b) Term of Option. The term of each Option will be stated in the Award Agreement. In the case of an Incentive Stock Option, the term will be 10 years from the date of

grant or such shorter term as may be provided in the Award Agreement. Moreover, in the case of an Incentive Stock Option granted to a Participant who, at the time the Incentive Stock Option is granted, owns stock representing more than 10% of the total combined voting power of all classes of stock of the Company or any Parent or Subsidiary, the term of the Incentive Stock Option will be 5 years from the date of grant or such shorter term as may be provided in the Award Agreement.

(c) Option Exercise Price and Consideration.

(i) Exercise Price. The per share exercise price for the Shares to be issued pursuant to exercise of an Option will be determined by the Administrator, subject to the following:

(1) In the case of an Incentive Stock Option

(A) granted to an Employee who, at the time the Incentive Stock Option is granted, owns stock representing more than 10% of the voting power of all classes of stock of the Company or any Parent or Subsidiary, the per Share exercise price will be no less than 110% of the Fair Market Value per Share on the date of grant.

(B) granted to any Employee other than an Employee described in paragraph (A) immediately above, the per Share exercise price will be no less than 100% of the Fair Market Value per Share on the date of grant.

(2) In the case of a Nonstatutory Stock Option, the per Share exercise price will be no less than 100% of the Fair Market Value per Share on the date of grant.

(3) Notwithstanding the foregoing, Options may be granted with a per Share exercise price of less than 100% of the Fair Market Value per Share on the date of grant pursuant to a transaction described in, and in a manner consistent with, Section 424(a) of the Code.

(ii) Waiting Period and Exercise Dates. At the time an Option is granted, the Administrator will fix the period within which the Option may be exercised and will determine any conditions that must be satisfied before the Option may be exercised.

(iii) Form of Consideration. The Administrator will determine the acceptable form of consideration for exercising an Option, including the method of payment. In the case of an Incentive Stock Option, the Administrator will determine the acceptable form of consideration at the time of grant. Such consideration may consist entirely of: (1) cash; (2) check; (3) promissory note, to the extent permitted by Applicable Laws, (4) other Shares, provided that such Shares have a Fair Market Value on the date of surrender equal to the aggregate exercise price of the Shares as to which such Option will be exercised and provided that accepting such Shares will not result in any adverse accounting consequences to the Company, as the Administrator determines in its sole discretion; (5) consideration received by the Company under a broker-assisted (or other) cashless exercise program (whether through a broker or otherwise) implemented by the Company in connection with the Plan; (6) by net exercise; (7) such other consideration and method of payment for the issuance of Shares to the extent permitted by Applicable Laws; or (8) any combination of the foregoing methods of payment.

(d) Exercise of Option.

(i) Procedure for Exercise; Rights as a Stockholder. Any Option granted hereunder will be exercisable according to the terms of the Plan and at such times and under such conditions as determined by the Administrator and set forth in the Award Agreement. An Option may not be exercised for a fraction of a Share.

An Option will be deemed exercised when the Company receives: (i) a notice of exercise (in such form as the Administrator may specify from time to time) from the person entitled to exercise the Option, and (ii) full payment for the Shares with respect to which the Option is exercised (together with applicable withholding taxes). Full payment may consist of any consideration and method of payment authorized by the Administrator and permitted by the Award Agreement and the Plan. Shares issued upon exercise of an Option will be issued in the name of the Participant or, if requested by the Participant, in the name of the Participant and his or her spouse. Until the Shares are issued (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company), no right to vote or receive dividends or any other rights as a stockholder will exist with respect to the Shares subject to an Option, notwithstanding the exercise of the Option. The Company will issue (or cause to be issued) such Shares promptly after the Option is exercised. No adjustment will be made for a dividend or other right for which the record date is prior to the date the Shares are issued, except as provided in Section 13 of the Plan.

Exercising an Option in any manner will decrease the number of Shares thereafter available, both for purposes of the Plan and for sale under the Option, by the number of Shares as to which the Option is exercised.

(ii) Termination of Relationship as a Service Provider. If a Participant ceases to be a Service Provider, other than upon the Participant's termination as the result of the Participant's death or Disability, the Participant may exercise his or her Option within such period of time as is specified in the Award Agreement to the extent that the Option is vested on the date of termination (but in no event later than the expiration of the term of such Option as set forth in the Award Agreement). In the absence of a specified time in the Award Agreement, the Option will remain exercisable for 3 months following the Participant's termination. Unless otherwise provided by the Administrator, if on the date of termination the Participant is not vested as to his or her entire Option, the Shares covered by the unvested portion of the Option will revert to the Plan. If after termination the Participant does not exercise his or her Option within the time specified by the Administrator, the Option will terminate, and the Shares covered by such Option will revert to the Plan.

(iii) Disability of Participant. If a Participant ceases to be a Service Provider as a result of the Participant's Disability, the Participant may exercise his or her Option within such period of time as is specified in the Award Agreement to the extent the Option is

vested on the date of termination (but in no event later than the expiration of the term of such Option as set forth in the Award Agreement). In the absence of a specified time in the Award Agreement, the Option will remain exercisable for 12 months following the Participant's termination. Unless otherwise provided by the Administrator, if on the date of termination the Participant is not vested as to his or her entire Option, the Shares covered by the unvested portion of the Option will revert to the Plan. If after termination the Participant does not exercise his or her Option within the time specified herein, the Option will terminate, and the Shares covered by such Option will revert to the Plan.

(iv) Death of Participant. If a Participant dies while a Service Provider, the Option may be exercised following the Participant's death within such period of time as is specified in the Award Agreement to the extent that the Option is vested on the date of death (but in no event may the option be exercised later than the expiration of the term of such Option as set forth in the Award Agreement), by the Participant's designated beneficiary, provided such beneficiary has been designated prior to Participant's death in a form acceptable to the Administrator. If no such beneficiary has been designated by the Participant, then such Option may be exercised by the personal representative of the Participant's estate or by the person(s) to whom the Option is transferred pursuant to the Participant's will or in accordance with the laws of descent and distribution. In the absence of a specified time in the Award Agreement, the Option will remain exercisable for 12 months following Participant's death. Unless otherwise provided by the Administrator, if at the time of death Participant is not vested as to his or her entire Option, the Shares covered by the unvested portion of the Option will immediately revert to the Plan. If the Option is not so exercised within the time specified herein, the Option will terminate, and the Shares covered by such Option will revert to the Plan.

(v) Tolling Expiration. A Participant's Award Agreement may also provide that:

(1) if the exercise of the Option following the termination of Participant's status as a Service Provider (other than upon the Participant's death or Disability) would result in liability under Section 15(b), then the Option will terminate on the earlier of (A) the expiration of the term of the Option set forth in the Award Agreement, or (B) the 10th day after the last date on which such exercise would result in liability under Section 15(b); or

(2) if the exercise of the Option following the termination of the Participant's status as a Service Provider (other than upon the Participant's death or Disability) would be prohibited at any time solely because the issuance of Shares would violate the registration requirements under the Securities Act, then the Option will terminate on the earlier of (A) the expiration of the term of the Option or (B) the expiration of a period of 30 days after the termination of the Participant's status as a Service Provider during which the exercise of the Option would not be in violation of such registration requirements.

7. Restricted Stock.

(a) Grant of Restricted Stock. Subject to the terms and provisions of the Plan, the Administrator, at any time and from time to time, may grant Shares of Restricted Stock to Service Providers in such amounts as the Administrator, in its sole discretion, will determine.

(b) Restricted Stock Agreement. Each Award of Restricted Stock will be evidenced by an Award Agreement that will specify the Period of Restriction, the number of Shares granted, and such other terms and conditions as the Administrator, in its sole discretion, will determine. Unless the Administrator determines otherwise, the Company as escrow agent will hold Shares of Restricted Stock until the restrictions on such Shares have lapsed.

(c) Transferability. Except as provided in this Section 7 or the Award Agreement, Shares of Restricted Stock may not be sold, transferred, pledged, assigned, or otherwise alienated or hypothecated until the end of the applicable Period of Restriction.

(d) Other Restrictions. The Administrator, in its sole discretion, may impose such other restrictions on Shares of Restricted Stock as it may deem advisable or appropriate.

(e) Removal of Restrictions. Except as otherwise provided in this Section 7, Shares of Restricted Stock covered by each Restricted Stock grant made under the Plan will be released from escrow as soon as practicable after the last day of the Period of Restriction or at such other time as the Administrator may determine. The Administrator, in its discretion, may accelerate the time at which any restrictions will lapse or be removed.

(f) Voting Rights. During the Period of Restriction, Service Providers holding Shares of Restricted Stock granted hereunder may exercise full voting rights with respect to those Shares, unless the Administrator determines otherwise.

(g) Dividends and Other Distributions. During the Period of Restriction, Service Providers holding Shares of Restricted Stock will be entitled to receive all dividends and other distributions paid with respect to such Shares, unless the Administrator provides otherwise. If any such dividends or distributions are paid in Shares, the Shares will be subject to the same restrictions on transferability and forfeitability as the Shares of Restricted Stock with respect to which they were paid.

(h) Return of Restricted Stock to Company. On the date set forth in the Award Agreement, the Restricted Stock for which restrictions have not lapsed will revert to the Company and again will become available for grant under the Plan.

8. Restricted Stock Units.

(a) Grant. Restricted Stock Units may be granted at any time and from time to time as determined by the Administrator. After the Administrator determines that it will grant Restricted Stock Units under the Plan, it will advise the Participant in an Award Agreement of the terms, conditions, and restrictions related to the grant, including the number of Restricted Stock Units.

(b) Vesting Criteria and Other Terms. The Administrator will set vesting criteria in its discretion, which, depending on the extent to which the criteria are met, will determine the number of Restricted Stock Units that will be paid out to the Participant. The Administrator may set vesting criteria based upon the achievement of Company-wide, divisional, business unit, or individual goals (including, but not limited to, continued employment or service), applicable federal or state securities laws or any other basis determined by the Administrator in its discretion.

(c) Earning Restricted Stock Units. Upon meeting the applicable vesting criteria, the Participant will be entitled to receive a payout as determined by the Administrator. Notwithstanding the foregoing, at any time after the grant of Restricted Stock Units, the Administrator, in its sole discretion, may reduce or waive any vesting criteria that must be met to receive a payout.

(d) Form and Timing of Payment. Payment of earned Restricted Stock Units will be made as soon as practicable after the date(s) determined by the Administrator and set forth in the Award Agreement. The Administrator, in its sole discretion, may only settle earned Restricted Stock Units in cash, Shares, or a combination of both.

(e) Cancellation. On the date set forth in the Award Agreement, all unearned Restricted Stock Units will be forfeited to the Company.

9. Stock Appreciation Rights.

(a) Grant of Stock Appreciation Rights. Subject to the terms and conditions of the Plan, a Stock Appreciation Right may be granted to Service Providers at any time and from time to time as will be determined by the Administrator, in its sole discretion.

(b) Number of Shares. The Administrator will have complete discretion to determine the number of Stock Appreciation Rights granted to any Service Provider.

(c) Exercise Price and Other Terms. The per share exercise price for the Shares to be issued pursuant to exercise of a Stock Appreciation Right will be determined by the Administrator and will be no less than 100% of the Fair Market Value per Share on the date of grant. Otherwise, the Administrator, subject to the provisions of the Plan, will have complete discretion to determine the terms and conditions of Stock Appreciation Rights granted under the Plan.

(d) Stock Appreciation Right Agreement. Each Stock Appreciation Right grant will be evidenced by an Award Agreement that will specify the exercise price, the term of the Stock Appreciation Right, the conditions of exercise, and such other terms and conditions as the Administrator, in its sole discretion, will determine.

(e) Expiration of Stock Appreciation Rights. A Stock Appreciation Right granted under the Plan will expire 10 years from the date of grant or such shorter term as may be provided in the Award Agreement, as determined by the Administrator, in its sole discretion. Notwithstanding the foregoing, the rules of Section 6(d) relating to exercise also will apply to Stock Appreciation Rights.

(f) Payment of Stock Appreciation Right Amount. Upon exercise of a Stock Appreciation Right, a Participant will be entitled to receive payment from the Company in an amount determined by multiplying:

(i) The difference between the Fair Market Value of a Share on the date of exercise and the exercise price; *multiplied by*

(ii) The number of Shares with respect to which the Stock Appreciation Right is exercised.

At the discretion of the Administrator, the payment upon Stock Appreciation Right exercise may be in cash, in Shares of equivalent value, or in some combination thereof.

10. Performance Units and Performance Shares.

(a) Grant of Performance Units/Shares. Performance Units and Performance Shares may be granted to Service Providers at any time and from time to time, as will be determined by the Administrator, in its sole discretion. The Administrator will have complete discretion in determining the number of Performance Units and Performance Shares granted to each Participant.

(b) Value of Performance Units/Shares. Each Performance Unit will have an initial value that is established by the Administrator on or before the date of grant. Each Performance Share will have an initial value equal to the Fair Market Value of a Share on the date of grant.

(c) Performance Objectives and Other Terms. The Administrator will set performance objectives or other vesting provisions (including, without limitation, continued status as a Service Provider) in its discretion which, depending on the extent to which they are met, will determine the number or value of Performance Units/Shares that will be paid out to the Service Providers. The time period during which the performance objectives or other vesting provisions must be met will be called the “Performance Period.” Each Award of Performance Units/Shares will be evidenced by an Award Agreement that will specify the Performance Period, and such other terms and conditions as the Administrator, in its sole discretion, will determine. The Administrator may set performance objectives based upon the achievement of Company-wide, divisional, business unit or individual goals (including, but not limited to, continued employment or service), applicable federal or state securities laws, or any other basis determined by the Administrator in its discretion.

(d) Earning of Performance Units/Shares. After the applicable Performance Period has ended, the holder of Performance Units/Shares will be entitled to receive a payout of the number of Performance Units/Shares earned by the Participant over the Performance Period, to be determined as a function of the extent to which the corresponding performance objectives or other vesting provisions have been achieved. After the grant of a Performance Unit/Share, the Administrator, in its sole discretion, may reduce or waive any performance objectives or other vesting provisions for such Performance Unit/Share.

(e) Form and Timing of Payment of Performance Units/Shares. Payment of earned Performance Units/Shares will be made as soon as practicable after the expiration of the applicable Performance Period. The Administrator, in its sole discretion, may pay earned Performance Units/Shares in the form of cash, in Shares (which have an aggregate Fair Market Value equal to the value of the earned Performance Units/Shares at the close of the applicable Performance Period) or in a combination thereof.

(f) Cancellation of Performance Units/Shares. On the date set forth in the Award Agreement, all unearned or unvested Performance Units/Shares will be forfeited to the Company, and again will be available for grant under the Plan.

11. Leaves of Absence/Transfer Between Locations. Unless the Administrator provides otherwise, vesting of Awards granted hereunder will be suspended during any unpaid leave of absence. A Participant will not cease to be an Employee in the case of (i) any leave of absence approved by the Company or (ii) transfers between locations of the Company or between the Company, its Parent, or any Subsidiary. For purposes of Incentive Stock Options, no such leave may exceed 3 months, unless reemployment upon expiration of such leave is guaranteed by statute or contract. If reemployment upon expiration of a leave of absence approved by the Company is not so guaranteed, then 6 months following the 1st day of such leave any Incentive Stock Option held by the Participant will cease to be treated as an Incentive Stock Option and will be treated for tax purposes as a Nonstatutory Stock Option.

12. Transferability of Awards. Unless determined otherwise by the Administrator, an Award may not be sold, pledged, assigned, hypothecated, transferred, or disposed of in any manner other than by will or by the laws of descent or distribution and may be exercised, during the lifetime of the Participant, only by the Participant. If the Administrator makes an Award transferable, such Award will contain such additional terms and conditions as the Administrator deems appropriate.

13. Adjustments; Dissolution or Liquidation; Merger or Change in Control.

(a) Adjustments. In the event that any dividend or other distribution (whether in the form of cash, Shares, other securities, or other property), recapitalization, stock split, reverse stock split, reorganization, merger, consolidation, split-up, spin-off, combination, repurchase, or exchange of Shares or other securities of the Company, or other change in the corporate structure of the Company affecting the Shares occurs, the Administrator, in order to prevent diminution or enlargement of the benefits or potential benefits intended to be made available under the Plan, will adjust the number and class of Shares that may be delivered under the Plan and/or the number, class, and price of Shares covered by each outstanding Award, and the numerical Share limits in Section 3 of the Plan.

(b) Dissolution or Liquidation. In the event of the proposed dissolution or liquidation of the Company, the Administrator will notify each Participant as soon as practicable prior to the effective date of such proposed transaction. To the extent it has not been previously exercised, an Award will terminate immediately prior to the consummation of such proposed action.

(c) Change in Control. In the event of a merger of the Company with or into another corporation or other entity or a Change in Control, each outstanding Award will be treated as the Administrator determines subject to the restriction in the following paragraph, including, without limitation, that each Award be assumed or an equivalent option or right substituted by the successor corporation or a Parent or Subsidiary of the successor corporation. The Administrator will not be required to treat all Awards or Participants similarly in the transaction.

In the event that the successor corporation does not assume or substitute for the Award, the Participant will fully vest in and have the right to exercise all of his or her outstanding Options and Stock Appreciation Rights, including Shares as to which such Awards would not otherwise be vested or exercisable, all restrictions on Restricted Stock and Restricted Stock Units will lapse, and, with respect to Awards with performance-based vesting, all performance goals or other vesting criteria will be deemed achieved at 100% of target levels and all other terms and conditions met. In addition, if an Option or Stock Appreciation Right is not assumed or substituted in the event of a Change in Control, the Administrator will notify the Participant in writing or electronically that the Option or Stock Appreciation Right will be exercisable for a period of time determined by the Administrator in its sole discretion, and the Option or Stock Appreciation Right will terminate upon the expiration of such period.

For the purposes of this subsection (c), an Award will be considered assumed if, following the Change in Control, the Award confers the right to purchase or receive, for each Share subject to the Award immediately prior to the Change in Control, the consideration (whether stock, cash, or other securities or property) received in the Change in Control by holders of Common Stock for each Share held on the effective date of the transaction (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding Shares); provided, however, that if such consideration received in the Change in Control is not solely common stock of the successor corporation or its Parent, the Administrator may, with the consent of the successor corporation, provide for the consideration to be received upon the exercise of an Option or Stock Appreciation Right or upon the payout of a Restricted Stock Unit, Performance Unit or Performance Share, for each Share subject to such Award, to be solely common stock of the successor corporation or its Parent equal in fair market value to the per share consideration received by holders of Common Stock in the Change in Control.

Notwithstanding anything in this Section 13(c) to the contrary, an Award that vests, is earned or paid-out upon the satisfaction of one or more performance goals will not be

considered assumed if the Company or its successor modifies any of such performance goals without the Participant's consent; provided, however, a modification to such performance goals only to reflect the successor corporation's post-Change in Control corporate structure will not be deemed to invalidate an otherwise valid Award assumption.

(d) Outside Director Awards. With respect to Awards granted to an Outside Director, in the event of a Change in Control, then the Participant will fully vest in and have the right to exercise Options and/or Stock Appreciation Rights as to all of the Shares underlying such Award, including those Shares which would not otherwise be vested or exercisable, all restrictions on Restricted Stock and Restricted Stock Units will lapse, and, with respect to Awards with performance-based vesting, all performance goals or other vesting criteria will be deemed achieved at 100% of target levels and all other terms and conditions met.

14. Tax.

(a) Withholding Requirements. Prior to the delivery of any Shares or cash pursuant to an Award (or exercise thereof) or such earlier time as any tax withholding obligations are due, the Company will have the power and the right to deduct or withhold, or require a Participant to remit to the Company, an amount sufficient to satisfy U.S. federal, state, or local taxes, non-U.S. taxes, or other taxes (including the Participant's FICA obligation) required to be withheld with respect to such Award (or exercise thereof).

(b) Withholding Arrangements. The Administrator, in its sole discretion and pursuant to such procedures as it may specify from time to time, may permit a Participant to satisfy such tax withholding obligation, in whole or in part by (without limitation) (i) paying cash, (ii) electing to have the Company withhold otherwise deliverable cash or Shares having a fair market value not in excess of the maximum statutory amount required to be withheld, or (iii) delivering to the Company already-owned Shares having a fair market value not in excess of the maximum statutory amount required to be withheld. The fair market value of the Shares to be withheld or delivered will be determined as of the date that the taxes are required to be withheld.

(c) Compliance With Section 409A. Awards will be designed and operated in such a manner that they are either exempt from the application of, or comply with, the requirements of Section 409A such that the grant, payment, settlement or deferral will not be subject to the additional tax or interest applicable under Section 409A, except as otherwise determined in the sole discretion of the Administrator. The Plan and each Award Agreement under the Plan is intended to meet the requirements of Section 409A and will be construed and interpreted in accordance with such intent, except as otherwise determined in the sole discretion of the Administrator. To the extent that an Award or payment, or the settlement or deferral thereof, is subject to Section 409A the Award will be granted, paid, settled or deferred in a manner that will meet the requirements of Section 409A, such that the grant, payment, settlement or deferral will not be subject to the additional tax or interest applicable under Section 409A. In no event will the Company (or any Parent or Subsidiary of the Company, as applicable) reimburse a Participant for any taxes imposed or other costs incurred as a result of Section 409A.

15. No Effect on Employment or Service. Neither the Plan nor any Award will confer upon a Participant any right with respect to continuing the Participant's relationship as a Service Provider, nor will they interfere in any way with the Participant's right or the right of the Company (or any Parent or Subsidiary of the Company) to terminate such relationship at any time, with or without cause, to the extent permitted by Applicable Laws.

16. Date of Grant. The date of grant of an Award will be, for all purposes, the date on which the Administrator makes the determination granting such Award, or such other later date as is determined by the Administrator. Notice of the determination will be provided to each Participant within a reasonable time after the date of such grant.

17. Term of Plan. Subject to Section 22 of the Plan, the Plan will become effective upon the later to occur of (i) its adoption by the Board or (ii) the business day immediately prior to the Registration Date. It will continue in effect for a term of 10 years from the date adopted by the Board, unless terminated earlier under Section 18 of the Plan.

18. Amendment and Termination of the Plan.

(a) Amendment and Termination. The Administrator may at any time amend, alter, suspend or terminate the Plan.

(b) Stockholder Approval. The Company will obtain stockholder approval of any Plan amendment to the extent necessary and desirable to comply with Applicable Laws.

(c) Effect of Amendment or Termination. No amendment, alteration, suspension or termination of the Plan will materially impair the rights of any Participant, unless mutually agreed otherwise between the Participant and the Administrator, which agreement must be in writing and signed by the Participant and the Company. Termination of the Plan will not affect the Administrator's ability to exercise the powers granted to it hereunder with respect to Awards granted under the Plan prior to the date of such termination.

19. Conditions Upon Issuance of Shares.

(a) Legal Compliance. Shares will not be issued pursuant to an Award unless the exercise of such Award and the issuance and delivery of such Shares will comply with Applicable Laws and will be further subject to the approval of counsel for the Company with respect to such compliance.

(b) Investment Representations. As a condition to the exercise of an Award, the Company may require the person exercising such Award to represent and warrant at the time of any such exercise that the Shares are being purchased only for investment and without any present intention to sell or distribute such Shares if, in the opinion of counsel for the Company, such a representation is required.

20. Inability to Obtain Authority. The inability of the Company to obtain authority from any regulatory body having jurisdiction or to complete or comply with the requirements of any

registration or other qualification of the Shares under any U.S. federal or state law, any non-U.S. law, or the rules and regulations of the Securities and Exchange Commission, the stock exchange on which Shares of the same class are then listed, or any other governmental or regulatory body, which authority, registration, qualification or rule compliance is deemed by the Company's counsel to be necessary or advisable for the issuance and sale of any Shares hereunder, will relieve the Company of any liability in respect of the failure to issue or sell such Shares as to which such requisite authority, registration, qualification or rule compliance will not have been obtained.

21. Forfeiture Events.

(a) All Awards granted under the Plan will be subject to recoupment in accordance with any clawback policy that the Company is required to adopt pursuant to the listing standards of any national securities exchange or association on which the Company's securities are listed or as is otherwise required by the Dodd-Frank Wall Street Reform and Consumer Protection Act or other Applicable Laws. In addition, the Administrator may impose such other clawback, recovery or recoupment provisions in an Award Agreement as the Administrator determines necessary or appropriate, including but not limited to a reacquisition right in respect of previously acquired Shares or other cash or property. Unless this Section 21 is specifically mentioned and waived in an Award Agreement or other document, no recovery of compensation under a clawback policy will give a Participant the right to resign for "good reason" or "constructive termination" (or similar term) under any agreement with the Company.

(b) The Administrator may specify in an Award Agreement that the Participant's rights, payments, and benefits with respect to an Award shall be subject to reduction, cancellation, forfeiture, or recoupment upon the occurrence of specified events, in addition to any otherwise applicable vesting or performance conditions of an Award. Such events may include, but shall not be limited to, termination of such Participant's status as Service Provider for cause or any act by a Participant, whether before or after such Participant's Termination Status Date that would constitute cause for termination of such Participant's status as a Service Provider.

(c) If the Company is required to prepare an accounting restatement due to the material noncompliance of the Company, as a result of misconduct, with any financial reporting requirement under the securities laws, any Participant who knowingly or through gross negligence engaged in the misconduct, or who knowingly or through gross negligence failed to prevent the misconduct, and any Participant who is one of the individuals subject to automatic forfeiture under Section 304 of the Sarbanes-Oxley Act of 2002, shall reimburse the Company the amount of any payment in settlement of an Award earned or accrued during the 12 month period following the first public issuance or filing with the United States Securities and Exchange Commission (whichever first occurred) of the financial document embodying such financial reporting requirement.

22. Stockholder Approval. The Plan will be subject to approval by the stockholders of the Company within 12 months after the date the Plan is adopted by the Board. Such stockholder approval will be obtained in the manner and to the degree required under Applicable Laws.

IGM BIOSCIENCES, INC.
AMENDED AND RESTATED 2018 OMNIBUS INCENTIVE PLAN
RESTRICTED STOCK UNIT AGREEMENT

NOTICE OF RESTRICTED STOCK UNIT GRANT

Unless otherwise defined herein, the terms defined in the IGM Biosciences, Inc. Amended and Restated 2018 Omnibus Incentive Plan (the "Plan") will have the same defined meanings in this Restricted Stock Unit Agreement, which includes the Notice of Restricted Stock Unit Grant (the "Notice of Grant"), the Terms and Conditions of Restricted Stock Unit Grant attached hereto as Exhibit A, and all other exhibits and appendices attached hereto (the "Award Agreement").

Participant:

Address:

The undersigned Participant has been granted the right to receive an Award of Restricted Stock Units, subject to the terms and conditions of the Plan and this Award Agreement, as follows:

Grant Number: _____

Date of Grant: _____

Vesting Commencement Date: _____

Number of Restricted Stock Units: _____

Vesting Schedule:

Subject to any acceleration provisions contained in the Plan or set forth below, the Restricted Stock Units will vest in accordance with the following schedule:

[25% of the Restricted Stock Units will vest on the 1 year anniversary of the Vesting Commencement Date, and 1/16th of the Restricted Stock Units will vest quarterly thereafter on the same day of the month as the Vesting Commencement Date, subject to Participant continuing to be a Service Provider through each such date.**]**

In the event Participant ceases to be a Service Provider for any or no reason before Participant vests in the Restricted Stock Units, the Restricted Stock Units and Participant's right to acquire any Shares hereunder will immediately terminate.

By Participant's signature and the signature of the representative of IGM Biosciences, Inc. (the "Company") below, Participant and the Company agree that this Award of Restricted Stock Units is granted under and governed by the terms and conditions of the Plan and this Award Agreement, including the Terms and Conditions of Restricted Stock Unit Grant, attached hereto as

Exhibit A, all of which are made a part of this document. Participant acknowledges receipt of a copy of the Plan. Participant has reviewed the Plan and this Award Agreement in their entirety, has had an opportunity to obtain the advice of counsel prior to executing this Award Agreement, and fully understands all provisions of the Plan and this Award Agreement. Participant hereby agrees to accept as binding, conclusive, and final all decisions or interpretations of the Administrator upon any questions relating to the Plan and the Award Agreement. Participant further agrees to notify the Company upon any change in the residence address indicated below.

PARTICIPANT:

Signature

Print Name

Address:

IGM BIOSCIENCES, INC.

Signature

Print Name

Title

EXHIBIT A

TERMS AND CONDITIONS OF RESTRICTED STOCK UNIT GRANT

1. Grant of Restricted Stock Units. The Company hereby grants to the individual ("Participant") named in the Notice of Grant of Restricted Stock Units of this Award Agreement (the "Notice of Grant") under the Plan an Award of Restricted Stock Units, subject to all of the terms and conditions in this Award Agreement and the Plan, which is incorporated herein by this reference. Subject to Section 18(c) of the Plan, in the event of a conflict between the terms and conditions of the Plan and this Award Agreement, the terms and conditions of the Plan shall prevail.

2. Company's Obligation to Pay. Each Restricted Stock Unit represents the right to receive a Share on the date it vests. Unless and until the Restricted Stock Units will have vested in the manner set forth in Section 3 or 4, Participant will have no right to payment of any such Restricted Stock Units. Prior to actual payment of any vested Restricted Stock Units, such Restricted Stock Unit will represent an unsecured obligation of the Company, payable (if at all) only from the general assets of the Company.

3. Vesting Schedule. Except as provided in Section 4, and subject to Section 5, the Restricted Stock Units awarded by this Award Agreement will vest in accordance with the vesting schedule set forth in the Notice of Grant, subject to Participant continuing to be a Service Provider through each applicable vesting date.

4. Payment after Vesting.

(a) General Rule. Subject to Section 8, any Restricted Stock Units that vest will be paid to Participant (or in the event of Participant's death, to his or her properly designated beneficiary or estate) in whole Shares. Subject to the provisions of Section 4(b), such vested Restricted Stock Units shall be paid in whole Shares as soon as practicable after vesting, but in each such case within 60 days following the vesting date. In no event will Participant be permitted, directly or indirectly, to specify the taxable year of payment of any Restricted Stock Units payable under this Award Agreement.

(b) Acceleration.

(i) Discretionary Acceleration. The Administrator, in its discretion, may accelerate the vesting of the balance, or some lesser portion of the balance, of the unvested Restricted Stock Units at any time, subject to the terms of the Plan. If so accelerated, such Restricted Stock Units will be considered as having vested as of the date specified by the Administrator. If Participant is a U.S. taxpayer, the payment of Shares vesting pursuant to this Section 4(b) shall in all cases be paid at a time or in a manner that is exempt from, or complies with, Section 409A. The prior sentence may be superseded in a future agreement or amendment to this Award Agreement only by direct and specific reference to such sentence.

(ii) Notwithstanding anything in the Plan or this Award Agreement or any other agreement (whether entered into before, on or after the Date of Grant), if the vesting of the balance, or some lesser portion of the balance, of the Restricted Stock Units is accelerated in connection with Participant's termination as a Service Provider (provided that such termination is a "separation from service" within the meaning of Section 409A, as determined by the Company), other than due to Participant's death, and if (x) Participant is a U.S. taxpayer and a "specified employee" within the meaning of Section 409A at the time of such termination as a Service Provider and (y) the payment of such accelerated Restricted Stock Units will result in the imposition of additional tax under Section 409A if paid to Participant on or within the 6 month period following Participant's termination as a Service Provider, then the payment of such accelerated Restricted Stock Units will not be made until the date 6 months and 1 day following the date of Participant's termination as a Service Provider, unless Participant dies following his or her termination as a Service Provider, in which case, the Restricted Stock Units will be paid in Shares to Participant's estate as soon as practicable following his or her death.

(c) Section 409A. It is the intent of this Award Agreement that it and all payments and benefits to U.S. taxpayers hereunder be exempt from, or comply with, the requirements of Section 409A so that none of the Restricted Stock Units provided under this Award Agreement or Shares issuable thereunder will be subject to the additional tax imposed under Section 409A, and any ambiguities herein will be interpreted to be so exempt or so comply. Each payment payable under this Award Agreement is intended to constitute a separate payment for purposes of Treasury Regulation Section 1.409A-2(b)(2). However, in no event will the Company reimburse Participant, or be otherwise responsible for, any taxes or costs that may be imposed on Participant as a result of Section 409A. For purposes of this Award Agreement, "Section 409A" means Section 409A of the Code, and any final Treasury Regulations and Internal Revenue Service guidance thereunder, as each may be amended from time to time.

5. Forfeiture Upon Termination as a Service Provider. Notwithstanding any contrary provision of this Award Agreement, if Participant ceases to be a Service Provider for any or no reason, the then-unvested Restricted Stock Units awarded by this Award Agreement will thereupon be forfeited at no cost to the Company and Participant will have no further rights thereunder.

6. Tax Consequences. Participant has reviewed with his or her own tax advisors the U.S. federal, state, local and non-U.S. tax consequences of this investment and the transactions contemplated by this Award Agreement. With respect to such matters, Participant relies solely on such advisors and not on any statements or representations of the Company or any of its agents, written or oral. Participant understands that Participant (and not the Company) shall be solely responsible for Participant's own tax liability that may arise as a result of this investment or the transactions contemplated by this Award Agreement.

7. Death of Participant. Any distribution or delivery to be made to Participant under this Award Agreement will, if Participant is then deceased, be made to Participant's designated beneficiary, or if no beneficiary survives Participant, the administrator or executor of Participant's estate. Any such transferee must furnish the Company with (a) written notice of his or her status as transferee, and (b) evidence satisfactory to the Company to establish the validity of the transfer and compliance with any laws or regulations pertaining to said transfer.

8. Tax Obligations

(a) Responsibility for Taxes. Participant acknowledges that, regardless of any action taken by the Company or, if different, Participant's employer (the "Employer") or any Parent or Subsidiary to which Participant is providing services (together, the "Service Recipients"), the ultimate liability for any tax and/or social insurance liability obligations and requirements in connection with the Restricted Stock Units, including, without limitation, (i) all federal, state, and local taxes (including the Participant's Federal Insurance Contributions Act (FICA) obligations) that are required to be withheld by any Service Recipient or other payment of tax-related items related to Participant's participation in the Plan and legally applicable to Participant, (ii) the Participant's and, to the extent required by any Service Recipient, the Service Recipient's fringe benefit tax liability, if any, associated with the grant, vesting, or settlement of the Restricted Stock Units or sale of Shares, and (iii) any other Service Recipient taxes the responsibility for which the Participant has, or has agreed to bear, with respect to the Restricted Stock Units (or settlement thereof or issuance of Shares thereunder) (collectively, the "Tax Obligations"), is and remains Participant's sole responsibility and may exceed the amount actually withheld by the applicable Service Recipient(s). Participant further acknowledges that no Service Recipient (A) makes any representations or undertakings regarding the treatment of any Tax Obligations in connection with any aspect of the Restricted Stock Units, including, but not limited to, the grant, vesting or settlement of the Restricted Stock Units, the subsequent sale of Shares acquired pursuant to such settlement and the receipt of any dividends or other distributions, and (B) do not commit to and are under no obligation to structure the terms of the grant or any aspect of the Restricted Stock Units to reduce or eliminate Participant's liability for Tax Obligations or achieve any particular tax result. Further, if Participant is subject to Tax Obligations in more than one jurisdiction between the Date of Grant and the date of any relevant taxable or tax withholding event, as applicable, Participant acknowledges that the applicable Service Recipient(s) (or former employer, as applicable) may be required to withhold or account for Tax Obligations in more than one jurisdiction. If Participant fails to make satisfactory arrangements for the payment of any required Tax Obligations hereunder at the time of the applicable taxable event, Participant acknowledges and agrees that the Company may refuse to issue or deliver the Shares.

(b) Tax Withholding. When Shares are issued as payment for vested Restricted Stock Units, Participant generally will recognize immediate U.S. taxable income if Participant is a U.S. taxpayer. If Participant is a non-U.S. taxpayer, Participant will be subject to applicable taxes in his or her jurisdiction. Pursuant to such procedures as the Administrator may specify from time to time, the applicable Service Recipient(s) shall withhold the amount required to be withheld for the payment of Tax Obligations. The Administrator, in its sole discretion and pursuant to such procedures as it may specify from time to time, may permit Participant to satisfy such Tax Obligations, in whole or in part (without limitation), if permissible by applicable local law, by (i) paying cash in U.S. dollars, (ii) electing to have the Company withhold otherwise deliverable Shares having a fair market value equal to the minimum amount that is necessary to meet the

withholding requirement for such Tax Obligations (or such greater amount as Participant may elect if permitted by the Administrator, if such greater amount would not result in adverse financial accounting consequences), (iii) having the amount of such Tax Obligations withheld from Participant's wages or other cash compensation paid to Participant by the applicable Service Recipient(s), (iv) delivering to the Company already vested and owned Shares having a fair market value equal to such Tax Obligations, or (v) selling a sufficient number of such Shares otherwise deliverable to Participant through such means as the Company may determine in its sole discretion (whether through a broker or otherwise) equal to the minimum amount that is necessary to meet the withholding requirement for such Tax Obligations (or such greater amount as Participant may elect if permitted by the Administrator, if such greater amount would not result in adverse financial accounting consequences). To the extent determined appropriate by the Administrator in its discretion, the Administrator will have the right (but not the obligation) to satisfy any Tax Obligations by reducing the number of Shares otherwise deliverable to Participant. Further, if Participant is subject to tax in more than one jurisdiction between the Date of Grant and a date of any relevant taxable or tax withholding event, as applicable, Participant acknowledges and agrees that the applicable Service Recipient (and/or former employer, as applicable) may be required to withhold or account for tax in more than one jurisdiction. If Participant fails to make satisfactory arrangements for the payment of such Tax Obligations hereunder at the time any applicable Restricted Stock Units otherwise are scheduled to vest pursuant to Sections 3 or 4, Participant will permanently forfeit such Restricted Stock Units and any right to receive Shares thereunder and such Restricted Stock Units will be returned to the Company at no cost to the Company. Participant acknowledges and agrees that the Company may refuse to deliver the Shares if such Tax Obligations are not delivered at the time they are due.

9. Rights as Stockholder. Neither Participant nor any person claiming under or through Participant will have any of the rights or privileges of a stockholder of the Company in respect of any Shares deliverable hereunder unless and until certificates representing such Shares (which may be in book entry form) will have been issued, recorded on the records of the Company or its transfer agents or registrars, and delivered to Participant (including through electronic delivery to a brokerage account). After such issuance, recordation, and delivery, Participant will have all the rights of a stockholder of the Company with respect to voting such Shares and receipt of dividends and distributions on such Shares.

10. No Guarantee of Continued Service. PARTICIPANT ACKNOWLEDGES AND AGREES THAT THE VESTING OF THE RESTRICTED STOCK UNITS PURSUANT TO THE VESTING SCHEDULE HEREOF IS EARNED ONLY BY CONTINUING AS A SERVICE PROVIDER, WHICH UNLESS PROVIDED OTHERWISE UNDER APPLICABLE LAW IS AT THE WILL OF THE APPLICABLE SERVICE RECIPIENT AND NOT THROUGH THE ACT OF BEING HIRED, BEING GRANTED THIS RESTRICTED STOCK UNIT AWARD OR ACQUIRING SHARES HEREUNDER. PARTICIPANT FURTHER ACKNOWLEDGES AND AGREES THAT THIS AWARD AGREEMENT, THE TRANSACTIONS CONTEMPLATED HEREUNDER AND THE VESTING SCHEDULE SET FORTH HEREIN DO NOT CONSTITUTE AN EXPRESS OR IMPLIED PROMISE OF CONTINUED ENGAGEMENT AS A SERVICE PROVIDER FOR THE VESTING PERIOD, FOR ANY PERIOD, OR AT ALL, AND SHALL NOT INTERFERE IN ANY WAY WITH PARTICIPANT'S RIGHT OR THE RIGHT OF ANY SERVICE RECIPIENT TO TERMINATE PARTICIPANT'S RELATIONSHIP AS A SERVICE PROVIDER, SUBJECT TO APPLICABLE LAW, WHICH TERMINATION, UNLESS PROVIDED OTHERWISE UNDER APPLICABLE LAW, MAY BE AT ANY TIME, WITH OR WITHOUT CAUSE.

11. Grant is Not Transferable. Except to the limited extent provided in Section 7, this grant and the rights and privileges conferred hereby will not be transferred, assigned, pledged or hypothecated in any way (whether by operation of law or otherwise) and will not be subject to sale under execution, attachment or similar process. Upon any attempt to transfer, assign, pledge, hypothecate or otherwise dispose of this grant, or any right or privilege conferred hereby, or upon any attempted sale under any execution, attachment or similar process, this grant and the rights and privileges conferred hereby immediately will become null and void.

12. Nature of Grant. In accepting the grant, Participant acknowledges, understands, and agrees that:

(a) the grant of the Restricted Stock Units is voluntary and occasional and does not create any contractual or other right to receive future grants of Restricted Stock Units, or benefits in lieu of Restricted Stock Units, even if Restricted Stock Units have been granted in the past;

(b) all decisions with respect to future Restricted Stock Units or other grants, if any, will be at the sole discretion of the Administrator;

(c) Participant is voluntarily participating in the Plan;

(d) the Restricted Stock Units and the Shares subject to the Restricted Stock Units are not intended to replace any pension rights or compensation;

(e) the Restricted Stock Units and the Shares subject to the Restricted Stock Units, and the income and value of same, are not part of normal or expected compensation for purposes of calculating any severance, resignation, termination, redundancy, dismissal, end-of-service payments, bonuses, long-service awards, pension or retirement or welfare benefits or similar payments;

(f) the future value of the Shares underlying the Restricted Stock Units is unknown, indeterminable and cannot be predicted;

(g) for purposes of the Restricted Stock Units, Participant's status as a Service Provider will be considered terminated as of the date Participant is no longer actively providing services to the Company or any Parent or Subsidiary (regardless of the reason for such termination and whether or not later to be found invalid or in breach of employment laws in the jurisdiction where Participant is a Service Provider or the terms of Participant's employment or service agreement, if any), and unless otherwise expressly provided in this Award Agreement (including by reference in the Notice of Grant to other arrangements or contracts) or determined by the Administrator, Participant's right to vest in the Restricted Stock Units under the Plan, if any, will terminate as of such date and will not be extended by any notice period (e.g., Participant's period

of service would not include any contractual notice period or any period of "garden leave" or similar period mandated under employment laws in the jurisdiction where Participant is a Service Provider or the terms of Participant's employment or service agreement, if any, unless Participant is providing bona fide services during such time); the Administrator shall have the exclusive discretion to determine when Participant is no longer actively providing services for purposes of the Restricted Stock Units grant (including whether Participant may still be considered to be providing services while on a leave of absence and consistent with local law);

(h) unless otherwise provided in the Plan or by the Administrator in its discretion, the Restricted Stock Units and the benefits evidenced by this Award Agreement do not create any entitlement to have the Restricted Stock Units or any such benefits transferred to, or assumed by, another company nor be exchanged, cashed out or substituted for, in connection with any corporate transaction affecting the Shares; and

(i) the following provisions apply only if Participant is providing services outside the United States:

(i) the Restricted Stock Units and the Shares subject to the Restricted Stock Units are not part of normal or expected compensation or salary for any purpose;

(ii) Participant acknowledges and agrees that no Service Recipient shall be liable for any foreign exchange rate fluctuation between Participant's local currency and the United States Dollar that may affect the value of the Restricted Stock Units or of any amounts due to Participant pursuant to the settlement of the Restricted Stock Units or the subsequent sale of any Shares acquired upon settlement; and

(iii) no claim or entitlement to compensation or damages shall arise from forfeiture of the Restricted Stock Units resulting from the termination of Participant's status as a Service Provider (for any reason whatsoever whether or not later found to be invalid or in breach of employment laws in the jurisdiction where Participant is a Service Provider or the terms of Participant's employment or service agreement, if any), and in consideration of the grant of the Restricted Stock Units to which Participant is otherwise not entitled, Participant irrevocably agrees never to institute any claim against any Service Recipient, waives his or her ability, if any, to bring any such claim, and releases each Service Recipient from any such claim; if, notwithstanding the foregoing, any such claim is allowed by a court of competent jurisdiction, then, by participating in the Plan, Participant shall be deemed irrevocably to have agreed not to pursue such claim and agrees to execute any and all documents necessary to request dismissal or withdrawal of such claim.

13. No Advice Regarding Grant. The Company is not providing any tax, legal or financial advice, nor is the Company making any recommendations regarding Participant's participation in the Plan, or Participant's acquisition or sale of the Shares underlying the Restricted Stock Units. Participant is hereby advised to consult with his or her own personal tax, legal and financial advisors regarding his or her participation in the Plan before taking any action related to the Plan.

14. ***Data Privacy*. Participant hereby explicitly and unambiguously consents to the collection, use and transfer, in electronic or other form, of Participant's personal data as described in this Award Agreement and any other Restricted Stock Unit grant materials by and among, as applicable, the Service Recipients for the exclusive purpose of implementing, administering and managing Participant's participation in the Plan.**

Participant understands that the Company and the Service Recipient may hold certain personal information about Participant, including, but not limited to, Participant's name, home address and telephone number, date of birth, social insurance number or other identification number, salary, nationality, job title, any Shares or directorships held in the Company, details of all Restricted Stock Units or any other entitlement to Shares awarded, canceled, exercised, vested, unvested or outstanding in Participant's favor ("Data"), for the exclusive purpose of implementing, administering and managing the Plan.

Participant understands that Data may be transferred to a stock plan service provider, as may be selected by the Company in the future, assisting the Company with the implementation, administration, and management of the Plan. Participant understands that the recipients of the Data may be located in the United States or elsewhere, and that the recipient's country of operation (e.g., the United States) may have different data privacy laws and protections than Participant's country. Participant understands that if he or she resides outside the United States, he or she may request a list with the names and addresses of any potential recipients of the Data by contacting his or her local human resources representative. Participant authorizes the Company and any other possible recipients which may assist the Company (presently or in the future) with implementing, administering and managing the Plan to receive, possess, use, retain and transfer the Data, in electronic or other form, for the sole purposes of implementing, administering and managing Participant's participation in the Plan. Participant understands that Data will be held only as long as is necessary to implement, administer and manage Participant's participation in the Plan. Participant understands that if he or she resides outside the United States, he or she may, at any time, view Data, request additional information about the storage and processing of Data, require any necessary amendments to Data or refuse or withdraw the consents herein, in any case without cost, by contacting in writing his or her local human resources representative. Further, Participant understands that he or she is providing the consents herein on a purely voluntary basis. If Participant does not consent, or if Participant later seeks to revoke his or her consent, his or her engagement as a Service Provider and career with the Service Recipient will not be adversely affected. The only adverse consequence of refusing or withdrawing Participant's consent is that the Company would not be able to grant Participant Restricted Stock Units or other equity awards or administer or maintain such awards. Therefore, Participant understands that refusing or withdrawing his or her consent may affect Participant's ability to participate in the Plan. For more information on the consequences of Participant's refusal to consent or withdrawal of consent, Participant understands that he or she may contact his or her local human resources representative.

15. Address for Notices. Any notice to be given to the Company under the terms of this Option Agreement will be addressed to the Company at IGM Biosciences, Inc., 325 E. Middlefield Road, Mountain View, California 94043, or at such other address as the Company may hereafter designate in writing.

16. Electronic Delivery and Acceptance. The Company may, in its sole discretion, decide to deliver any documents related to the Restricted Stock Units awarded under the Plan or future Restricted Stock Units that may be awarded under the Plan by electronic means or require Participant to participate in the Plan by electronic means. Participant hereby consents to receive such documents by electronic delivery and agrees to participate in the Plan through any on-line or electronic system established and maintained by the Company or a third party designated by the Company.

17. No Waiver. Either party's failure to enforce any provision or provisions of this Award Agreement shall not in any way be construed as a waiver of any such provision or provisions, nor prevent that party from thereafter enforcing each and every other provision of this Award Agreement. The rights granted both parties herein are cumulative and shall not constitute a waiver of either party's right to assert all other legal remedies available to it under the circumstances.

18. Successors and Assigns. The Company may assign any of its rights under this Award Agreement to single or multiple assignees, and this Award Agreement shall inure to the benefit of the successors and assigns of the Company. Subject to the restrictions on transfer herein set forth, this Award Agreement shall be binding upon Participant and his or her heirs, executors, administrators, successors and assigns. The rights and obligations of Participant under this Award Agreement may only be assigned with the prior written consent of the Company.

19. Additional Conditions to Issuance of Stock. If at any time the Company will determine, in its discretion, that the listing, registration, qualification or rule compliance of the Shares upon any securities exchange or under any state, federal or non-U.S. law, the tax code and related regulations or under the rulings or regulations of the United States Securities and Exchange Commission or any other governmental regulatory body or the clearance, consent or approval of the United States Securities and Exchange Commission or any other governmental regulatory authority is necessary or desirable as a condition to the issuance of Shares to Participant (or his or her estate) hereunder, such issuance will not occur unless and until such listing, registration, qualification, rule compliance, clearance, consent or approval will have been completed, effected or obtained free of any conditions not acceptable to the Company. Subject to the terms of the Award Agreement and the Plan, the Company shall not be required to issue any certificate or certificates for Shares hereunder prior to the lapse of such reasonable period of time following the date of vesting of the Restricted Stock Units as the Administrator may establish from time to time for reasons of administrative convenience.

20. Language. If Participant has received this Award Agreement or any other document related to the Plan translated into a language other than English and if the meaning of the translated version is different than the English version, the English version will control.

21. Interpretation. The Administrator will have the power to interpret the Plan and this Award Agreement and to adopt such rules for the administration, interpretation and application of

the Plan as are consistent therewith and to interpret or revoke any such rules (including, but not limited to, the determination of whether or not any Restricted Stock Units have vested). All actions taken and all interpretations and determinations made by the Administrator in good faith will be final and binding upon Participant, the Company and all other interested persons. Neither the Administrator nor any person acting on behalf of the Administrator will be personally liable for any action, determination, or interpretation made in good faith with respect to the Plan or this Award Agreement.

22. Captions. Captions provided herein are for convenience only and are not to serve as a basis for interpretation or construction of this Award Agreement.

23. Amendment, Suspension or Termination of the Plan. By accepting this Award, Participant expressly warrants that he or she has received an Award of Restricted Stock Units under the Plan, and has received, read, and understood a description of the Plan. Participant understands that the Plan is discretionary in nature and may be amended, suspended or terminated by the Administrator at any time.

24. Modifications to the Award Agreement. This Award Agreement constitutes the entire understanding of the parties on the subjects covered. Participant expressly warrants that he or she is not accepting this Award Agreement in reliance on any promises, representations, or inducements other than those contained herein. Modifications to this Award Agreement or the Plan can be made only in an express written contract executed by a duly authorized officer of the Company. Notwithstanding anything to the contrary in the Plan or this Award Agreement, the Company reserves the right to revise this Award Agreement as it deems necessary or advisable, in its sole discretion and without the consent of Participant, to comply with Section 409A or to otherwise avoid imposition of any additional tax or income recognition under Section 409A in connection with this Award of Restricted Stock Units.

25. Governing Law; Venue; Severability. This Award Agreement and the Restricted Stock Units are governed by the internal substantive laws, but not the choice of law rules, of California. For purposes of litigating any dispute that arises under these Restricted Stock Units or this Award Agreement, the parties hereby submit to and consent to the jurisdiction of the State of California, and agree that such litigation will be conducted in the courts of Santa Clara County, California, or the United States federal courts for the Northern District of California, and no other courts, where this Award Agreement is made and/or to be performed. In the event that any provision hereof becomes or is declared by a court of competent jurisdiction to be illegal, unenforceable or void, this Award Agreement shall continue in full force and effect.

26. Entire Agreement. The Plan is incorporated herein by this reference. The Plan and this Award Agreement (including the appendices and exhibits referenced herein) constitute the entire agreement of the parties with respect to the subject matter hereof and supersede in their entirety all prior undertakings and agreements of the Company and Participant with respect to the subject matter hereof, and may not be modified adversely to the Participant’s interest except by means of a writing signed by the Company and Participant.

27. Country Addendum. Notwithstanding any provisions in this Award Agreement, the Restricted Stock Unit grant shall be subject to any special terms and conditions set forth in an appendix (if any) to this Award Agreement for any country whose laws are applicable to Participant and this Award of Restricted Stock Units (as determined by the Administrator in its sole discretion) (the "Country Addendum"). Moreover, if Participant relocates to one of the countries included in the Country Addendum (if any), the special terms and conditions for such country will apply to Participant, to the extent the Company determines that the application of such terms and conditions is necessary or advisable for legal or administrative reasons. The Country Addendum constitutes part of this Award Agreement.

IGM BIOSCIENCES, INC.
AMENDED AND RESTATED 2018 OMNIBUS INCENTIVE PLAN
STOCK OPTION AGREEMENT

Unless otherwise defined herein, the terms defined in the IGM Biosciences, Inc. Amended and Restated 2018 Omnibus Incentive Plan (the "Plan") will have the same defined meanings in this Stock Option Agreement, which includes the Notice of Stock Option Grant (the "Notice of Grant"), the Terms and Conditions of Stock Option Grant attached hereto as Exhibit A, the Exercise Notice attached hereto as Exhibit B, and all other exhibits and appendices attached hereto (all together, the "Option Agreement").

NOTICE OF STOCK OPTION GRANT

Participant:

Address:

The undersigned Participant has been granted an Option to purchase Common Stock of IGM Biosciences, Inc. (the "Company"), subject to the terms and conditions of the Plan and this Option Agreement, as follows:

Grant Number: _____

Date of Grant: _____

Vesting Commencement Date: _____

Number of Shares Granted: _____

Exercise Price per Share (in U.S. Dollars): $ _____

Total Exercise Price (in U.S. Dollars): $ _____

Type of Option: ____ Incentive Stock Option

____ Nonstatutory Stock Option

Term/Expiration Date: _____

Vesting Schedule:

Subject to accelerated vesting as set forth below or in the Plan, this Option will be exercisable, in whole or in part, in accordance with the following schedule:

[25% of the Shares subject to the Option shall vest on the 1 year anniversary of the Vesting Commencement Date, and 1/48th of the Shares subject to the Option shall vest each month thereafter on the same day of the month as the Vesting Commencement Date (and if there is no corresponding day, on the last day of the month), subject to Participant continuing to be a Service Provider through each such date.]

Termination Period:

This Option will be exercisable for 3 months after Participant ceases to be a Service Provider, unless such termination is due to Participant's death or Disability, in which case this Option will be exercisable for 12 months after Participant ceases to be a Service Provider. Notwithstanding the foregoing sentence, in no event may this Option be exercised after the Term/Expiration Date as provided above and this Option may be subject to earlier termination as provided in Section 14 of the Plan.

By Participant's signature and the signature of the representative of the Company below, Participant and the Company agree that this Option is granted under and governed by the terms and conditions of the Plan and this Option Agreement, including the Terms and Conditions of Stock Option Grant, attached hereto as Exhibit A, all of which are made a part of this document. Participant acknowledges receipt of a copy of the Plan. Participant has reviewed the Plan and this Option Agreement in their entirety, has had an opportunity to obtain the advice of counsel prior to executing this Option Agreement, and fully understands all provisions of the Plan and this Option Agreement. Participant hereby agrees to accept as binding, conclusive, and final all decisions or interpretations of the Administrator upon any questions relating to the Plan and the Option Agreement. Participant further agrees to notify the Company upon any change in the residence address indicated below.

PARTICIPANT	IGM BIOSCIENCES, INC.
_____	_____
Signature	Signature
_____	_____
Print Name	Print Name
	_____
	Title

Address:

_____

_____

EXHIBIT A

TERMS AND CONDITIONS OF STOCK OPTION GRANT

1. Grant of Option.

(a) The Company hereby grants to the individual ("Participant") named in the Notice of Stock Option Grant of this Option Agreement (the "Notice of Grant") an option (the "Option") to purchase the number of Shares set forth in the Notice of Grant, at the exercise price per Share set forth in the Notice of Grant (the "Exercise Price"), subject to all of the terms and conditions in this Option Agreement and the Plan, which is incorporated herein by this reference. Subject to Section 18(c) of the Plan, in the event of a conflict between the terms and conditions of the Plan and the terms and conditions of this Option Agreement, the terms and conditions of the Plan will prevail.

(b) For U.S. taxpayers, the Option will be designated as either an Incentive Stock Option ("ISO") or a Nonstatutory Stock Option ("NSO"). If designated in the Notice of Grant as an ISO, this Option is intended to qualify as an ISO under Section 422 of the Internal Revenue Code of 1986, as amended (the "Code"). However, if this Option is intended to be an ISO, to the extent that it exceeds the $100,000 rule of Code Section 422(d) it will be treated as an NSO. Further, if for any reason this Option (or portion thereof) will not qualify as an ISO, then, to the extent of such nonqualification, such Option (or portion thereof) shall be regarded as a NSO granted under the Plan. In no event will the Administrator, the Company or any Parent or Subsidiary or any of their respective employees or directors have any liability to Participant (or any other person) due to the failure of the Option to qualify for any reason as an ISO.

(c) For non-U.S. taxpayers, the Option will be designated as an NSO.

2. Vesting Schedule. Except as provided in Section 3, the Option awarded by this Option Agreement will vest in accordance with the vesting provisions set forth in the Notice of Grant. Shares subject to this Option that are scheduled to vest on a certain date or upon the occurrence of a certain condition will not vest in accordance with any of the provisions of this Option Agreement, unless Participant will have been continuously a Service Provider from the Date of Grant until the date such vesting occurs.

3. Administrator Discretion. The Administrator, in its discretion, may accelerate the vesting of the balance, or some lesser portion of the balance, of the unvested Option at any time, subject to the terms of the Plan. If so accelerated, such Option will be considered as having vested as of the date specified by the Administrator.

4. Exercise of Option.

(a) Right to Exercise. This Option may be exercised only within the term set out in the Notice of Grant, and may be exercised during such term only in accordance with the Plan and the terms of this Option Agreement.

(b) Method of Exercise. This Option is exercisable by delivery of an exercise notice (the "Exercise Notice") in the form attached as Exhibit B to the Notice of Grant or in a manner and pursuant to such procedures as the Administrator may determine, which will state the election to exercise the Option, the number of Shares in respect of which the Option is being exercised (the "Exercised Shares"), and such other representations and agreements as may be required by the Company pursuant to the provisions of the Plan. The Exercise Notice will be completed by Participant and delivered to the Company. The Exercise Notice will be accompanied by payment of the aggregate Exercise Price as to all Exercised Shares and of any Tax Obligations (as defined in Section 6(a)). This Option will be deemed to be exercised upon receipt by the Company of such fully executed Exercise Notice accompanied by the aggregate Exercise Price.

5. Method of Payment. Payment of the aggregate Exercise Price will be by any of the following, or a combination thereof, at the election of Participant:

(a) cash in U.S. dollars;

(b) check designated in U.S. dollars;

(c) consideration received by the Company under a formal cashless exercise program adopted by the Company in connection with the Plan; or

(d) if Participant is a U.S. employee, surrender of other Shares which have a Fair Market Value on the date of surrender equal to the aggregate Exercise Price of the Exercised Shares and that are owned free and clear of any liens, claims, encumbrances, or security interests, provided that accepting such Shares, in the sole discretion of the Administrator, will not result in any adverse accounting consequences to the Company.

6. Tax Obligations.

(a) Responsibility for Taxes. Participant acknowledges that, regardless of any action taken by the Company or, if different, Participant's employer (the "Employer") or any Parent or Subsidiary to which Participant is providing services (together, the "Service Recipients"), the ultimate liability for any tax and/or social insurance liability obligations and requirements in connection with the Option, including, without limitation, (i) all federal, state, and local taxes (including the Participant's Federal Insurance Contributions Act (FICA) obligations) that are required to be withheld by any Service Recipient or other payment of tax-related items related to Participant's participation in the Plan and legally applicable to Participant, (ii) the Participant's and, to the extent required by any Service Recipient, the Service Recipient's fringe benefit tax liability, if

any, associated with the grant, vesting, or exercise of the Option or sale of Shares, and (iii) any other Service Recipient taxes the responsibility for which the Participant has, or has agreed to bear, with respect to the Option (or exercise thereof or issuance of Shares thereunder) (collectively, the "Tax Obligations"), is and remains Participant's sole responsibility and may exceed the amount actually withheld by the applicable Service Recipient(s). Participant further acknowledges that no Service Recipient (A) makes any representations or undertakings regarding the treatment of any Tax Obligations in connection with any aspect of the Option, including, but not limited to, the grant, vesting or exercise of the Option, the subsequent sale of Shares acquired pursuant to such exercise and the receipt of any dividends or other distributions, and (B) do not commit to and are under no obligation to structure the terms of the grant or any aspect of the Option to reduce or eliminate Participant's liability for Tax Obligations or achieve any particular tax result. Further, if Participant is subject to Tax Obligations in more than one jurisdiction between the Date of Grant and the date of any relevant taxable or tax withholding event, as applicable, Participant acknowledges that the applicable Service Recipient(s) (or former employer, as applicable) may be required to withhold or account for Tax Obligations in more than one jurisdiction. If Participant fails to make satisfactory arrangements for the payment of any required Tax Obligations hereunder at the time of the applicable taxable event, Participant acknowledges and agrees that the Company may refuse to issue or deliver the Shares.

(b) Tax Withholding. Pursuant to such procedures as the Administrator may specify from time to time, the applicable Service Recipient(s) shall withhold the amount required to be withheld for the payment of Tax Obligations. The Administrator, in its sole discretion and pursuant to such procedures as it may specify from time to time, may permit Participant to satisfy such Tax Obligations, in whole or in part (without limitation), if permissible by applicable local law, by (i) paying cash in U.S. dollars, (ii) electing to have the Company withhold otherwise deliverable Shares having a fair market value equal to the minimum amount that is necessary to meet the withholding requirement for such Tax Obligations (or such greater amount as Participant may elect if permitted by the Administrator, if such greater amount would not result in adverse financial accounting consequences), (iii) having the amount of such Tax Obligations withheld from Participant's wages or other cash compensation paid to Participant by the applicable Service Recipient(s), (iv) delivering to the Company already vested and owned Shares having a fair market value equal to such Tax Obligations, or (v) selling a sufficient number of such Shares otherwise deliverable to Participant through such means as the Company may determine in its sole discretion (whether through a broker or otherwise) equal to the minimum amount that is necessary to meet the withholding requirement for such Tax Obligations (or such greater amount as Participant may elect if permitted by the Administrator, if such greater amount would not result in adverse financial accounting consequences). To the extent determined appropriate by the Administrator in its discretion, the Administrator will have the right (but not the obligation) to satisfy any Tax Obligations by reducing the number of Shares otherwise deliverable to Participant. Further, if Participant is subject to tax in more than one jurisdiction between the Date of Grant and a date of any relevant taxable or tax withholding event, as applicable, Participant acknowledges and agrees that the applicable Service Recipient(s) (and/or former employer, as applicable) may be required to withhold or account for tax in more than one jurisdiction.

(c) Notice of Disqualifying Disposition of ISO Shares. If the Option is an ISO, and if Participant sells or otherwise disposes of any of the Shares acquired pursuant to the ISO on or before the later of (i) the date 2 years after the Date of Grant, or (ii) the date 1 year after the date of exercise, Participant will immediately notify the Company in writing of such disposition. Participant agrees that Participant may be subject to income tax withholding by the Company on the compensation income recognized by Participant.

(d) Code Section 409A. Under Code Section 409A, a stock right (such as the Option) that vests after December 31, 2004 (or that vested on or prior to such date but which was materially modified after October 3, 2004) that was granted with a per share exercise price that is determined by the Internal Revenue Service (the "IRS") to be less than the fair market value of an underlying share on the date of grant (a "discount option") may be considered "deferred compensation." A stock right that is a "discount option" may result in (i) income recognition by the recipient of the stock right prior to the exercise of the stock right, (ii) an additional 20% federal income tax, and (iii) potential penalty and interest charges. The "discount option" may also result in additional state income, penalty and interest tax to the recipient of the stock right. Participant acknowledges that the Company cannot and has not guaranteed that the IRS will agree that the per Share exercise price of this Option equals or exceeds the fair market value of a Share on the date of grant in a later examination. Participant agrees that if the IRS determines that the Option was granted with a per Share exercise price that was less than the fair market value of a Share on the date of grant, Participant shall be solely responsible for Participant's costs related to such a determination.

7. Rights as Stockholder. Neither Participant nor any person claiming under or through Participant will have any of the rights or privileges of a stockholder of the Company in respect of any Shares deliverable hereunder unless and until certificates representing such Shares (which may be in book entry form) will have been issued, recorded on the records of the Company or its transfer agents or registrars, and delivered to Participant (including through electronic delivery to a brokerage account). After such issuance, recordation, and delivery, Participant will have all the rights of a stockholder of the Company with respect to voting such Shares and receipt of dividends and distributions on such Shares.

8. No Guarantee of Continued Service. PARTICIPANT ACKNOWLEDGES AND AGREES THAT THE VESTING OF SHARES PURSUANT TO THE VESTING SCHEDULE HEREOF IS EARNED ONLY BY CONTINUING AS A SERVICE PROVIDER, WHICH UNLESS PROVIDED OTHERWISE UNDER APPLICABLE LAW IS AT THE WILL OF THE APPLICABLE SERVICE RECIPIENT AND NOT THROUGH THE ACT OF BEING HIRED, BEING GRANTED THIS OPTION OR ACQUIRING SHARES HEREUNDER. PARTICIPANT FURTHER ACKNOWLEDGES AND AGREES THAT THIS OPTION AGREEMENT, THE TRANSACTIONS CONTEMPLATED HEREUNDER AND THE VESTING SCHEDULE SET FORTH HEREIN DO NOT CONSTITUTE AN EXPRESS OR IMPLIED PROMISE OF CONTINUED ENGAGEMENT AS A SERVICE PROVIDER FOR THE VESTING PERIOD, FOR ANY PERIOD, OR AT ALL, AND WILL NOT INTERFERE IN ANY WAY WITH PARTICIPANT'S RIGHT OR THE RIGHT OF ANY SERVICE RECIPIENT TO TERMINATE PARTICIPANT'S RELATIONSHIP AS A SERVICE PROVIDER, SUBJECT TO APPLICABLE LAW, WHICH TERMINATION, UNLESS PROVIDED OTHERWISE UNDER APPLICABLE LAW, MAY BE AT ANY TIME, WITH OR WITHOUT CAUSE.

9. Nature of Grant. In accepting the Option, Participant acknowledges, understands and agrees that:

(a) the grant of the Option is voluntary and occasional and does not create any contractual or other right to receive future grants of options, or benefits in lieu of options, even if options have been granted in the past;

(b) all decisions with respect to future option or other grants, if any, will be at the sole discretion of the Administrator;

(c) Participant is voluntarily participating in the Plan;

(d) the Option and any Shares acquired under the Plan are not intended to replace any pension rights or compensation;

(e) the Option and Shares acquired under the Plan and the income and value of same, are not part of normal or expected compensation for purposes of calculating any severance, resignation, termination, redundancy, dismissal, end-of-service payments, bonuses, long-service awards, pension or retirement or welfare benefits or similar payments;

(f) the future value of the Shares underlying the Option is unknown, indeterminable, and cannot be predicted with certainty;

(g) if the underlying Shares do not increase in value, the Option will have no value;

(h) if Participant exercises the Option and acquires Shares, the value of such Shares may increase or decrease in value, even below the Exercise Price;

(i) for purposes of the Option, Participant's engagement as a Service Provider will be considered terminated as of the date Participant is no longer actively providing services to the Company or any Parent or Subsidiary (regardless of the reason for such termination and whether or not later found to be invalid or in breach of employment laws in the jurisdiction where Participant is a Service Provider or the terms of Participant's employment or service agreement, if any), and unless otherwise expressly provided in this Option Agreement (including by reference in the Notice of Grant to other arrangements or contracts) or determined by the Administrator, (i) Participant's right to vest in the Option under the Plan, if any, will terminate as of such date and will not be extended by any notice period (*e.g.*, Participant's period of service would not include any contractual notice period or any period of "garden leave" or similar period mandated under employment laws in the jurisdiction where Participant is a Service Provider or Participant's employment or service agreement, if any, unless Participant is providing bona fide services during such time); and (ii) the period (if any) during which Participant may exercise the Option after such

termination of Participant's engagement as a Service Provider will commence on the date Participant ceases to actively provide services and will not be extended by any notice period mandated under employment laws in the jurisdiction where Participant is employed or terms of Participant's engagement agreement, if any; the Administrator shall have the exclusive discretion to determine when Participant is no longer actively providing services for purposes of his or her Option grant (including whether Participant may still be considered to be providing services while on a leave of absence and consistent with local law);

(j) unless otherwise provided in the Plan or by the Administrator in its discretion, the Option and the benefits evidenced by this Option Agreement do not create any entitlement to have the Option or any such benefits transferred to, or assumed by, another company nor to be exchanged, cashed out or substituted for, in connection with any corporate transaction affecting the Shares; and

(k) the following provisions apply only if Participant is providing services outside the United States:

(i) the Option and the Shares subject to the Option are not part of normal or expected compensation or salary for any purpose;

(ii) Participant acknowledges and agrees that no Service Recipient shall be liable for any foreign exchange rate fluctuation between Participant's local currency and the United States Dollar that may affect the value of the Option or of any amounts due to Participant pursuant to the exercise of the Option or the subsequent sale of any Shares acquired upon exercise; and

(iii) no claim or entitlement to compensation or damages shall arise from forfeiture of the Option resulting from the termination of Participant's engagement as a Service Provider (for any reason whatsoever, whether or not later found to be invalid or in breach of employment laws in the jurisdiction where Participant is a Service Provider or the terms of Participant's employment or service agreement, if any), and in consideration of the grant of the Option to which Participant is otherwise not entitled, Participant irrevocably agrees never to institute any claim against any Service Recipient, waives his or her ability, if any, to bring any such claim, and releases each Service Recipient from any such claim; if, notwithstanding the foregoing, any such claim is allowed by a court of competent jurisdiction, then, by participating in the Plan, Participant shall be deemed irrevocably to have agreed not to pursue such claim and agrees to execute any and all documents necessary to request dismissal or withdrawal of such claim.

10. No Advice Regarding Grant. The Company is not providing any tax, legal or financial advice, nor is the Company making any recommendations regarding Participant's participation in the Plan, or Participant's acquisition or sale of the Shares underlying the Option. Participant is hereby advised to consult with his or her own personal tax, legal and financial advisors regarding his or her participation in the Plan before taking any action related to the Plan.

11. **Data Privacy**. ***Participant hereby explicitly and unambiguously consents to the collection, use and transfer, in electronic or other form, of Participant's personal data as described in this Option Agreement and any other Option grant materials by and among, as applicable, the Service Recipients for the exclusive purpose of implementing, administering and managing Participant's participation in the Plan.***

Participant understands that the Company and the Service Recipient may hold certain personal information about Participant, including, but not limited to, Participant's name, home address and telephone number, date of birth, social insurance number or other identification number, salary, nationality, job title, any Shares or directorships held in the Company, details of all Options or any other entitlement to Shares awarded, canceled, exercised, vested, unvested or outstanding in Participant's favor ("Data"), for the exclusive purpose of implementing, administering and managing the Plan.

Participant understands that Data may be transferred to a stock plan service provider, as may be selected by the Company in the future, assisting the Company with the implementation, administration, and management of the Plan. Participant understands that the recipients of the Data may be located in the United States or elsewhere, and that the recipient's country of operation (e.g., the United States) may have different data privacy laws and protections than Participant's country. Participant understands that if he or she resides outside the United States, he or she may request a list with the names and addresses of any potential recipients of the Data by contacting his or her local human resources representative. Participant authorizes the Company and any other possible recipients which may assist the Company (presently or in the future) with implementing, administering and managing the Plan to receive, possess, use, retain and transfer the Data, in electronic or other form, for the sole purposes of implementing, administering and managing Participant's participation in the Plan. Participant understands that Data will be held only as long as is necessary to implement, administer and manage Participant's participation in the Plan. Participant understands that if he or she resides outside the United States, he or she may, at any time, view Data, request additional information about the storage and processing of Data, require any necessary amendments to Data or refuse or withdraw the consents herein, in any case without cost, by contacting in writing his or her local human resources representative. Further, Participant understands that he or she is providing the consents herein on a purely voluntary basis. If Participant does not consent, or if Participant later seeks to revoke his or her consent, his or her engagement as a Service Provider and career with the Service Recipient will not be adversely affected. The only adverse consequence of refusing or withdrawing Participant's consent is that the Company would not be able to grant Participant Options or other equity awards or administer or maintain such awards. Therefore, Participant understands that refusing or withdrawing his or her consent may affect Participant's ability to participate in the Plan. For more information on the consequences of Participant's refusal to consent or withdrawal of consent, Participant understands that he or she may contact his or her local human resources representative.

12. Address for Notices. Any notice to be given to the Company under the terms of this Option Agreement will be addressed to the Company at IGM Biosciences, Inc., 325 E. Middlefield Road, Mountain View, California 94043, or at such other address as the Company may hereafter designate in writing.

13. Non-Transferability of Option. This Option may not be transferred in any manner otherwise than by will or by the laws of descent or distribution and may be exercised during the lifetime of Participant only by Participant.

14. Successors and Assigns. The Company may assign any of its rights under this Option Agreement to single or multiple assignees, and this Option Agreement shall inure to the benefit of the successors and assigns of the Company. Subject to the restrictions on transfer herein set forth, this Option Agreement shall be binding upon Participant and his or her heirs, executors, administrators, successors and assigns. The rights and obligations of Participant under this Option Agreement may only be assigned with the prior written consent of the Company.

15. Additional Conditions to Issuance of Stock. If at any time the Company will determine, in its discretion, that the listing, registration, qualification or rule compliance of the Shares upon any securities exchange or under any state, federal or non-U.S. law, the tax code and related regulations or under the rulings or regulations of the United States Securities and Exchange Commission or any other governmental regulatory body or the clearance, consent or approval of the United States Securities and Exchange Commission or any other governmental regulatory authority is necessary or desirable as a condition to the purchase by, or issuance of Shares, to Participant (or his or her estate) hereunder, such purchase or issuance will not occur unless and until such listing, registration, qualification, rule compliance, clearance, consent or approval will have been completed, effected or obtained free of any conditions not acceptable to the Company. Subject to the terms of the Option Agreement and the Plan, the Company shall not be required to issue any certificate or certificates for Shares hereunder prior to the lapse of such reasonable period of time following the date of exercise of the Option as the Administrator may establish from time to time for reasons of administrative convenience.

16. Language. If Participant has received this Option Agreement or any other document related to the Plan translated into a language other than English and if the meaning of the translated version is different than the English version, the English version will control.

17. Interpretation. The Administrator will have the power to interpret the Plan and this Option Agreement and to adopt such rules for the administration, interpretation and application of the Plan as are consistent therewith and to interpret or revoke any such rules (including, but not limited to, the determination of whether or not any Shares subject to the Option have vested). All actions taken and all interpretations and determinations made by the Administrator in good faith will be final and binding upon Participant, the Company and all other interested persons. Neither the Administrator nor any person acting on behalf of the Administrator will be personally liable for any action, determination, or interpretation made in good faith with respect to the Plan or this Option Agreement.

18. Electronic Delivery and Acceptance. The Company may, in its sole discretion, decide to deliver any documents related to the Option awarded under the Plan or future options that may be awarded under the Plan by electronic means or require Participant to participate in the Plan by electronic means. Participant hereby consents to receive such documents by electronic delivery and agrees to participate in the Plan through any online or electronic system established and maintained by the Company or a third party designated by the Company.

19. Captions. Captions provided herein are for convenience only and are not to serve as a basis for interpretation or construction of this Option Agreement.

20. Option Agreement Severable. In the event that any provision in this Option Agreement will be held invalid or unenforceable, such provision will be severable from, and such invalidity or unenforceability will not be construed to have any effect on, the remaining provisions of this Option Agreement.

21. Amendment, Suspension or Termination of the Plan. By accepting this Option, Participant expressly warrants that he or she has received an Option under the Plan, and has received, read, and understood a description of the Plan. Participant understands that the Plan is discretionary in nature and may be amended, suspended or terminated by the Administrator at any time.

22. Governing Law and Venue. This Option Agreement will be governed by the laws of California, without giving effect to the conflict of law principles thereof. For purposes of litigating any dispute that arises under this Option or this Option Agreement, the parties hereby submit to and consent to the jurisdiction of the State of California, and agree that such litigation will be conducted in the courts of Santa Clara County, California, or the United States federal courts for the Northern District of California, and no other courts, where this Option is made and/or to be performed.

23. Country Addendum. Notwithstanding any provisions in this Option Agreement, this Option shall be subject to any special terms and conditions set forth in an appendix (if any) to this Option Agreement for any country whose laws are applicable to Participant and this Option (as determined by the Administrator in its sole discretion) (the “Country Addendum”). Moreover, if Participant relocates to one of the countries included in the Country Addendum (if any), the special terms and conditions for such country will apply to Participant, to the extent the Company determines that the application of such terms and conditions is necessary or advisable for legal or administrative reasons. The Country Addendum (if any) constitutes a part of this Option Agreement.

24. Modifications to the Option Agreement. This Option Agreement constitutes the entire understanding of the parties on the subjects covered. Participant expressly warrants that he or she is not accepting this Option Agreement in reliance on any promises, representations, or inducements other than those contained herein. Modifications to this Option Agreement or the Plan can be made only in an express written contract executed by a duly authorized officer of the

Company. Notwithstanding anything to the contrary in the Plan or this Option Agreement, the Company reserves the right to revise this Option Agreement as it deems necessary or advisable, in its sole discretion and without the consent of Participant, to comply with Code Section 409A or to otherwise avoid imposition of any additional tax or income recognition under Section 409A of the Code in connection with the Option.

25. No Waiver. Either party's failure to enforce any provision or provisions of this Option Agreement shall not in any way be construed as a waiver of any such provision or provisions, nor prevent that party from thereafter enforcing each and every other provision of this Option Agreement. The rights granted both parties herein are cumulative and shall not constitute a waiver of either party's right to assert all other legal remedies available to it under the circumstances.

26. Tax Consequences. Participant has reviewed with his or her own tax advisors the U.S. federal, state, local and non-U.S. tax consequences of this investment and the transactions contemplated by this Option Agreement. With respect to such matters, Participant relies solely on such advisors and not on any statements or representations of the Company or any of its agents, written or oral. Participant understands that Participant (and not the Company) shall be responsible for Participant's own tax liability that may arise as a result of this investment or the transactions contemplated by this Option Agreement.

EXHIBIT B

IGM BIOSCIENCES, INC.
AMENDED AND RESTATED 2018 OMNIBUS INCENTIVE PLAN

EXERCISE NOTICE

IGM Biosciences, Inc.
325 E. Middlefield Road
Mountain View, CA 94043

Attention: Stock Administration

1. Exercise of Option. Effective as of today, _____, _____, the undersigned ("Purchaser") hereby elects to purchase _____ shares (the "Shares") of the Common Stock of IGM Biosciences, Inc. (the "Company") under and pursuant to the Amended and Restated 2018 Omnibus Incentive Plan (the "Plan") and the Stock Option Agreement, dated _____ and including the Notice of Grant, the Terms and Conditions of Stock Option Grant, and exhibits attached thereto (the "Option Agreement"). The purchase price for the Shares will be $_____, as required by the Option Agreement.

2. Delivery of Payment. Purchaser herewith delivers to the Company the full purchase price of the Shares and any Tax Obligations (as defined in Section 6(a) of the Option Agreement) to be paid in connection with the exercise of the Option.

3. Representations of Purchaser. Purchaser acknowledges that Purchaser has received, read and understood the Plan and the Option Agreement and agrees to abide by and be bound by their terms and conditions.

4. Rights as Stockholder. Until the issuance (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company) of the Shares, no right to vote or receive dividends or any other rights as a stockholder will exist with respect to the Shares subject to the Option, notwithstanding the exercise of the Option. The Shares so acquired will be issued to Purchaser as soon as practicable after exercise of the Option. No adjustment will be made for a dividend or other right for which the record date is prior to the date of issuance, except as provided in Section 14 of the Plan.

5. Tax Consultation. Purchaser understands that Purchaser may suffer adverse tax consequences as a result of Purchaser's purchase or disposition of the Shares. Purchaser represents that Purchaser has consulted with any tax consultants Purchaser deems advisable in connection with the purchase or disposition of the Shares and that Purchaser is not relying on the Company for any tax advice.

6. Entire Agreement; Governing Law. The Plan and Option Agreement are incorporated herein by this reference. This Exercise Notice, the Plan and the Option Agreement constitute the entire agreement of the parties with respect to the subject matter hereof and supersede in their entirety all prior undertakings and agreements of the Company and Purchaser with respect to the subject matter hereof, and may not be modified adversely to the Purchaser's interest except by means of a writing signed by the Company and Purchaser. This Option Agreement is governed by the internal substantive laws, but not the choice of law rules, of California.

Submitted by:

PURCHASER

_____
Signature

_____
Print Name

Address:

_____

_____

Accepted by:

IGM BIOSCIENCES, INC.

_____
Signature

_____
Print Name

_____
Title

_____
Date Received

IGM BIOSCIENCES, INC.

2019 EMPLOYEE STOCK PURCHASE PLAN

1. Purpose. The purpose of the Plan is to provide employees of the Company and its Designated Companies with an opportunity to purchase Common Stock through accumulated Contributions. The Company intends for the Plan to have two components: a component that is intended to qualify as an "employee stock purchase plan" under Section 423 of the Code (the "423 Component") and a component that is not intended to qualify as an "employee stock purchase plan" under Section 423 of the Code (the "Non-423 Component"). The provisions of the 423 Component, accordingly, will be construed so as to extend and limit Plan participation in a uniform and nondiscriminatory basis consistent with the requirements of Section 423 of the Code. An option to purchase shares of Common Stock under the Non-423 Component will be granted pursuant to rules, procedures, or sub-plans adopted by the Administrator designed to achieve tax, securities laws, or other objectives for Eligible Employees and the Company. Except as otherwise provided herein, the Non-423 Component will operate and be administered in the same manner as the 423 Component.

2. Definitions.

(a) "Administrator" means the Board or any Committee designated by the Board to administer the Plan pursuant to Section 14.

(b) "Affiliate" means any entity, other than a Subsidiary, in which the Company has an equity or other ownership interest.

(c) "Applicable Laws" means the requirements relating to the administration of equity-based awards under U.S. state corporate laws, U.S. federal and state securities laws, the Code, any stock exchange or quotation system on which the Common Stock is listed or quoted and the applicable laws of any non-U.S. country or jurisdiction where options are, or will be, granted under the Plan.

(d) "Board" means the Board of Directors of the Company.

(e) "Change in Control" means the occurrence of any of the following events:

(i) A change in the ownership of the Company which occurs on the date that any one person, or more than one person acting as a group ("Person"), acquires ownership of the stock of the Company that, together with the stock held by such Person, constitutes more than 50% of the total voting power of the stock of the Company; provided, however, that for purposes of this subsection, the acquisition of additional stock by any one Person, who is considered to own more than 50% of the total voting power of the stock of the Company will not be considered a Change in Control. Further, if the stockholders of the Company immediately before such change in ownership continue to retain immediately after the change in ownership, in substantially the same proportions as their ownership of shares of the Company's voting stock immediately prior to the change in ownership, direct or indirect beneficial ownership of 50% or more of the total voting power of the stock of the Company or of the ultimate parent entity of the Company, such event shall not be considered a Change in Control under this subsection (i). For this purpose, indirect beneficial ownership shall include, without limitation, an interest resulting from ownership of the voting securities of one or more corporations or other business entities which own the Company, as the case may be, either directly or through one or more subsidiary corporations or other business entities; or

(ii) A change in the effective control of the Company which occurs on the date that a majority of members of the Board is replaced during any 12-month period by Directors whose appointment or election is not endorsed by a majority of the members of the Board prior to the date of the appointment or election. For purposes of this subsection (ii), if any Person is considered to be in effective control of the Company, the acquisition of additional control of the Company by the same Person will not be considered a Change in Control; or

(iii) A change in the ownership of a substantial portion of the Company's assets which occurs on the date that any Person acquires (or has acquired during the twelve (12)-month period ending on the date of the most recent acquisition by such Person) assets from the Company that have a total gross fair market value equal to or more than 50% of the total gross fair market value of all of the assets of the Company immediately prior to such acquisition or acquisitions; provided, however, that for purposes of this subsection, the following will not constitute a change in the ownership of a substantial portion of the Company's assets: (A) a transfer to an entity that is controlled by the Company's stockholders immediately after the transfer, or (B) a transfer of assets by the Company to: (1) a stockholder of the Company (immediately before the asset transfer) in exchange for or with respect to the Company's stock, (2) an entity, 50% or more of the total value or voting power of which is owned, directly or indirectly, by the Company, (3) a Person, that owns, directly or indirectly, 50% or more of the total value or voting power of all the outstanding stock of the Company, or (4) an entity, at least 50% of the total value or voting power of which is owned, directly or indirectly, by a Person described in this subsection (iii)(B)(3). For purposes of this subsection, gross fair market value means the value of the assets of the Company, or the value of the assets being disposed of, determined without regard to any liabilities associated with such assets.

For purposes of this definition, persons will be considered to be acting as a group if they are owners of a corporation that enters into a merger, consolidation, purchase, or acquisition of stock, or similar business transaction with the Company.

Notwithstanding the foregoing, a transaction will not be deemed a Change in Control unless the transaction qualifies as a change in control event within the meaning of Code Section 409A, as it has been and may be amended from time to time, and any proposed or final U.S. Treasury Regulations and Internal Revenue Service guidance that has been promulgated or may be promulgated thereunder from time to time.

Further and for the avoidance of doubt, a transaction will not constitute a Change in Control if: (i) its sole purpose is to change the jurisdiction of the Company's incorporation, or (ii) its sole purpose is to create a holding company that will be owned in substantially the same proportions by the persons who held the Company's securities immediately before such transaction.

(f) "Code" means the U.S. Internal Revenue Code of 1986, as amended. Reference to a specific section of the Code will include such section, any valid regulation or other official applicable guidance promulgated under such section, and any comparable provision of any future legislation or regulation amending, supplementing or superseding such section or regulation.

(g) "Committee" means a committee of the Board appointed in accordance with Section 14 hereof.

(h) "Common Stock" means the common stock of the Company.

(i) "Company" means IGM Biosciences, Inc., a Delaware corporation, or any successor thereto.

(j) "Compensation" includes an Eligible Employee's base straight time gross earnings but excludes payments for incentive compensation, bonuses, payments for overtime and shift premium, equity compensation income and other similar compensation. The Administrator, in its discretion, may, on a uniform and nondiscriminatory basis, establish a different definition of Compensation for a subsequent Offering Period.

(k) "Contributions" means the payroll deductions and other additional payments that the Company may permit to be made by a Participant to fund the exercise of options granted pursuant to the Plan.

(l) "Designated Company" means any Subsidiary or Affiliate that has been designated by the Administrator from time to time in its sole discretion as eligible to participate in the Plan. For purposes of the 423 Component, only the Company and its Subsidiaries may be Designated Companies, provided, however that at any given time, a Subsidiary that is a Designated Company under the 423 Component will not be a Designated Company under the Non-423 Component.

(m) "Director" means a member of the Board.

(n) "Eligible Employee" means any individual who is a common law employee providing services to the Company or a Designated Company and is customarily employed for at least 20 hours per week and more than 5 months in any calendar year by the Employer, or any lesser number of hours per week and/or number of months in any calendar year established by the Administrator (if required under Applicable Laws) for purposes of any separate Offering or the Non-423 Component. For purposes of the Plan, the employment relationship will be treated as continuing intact while the individual is on sick leave or other leave of absence that the Employer approves or is legally protected under Applicable Laws. Where the period of leave exceeds 3 months and the individual's right to reemployment is not guaranteed either by statute or by contract, the employment relationship will be deemed to have terminated 3 months and 1 day following the commencement of such leave. The Administrator, in its discretion, from time to time may, prior to an Enrollment Date for all options to be granted on such Enrollment Date in an Offering, determine (for each Offering under the 423 Component on a uniform and nondiscriminatory basis or as otherwise permitted by Treasury Regulation Section 1.423-2) that the definition of Eligible Employee will or will not include an individual if he or she: (i) has not completed at least 2 years of service since his or her last hire date (or such lesser period of time as may be determined by the Administrator in its discretion), (ii) customarily works not more than 20 hours per week (or such lesser period of time as may be determined by the Administrator in its discretion), (iii) customarily works not more than 5 months per calendar year (or such lesser period of time as may be determined by the Administrator in its discretion), (iv) is a highly compensated employee within the meaning of Section 414(q) of the Code, or (v) is a highly compensated employee within the meaning of Section 414(q) of the Code with compensation above a certain level or is an officer or subject to the disclosure requirements of Section 16(a) of the Exchange Act, provided the

exclusion is applied with respect to each Offering under the 423 Component in an identical manner to all highly compensated individuals of the Employer whose Eligible Employees are participating in that Offering. Each exclusion will be applied with respect to an Offering under the 423 Component in a manner complying with U.S. Treasury Regulation Section 1.423-2(e)(2)(ii). Such exclusions may be applied with respect to an Offering under the Non-423 Component without regard to the limitations of U.S. Treasury Regulation Section 1.423-2.

(o) "Employer" means the employer of the applicable Eligible Employee(s).

(p) "Enrollment Date" means the first Trading Day of an Offering Period.

(q) "Exchange Act" means the U.S. Securities Exchange Act of 1934, as amended, including the rules and regulations promulgated thereunder.

(r) "Exercise Date" means the last Trading Day of the Purchase Period. Notwithstanding the foregoing, in the event that an Offering Period is terminated prior to its expiration pursuant to Section 20(a), the Administrator, in its sole discretion, may determine that any Purchase Period also terminating under such Offering Period will terminate without options being exercised on the Exercise Date that otherwise would have occurred on the last Trading Day of such Purchase Period.

(s) "Fair Market Value" means, as of any date, the value of a share of Common Stock determined as follows:

(i) For purposes of the Enrollment Date of the first Offering Period under the Plan, the Fair Market Value will be the initial price to the public as set forth in the final prospectus included within the Registration Statement.

(ii) For all other purposes, the Fair Market Value will be the closing sales price for Common Stock as quoted on any established stock exchange or national market system (including without limitation the New York Stock Exchange, Nasdaq Global Select Market, the Nasdaq Global Market or the Nasdaq Capital Market of The Nasdaq Stock Market) on which the Common Stock is listed on the date of determination (or the closing bid, if no sales were reported), as reported in *The Wall Street Journal* or such other source as the Administrator deems reliable. If the determination date for the Fair Market Value occurs on a non-trading day (i.e., a weekend or holiday), the Fair Market Value will be such price on the immediately preceding trading day, unless otherwise determined by the Administrator. In the absence of an established market for the Common Stock, the Fair Market Value thereof will be determined in good faith by the Administrator.

The determination of fair market value for purposes of tax withholding may be made in the Administrator's discretion subject to Applicable Laws and is not required to be consistent with the determination of Fair Market Value for other purposes.

(iii) In the absence of an established market for the Common Stock, the Fair Market Value thereof will be determined in good faith by the Administrator; or

(iv) For purposes of the Enrollment Date of the first Offering Period under the Plan, the Fair Market Value will be the initial price to the public as set forth in the final prospectus included within the Registration Statement.

(t) "Fiscal Year" means the fiscal year of the Company.

(u) "New Exercise Date" means a new Exercise Date if the Administrator shortens any Offering Period then in progress.

(v) "Offering" means an offer under the Plan of an option that may be exercised during an Offering Period as further described in Section 4. For purposes of the Plan, the Administrator may designate separate Offerings under the Plan (the terms of which need not be identical) in which Eligible Employees of one or more Employers will participate, even if the dates of the applicable Offering Periods of each such Offering are identical and the provisions of the Plan will separately apply to each Offering. To the extent permitted by U.S. Treasury Regulation Section 1.423-2(a)(1), the terms of each Offering need not be identical provided that the terms of the Plan and an Offering together satisfy U.S. Treasury Regulation Section 1.423-2(a)(2) and (a)(3).

(w) "Offering Periods" means the consecutive periods of approximately six (6) months during which an option granted pursuant to the Plan may be exercised, commencing on the first Trading Day on or after May 15th and November 15th of each year and terminating on the last Trading Day on or before May 15th and November 15th, approximately six (6) months later; provided, however, that the first Offering Period under the Plan will commence with the first Trading Day on or after the date on which the Securities and Exchange Commission declares the Company's Registration Statement effective and will end on the last Trading Day on or before May 15, 2020, and provided, further, that the second Offering Period under the Plan will commence on the first Trading Day on or after May 15, 2020. The duration and timing of Offering Periods may be changed pursuant to Sections 4, 20 and 30.

(x) "Parent" means a "parent corporation," whether now or hereafter existing, as defined in Section 424(e) of the Code.

(y) "Participant" means an Eligible Employee that participates in the Plan.

(z) "Plan" means this IGM Biosciences, Inc. 2019 Employee Stock Purchase Plan.

(aa) "Purchase Period" means the approximately six (6) month period commencing after one Exercise Date and ending with the next Exercise Date, except that the first Purchase Period of any Offering Period will commence on the Enrollment Date and end with the next Exercise Date. Unless the Administrator provides otherwise, the Purchase Period will have the same duration and coincide with the length of the Offering Period.

(bb) "Purchase Price" means an amount equal to 85% of the Fair Market Value on the Enrollment Date or on the Exercise Date, whichever is lower; provided however, that the Purchase Price may be determined for subsequent Offering Periods by the Administrator subject to compliance with Section 423 of the Code (or any successor rule or provision or any other Applicable Law, regulation or stock exchange rule) or pursuant to Section 20.

(cc) "Registration Date" means the effective date of the Registration Statement.

(dd) "Registration Statement" means the registration statement on Form S-1 filed with the Securities and Exchange Commission for the initial public offering of the Common Stock.

(ee) "Subsidiary" means a "subsidiary corporation," whether now or hereafter existing, as defined in Section 424(f) of the Code.

(ff) "Trading Day" means a day on which the national stock exchange upon which the Common Stock is listed is open for trading.

(gg) "U.S. Treasury Regulations" means the Treasury regulations of the Code. Reference to a specific Treasury Regulation will include such Treasury Regulation, the section of the Code under which such regulation was promulgated, and any comparable provision of any future legislation or regulation amending, supplementing, or superseding such Section or regulation.

3. Eligibility.

(a) First Offering Period. Any individual who is an Eligible Employee immediately prior to the first Offering Period will be automatically enrolled in the first Offering Period.

(b) Subsequent Offering Periods. Any Eligible Employee on a given Enrollment Date subsequent to the first Offering Period will be eligible to participate in the Plan, subject to the requirements of Section 5.

(c) Non-U.S. Employees. Eligible Employees who are citizens or residents of a non-U.S. jurisdiction (without regard to whether they also are citizens or residents of the United States or resident aliens (within the meaning of Section 7701(b)(1)(A) of the Code)) may be excluded from participation in the Plan or an Offering if the participation of such Eligible Employees is prohibited under the laws of the applicable jurisdiction or if complying with the laws of the applicable jurisdiction would cause the Plan or an Offering to violate Section 423 of the Code. In the case of the Non-423 Component, Eligible Employees may be excluded from participation in the Plan or an Offering if the Administrator determines that participation of such Eligible Employees is not advisable or practicable.

(d) Limitations. Any provisions of the Plan to the contrary notwithstanding, no Eligible Employee will be granted an option under the Plan (i) to the extent that, immediately after the grant, such Eligible Employee (or any other person whose stock would be attributed to such Eligible Employee pursuant to Section 424(d) of the Code) would own capital stock of the Company or any Parent or Subsidiary of the Company and/or hold outstanding options to purchase such stock possessing 5% or more of the total combined voting power or value of all classes of the capital stock of the Company or of any Parent or Subsidiary of the Company, or (ii) to the extent that his or her rights to purchase stock under all employee stock purchase plans (as defined in Section 423 of the Code) of the Company or any Parent or Subsidiary of the Company accrues at a rate, which exceeds $25,000 worth of stock (determined at the Fair Market Value of the stock at the time such option is granted) for each calendar year in which such option is outstanding at any time, as determined in accordance with Section 423 of the Code and the regulations thereunder.

4. Offering Periods. The Plan will be implemented by consecutive Offering Periods with a new Offering Period commencing on the first Trading Day on or after May 15th and November 15th each year, or on such other dates as the Administrator will determine; provided, however, that the first Offering Period under the Plan will commence with the first Trading Day on or after the Registration Date and end on the last Trading Day on or before May 15, 2020, and provided, further, that the second Offering Period under the Plan will commence on the first Trading Day on or after May 15, 2020. The Administrator will have the power to change the duration of Offering Periods (including the commencement dates thereof) with respect to future Offerings without stockholder approval if such change is announced prior to the scheduled beginning of the first Offering Period to be affected thereafter; provided, however, that no Offering Period may last more than 27 months.

5. Participation.

(a) First Offering Period. An Eligible Employee will be entitled to continue to participate in the first Offering Period pursuant to Section 3(a) only if such individual submits a subscription agreement authorizing Contributions in a form determined by the Administrator (which may be similar to the form attached hereto as Exhibit A) to the Company's stock administration office (i) no earlier than the effective date of the Form S-8 registration statement with respect to the issuance of Common Stock under this Plan and (ii) no later than the first business day on or before the 10th calendar day following the effective date of such Form S-8 registration statement or such other date as the Administrator may determine (the "Enrollment Window"). An Eligible Employee's failure to submit the subscription agreement during the Enrollment Window will result in the automatic termination of such individual's participation in the first Offering Period.

(b) Subsequent Offering Periods. An Eligible Employee may participate in the Plan pursuant to Section 3(b) by (i) submitting to the Company's stock administration office (or its designee) a properly completed subscription agreement authorizing Contributions in the form provided by the Administrator for such purpose or (ii) following an electronic or other enrollment procedure determined by the Administrator, in either case on or before a date determined by the Administrator prior to an applicable Enrollment Date.

6. Contributions.

(a) At the time a Participant enrolls in the Plan pursuant to Section 5, he or she will elect to have Contributions (in the form of payroll deductions or otherwise, to the extent permitted by the Administrator) made on each pay day during the Offering Period in an amount not exceeding 15% of the Compensation that he or she receives on the pay day (for illustrative purposes, should a pay day occur on an Exercise Date, a Participant will have any Contributions made on such day applied to his or her account under the subsequent Purchase Period or Offering Period). The Administrator, in its sole discretion, may permit all Participants in a specified Offering to contribute amounts to the Plan through payment by cash, check or other means set forth in the subscription agreement prior to each Exercise Date of each Purchase Period. A Participant's subscription agreement will remain in effect for successive Offering Periods unless terminated as provided in Section 10 hereof.

(b) In the event Contributions are made in the form of payroll deductions, such payroll deductions for a Participant will commence on the first pay day following the Enrollment Date and will end on the last pay day on or prior to the last Exercise Date of such Offering Period to which such authorization is applicable, unless sooner terminated by the Participant as provided in Section 10 hereof; provided, however, that for the first Offering Period, payroll deductions will commence on the first pay day on or following the end of the Enrollment Window.

(c) All Contributions made for a Participant will be credited to his or her account under the Plan and Contributions will be made in whole percentages of his or her Compensation only. A Participant may not make any additional payments into such account.

(d) A Participant may discontinue his or her participation in the Plan as provided under Section 10. Unless otherwise determined by the Administrator, during a Purchase Period, a Participant may not increase the rate of his or her Contributions and may only decrease the rate of his or her Contributions one 1 time and such decrease must be to a Contribution rate of 0%. Any such decrease during a Purchase Period requires the Participant (i) properly completing and submitting to the Company's stock administration office (or its designee) a new subscription agreement authorizing the change in Contribution rate in the form provided by the Administrator for such purpose or (ii) following an electronic or other procedure prescribed by the Administrator, in either case on or before a date determined by the Administrator prior to an applicable Exercise Date. If a Participant has not followed such procedures to change the rate of Contributions, the rate of his or her Contributions will continue at the originally elected rate throughout the Purchase Period and future Offering Periods and Purchase Periods (unless the Participant's participation is terminated as provided in Sections 10 or 11). The Administrator may, in its sole discretion, amend the nature and/or number of Contribution rate changes that may be made by Participants during any Offering Period or Purchase Period and may establish other conditions or limitations as it deems appropriate for Plan administration. Any change in the rate of Contributions made pursuant to this Section 6(d) will be effective as of the first full payroll period following 5 business days after the date on which the change is made by the Participant (unless the Administrator, in its sole discretion, elects to process a given change in payroll deduction rate earlier).

(e) Notwithstanding the foregoing, to the extent necessary to comply with Section 423(b)(8) of the Code and Section 3(d), a Participant's Contributions may be decreased to zero percent (0%) at any time during a Purchase Period. Subject to Section 423(b)(8) of the Code and Section 3(d) hereof, Contributions will recommence at the rate originally elected by the Participant effective as of the beginning of the first Purchase Period scheduled to end in the following calendar year, unless terminated by the Participant as provided in Section 10.

(f) Notwithstanding any provisions to the contrary in the Plan, the Administrator may allow Participants to participate in the Plan via cash contributions instead of payroll deductions if (i) payroll deductions are not permitted under Applicable Laws, (ii) the Administrator determines that cash contributions are permissible under Section 423 of the Code; or (iii) the Participants are participating in the Non-423 Component.

(g) At the time the option is exercised, in whole or in part, or at the time some or all of the Common Stock issued under the Plan is disposed of (or at any other time that a taxable event related to the Plan occurs), the Participant must make adequate provision for the Company's or Employer's federal, state, local or any other tax liability payable to any authority including taxes imposed by jurisdictions outside of the U.S., national insurance, social security or other tax withholding obligations, if any, which arise upon the exercise of the option or the disposition of the Common Stock (or any other time that a taxable event related to the Plan occurs). At any time, the Company or the Employer may, but will not be obligated to, withhold from the Participant's compensation the amount necessary for the Company or the Employer to meet applicable withholding obligations, including any withholding required to make available to the Company or the Employer any tax deductions or benefits attributable to the sale or early disposition of Common Stock by the Eligible Employee. In addition, the Company or the Employer may, but will not be obligated to, withhold from the proceeds of the sale of Common Stock or use any other method of withholding the Company or the Employer deems appropriate to the extent permitted by U.S. Treasury Regulation Section 1.423-2(f).

7. Grant of Option. On the Enrollment Date of each Offering Period, each Eligible Employee participating in such Offering Period will be granted an option to purchase on each Exercise Date during such Offering Period (at the applicable Purchase Price) up to a number of shares of Common Stock determined by dividing such Eligible Employee's Contributions accumulated prior to such Exercise Date and retained in the Eligible Employee's account as of the Exercise Date by the applicable Purchase Price; provided that in no event will an Eligible Employee be permitted to purchase during each Purchase Period more than 3,000 shares of Common Stock (subject to any adjustment pursuant to Section 19) and provided further that such purchase will be subject to the limitations set forth in Sections 3(d) and 13 and in the subscription agreement. The Eligible Employee may accept the grant of such option (i) with respect to the first Offering Period by submitting a properly completed subscription agreement in accordance with the requirements of Section 5 on or before the last day of the Enrollment Window, and (ii) with respect to any subsequent Offering Period under the Plan, by electing to participate in the Plan in accordance with the requirements of Section 5. The Administrator may, for future Offering Periods, increase or decrease, in its absolute discretion, the maximum number of shares of Common Stock that an Eligible Employee may purchase during each Purchase Period. Exercise of the option will occur as provided in Section 8, unless the Participant has withdrawn pursuant to Section 10. The option will expire on the last day of the Offering Period.

8. Exercise of Option.

(a) Unless a Participant withdraws from the Plan as provided in Section 10, his or her option for the purchase of shares of Common Stock will be exercised automatically on each Exercise Date, and the maximum number of full shares subject to the option will be purchased for such Participant at the applicable Purchase Price with the accumulated Contributions from his or her account. No fractional shares of Common Stock will be purchased; any Contributions accumulated in a Participant's account, which are not sufficient to purchase a full share will be retained in the Participant's account for the subsequent Purchase Period or Offering Period, as applicable, subject to earlier withdrawal by the Participant as provided in Section 10. Any other funds left over in a Participant's account after the Exercise Date will be returned to the Participant. During a Participant's lifetime, a Participant's option to purchase shares of Common Stock hereunder is exercisable only by him or her.

(b) If the Administrator determines that, on a given Exercise Date, the number of shares of Common Stock with respect to which options are to be exercised may exceed (i) the number of shares of Common Stock that were available for sale under the Plan on the Enrollment Date of the applicable Offering Period, or (ii) the number of shares of Common Stock available for sale under the Plan on such Exercise Date, the Administrator may in its sole discretion (x) provide that the Company will make a pro rata allocation of the shares of Common Stock available for purchase on such Enrollment Date or Exercise Date, as applicable, in as uniform a manner as will be practicable and as it will determine in its sole discretion to be equitable among all Participants exercising options to purchase Common Stock on such Exercise Date, and continue all Offering Periods then in effect or (y) provide that the Company will make a pro rata allocation of the shares of Common Stock available for purchase on such Enrollment Date or Exercise Date, as applicable, in as uniform a manner as will be practicable and as it will determine in its sole discretion to be equitable among all participants exercising options to purchase Common Stock on such Exercise Date, and terminate any or all Offering Periods then in effect pursuant to Section 20. The Company may make a pro rata allocation of the shares available on the Enrollment Date of any applicable Offering Period pursuant to the preceding sentence, notwithstanding any authorization of additional shares for issuance under the Plan by the Company's stockholders subsequent to such Enrollment Date.

9. Delivery. As soon as reasonably practicable after each Exercise Date on which a purchase of shares of Common Stock occurs, the Company will arrange the delivery to each Participant of the shares purchased upon exercise of his or her option in a form determined by the Administrator (in its sole discretion) and pursuant to rules established by the Administrator. The Company may permit or require that shares be deposited directly with a broker designated by the Company or with a designated agent of the Company, and the Company may utilize electronic or automated methods of share transfer. The Company may require that shares be retained with such broker or agent for a designated period of time and/or may establish other procedures to permit tracking of disqualifying dispositions of such shares. No Participant will have any voting, dividend, or other stockholder rights with respect to shares of Common Stock subject to any option granted under the Plan until such shares have been purchased and delivered to the Participant as provided in this Section 9.

10. Withdrawal.

(a) A Participant may withdraw all but not less than all the Contributions credited to his or her account and not yet used to exercise his or her option under the Plan at any time by (i) submitting to the Company's stock administration office (or its designee) a written notice of withdrawal in the form determined by the Administrator for such purpose (which may be similar to the form attached hereto as Exhibit B), or (ii) following an electronic or other withdrawal procedure determined by the Administrator. The Administrator may set forth a deadline of when a withdrawal must occur to be effective prior to a given Exercise Date in accordance with policies it may approve from time to time. All of the Participant's Contributions credited to his or her account will be paid to such Participant promptly after receipt of notice of withdrawal and such Participant's option for the Offering Period will be automatically terminated, and no further Contributions for the purchase of shares will be made for such Offering Period. If a Participant withdraws from an Offering Period, Contributions will not resume at the beginning of the succeeding Offering Period, unless the Participant re-enrolls in the Plan in accordance with the provisions of Section 5.

(b) A Participant's withdrawal from an Offering Period will not have any effect on his or her eligibility to participate in any similar plan that may hereafter be adopted by the Company or in succeeding Offering Periods that commence after the termination of the Offering Period from which the Participant withdraws.

11. Termination of Employment. Upon a Participant's ceasing to be an Eligible Employee, for any reason, he or she will be deemed to have elected to withdraw from the Plan and the Contributions credited to such Participant's account during the Offering Period but not yet used to purchase shares of Common Stock under the Plan will be returned to such Participant or, in the case of his or her death, to the person or persons entitled thereto under Section 15, and such Participant's option will be automatically terminated. Unless otherwise provided by the Administrator, a Participant whose employment transfers between entities through a termination with an immediate rehire (with no break in service) by the Company or a Designated Company will not be treated as terminated under the Plan; however, if a Participant transfers from an Offering under the 423 Component to the Non-423 Component, the exercise of the option will be qualified under the 423 Component only to the extent it complies with Section 423 of the Code, unless otherwise provided by the Administrator.

12. Interest. No interest will accrue on the Contributions of a participant in the Plan, except as may be required by Applicable Laws, as determined by the Company, and if so required by the laws of a particular jurisdiction, will apply to all Participants in the relevant Offering under the 423 Component, except to the extent otherwise permitted by U.S. Treasury Regulation Section 1.423-2(f).

13. Stock.

(a) Subject to adjustment upon changes in capitalization of the Company as provided in Section 19 hereof, the maximum number of shares of Common Stock that will be made available for sale under the Plan will be 280,000 shares of Common Stock. The number of shares of Common Stock available for issuance under the Plan will be increased on the first day of each Fiscal Year beginning with the 2020 Fiscal Year equal to the least of (i) 560,000 shares of Common Stock, (ii) 1% of the outstanding shares of Common Stock on the last day of the immediately preceding Fiscal Year, or (iii) an amount determined by the Administrator no later than the last day of the immediately preceding Fiscal Year.

(b) Until the shares of Common Stock are issued (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company), a Participant will have only the rights of an unsecured creditor with respect to such shares, and no right to vote or receive dividends or any other rights as a stockholder will exist with respect to such shares.

(c) Shares of Common Stock to be delivered to a Participant under the Plan will be registered in the name of the Participant or in the name of the Participant and his or her spouse.

14. Administration. The Plan will be administered by the Board or a Committee appointed by the Board, which Committee will be constituted to comply with Applicable Laws. The Administrator will have full and exclusive discretionary authority to construe, interpret and apply the terms of the Plan, to delegate ministerial duties to any of the Company's employees, to designate separate Offerings under the Plan, to designate Subsidiaries and Affiliates as participating in the 423 Component or Non-423 Component, to determine eligibility, to adjudicate all disputed claims filed under the Plan and to establish such procedures that it deems necessary for the administration of the Plan (including, without limitation, to adopt such procedures and sub-plans as are necessary or appropriate to permit the participation in the Plan by employees who are non-U.S. nationals or employed outside the U.S., the terms of which sub-plans may take precedence over other provisions of this Plan, with the exception of Section 13(a) hereof, but unless otherwise superseded by the terms of such sub-plan, the provisions of this Plan will govern the operation of such sub-plan). Unless otherwise determined by the Administrator, the Eligible Employees eligible to participate in each sub-plan will participate in a separate Offering or in the Non-423 Component. Without limiting the generality of the foregoing, the Administrator is specifically authorized to adopt rules and procedures regarding eligibility to participate, the definition of Compensation, handling of Contributions, making of Contributions to the Plan (including, without limitation, in forms other than payroll deductions), establishment of bank or trust accounts to hold Contributions, payment of interest, conversion of local currency, obligations to pay payroll tax, determination of beneficiary designation requirements, withholding procedures and handling of stock certificates that vary with applicable local requirements. The Administrator also is authorized to determine that, to the extent permitted by U.S. Treasury Regulation Section 1.423-2(f), the terms of an option granted under the Plan or an Offering to citizens or residents of a non-U.S. jurisdiction will be less favorable than the terms of options granted under the Plan or the same Offering to employees resident solely in the U.S. Every finding, decision, and determination made by the Administrator will, to the full extent permitted by law, be final and binding upon all parties.

15. Designation of Beneficiary.

(a) If permitted by the Administrator, a Participant may file a designation of a beneficiary who is to receive any shares of Common Stock and cash, if any, from the Participant's account under the Plan in the event of such Participant's death subsequent to an Exercise Date on which the option is exercised but prior to delivery to such Participant of such shares and cash. In addition, if permitted by the Administrator, a Participant may file a designation of a beneficiary who is to receive any cash from the Participant's account under the Plan in the event of such Participant's death prior to exercise of the option. If a Participant is married and the designated beneficiary is not the spouse, spousal consent will be required for such designation to be effective.

(b) Such designation of beneficiary may be changed by the Participant at any time by notice in a form determined by the Administrator. In the event of the death of a Participant and in the absence of a beneficiary validly designated under the Plan who is living at the time of such Participant's death, the Company will deliver such shares and/or cash to the executor or administrator of the estate of the Participant, or if no such executor or administrator has been appointed (to the knowledge of the Company), the Company, in its discretion, may deliver such shares and/or cash to the spouse or to any one or more dependents or relatives of the Participant, or if no spouse, dependent or relative is known to the Company, then to such other person as the Company may designate.

(c) All beneficiary designations will be in such form and manner as the Administrator may designate from time to time. Notwithstanding Sections 15(a) and (b) above, the Company and/or the Administrator may decide not to permit such designations by Participants in non-U.S. jurisdictions to the extent permitted by U.S. Treasury Regulation Section 1.423-2(f).

16. Transferability. Neither Contributions credited to a Participant's account nor any rights with regard to the exercise of an option or to receive shares of Common Stock under the Plan may be assigned, transferred, pledged or otherwise disposed of in any way (other than by will, the laws of descent and distribution or as provided in Section 15 hereof) by the Participant. Any such attempt at assignment, transfer, pledge or other disposition will be without effect, except that the Company may treat such act as an election to withdraw funds from an Offering Period in accordance with Section 10 hereof.

17. Use of Funds. The Company may use all Contributions received or held by it under the Plan for any corporate purpose, and the Company will not be obligated to segregate such Contributions except under Offerings or for Participants in the Non-423 Component for which Applicable Laws require that Contributions to the Plan by Participants be segregated from the Company's general corporate funds and/or deposited with an independent third party. Until shares of Common Stock are issued, Participants will have only the rights of an unsecured creditor with respect to such shares.

18. Reports. Individual accounts will be maintained for each Participant in the Plan. Statements of account will be given to participating Eligible Employees at least annually, which statements will set forth the amounts of Contributions, the Purchase Price, the number of shares of Common Stock purchased and the remaining cash balance, if any.

19. Adjustments, Dissolution, Liquidation, Merger, or Change in Control.

(a) Adjustments. In the event that any dividend or other distribution (whether in the form of cash, Common Stock, other securities, or other property), recapitalization, stock split, reverse stock

split, reorganization, merger, consolidation, split-up, spin-off, combination, repurchase, or exchange of Common Stock or other securities of the Company, or other change in the corporate structure of the Company affecting the Common Stock occurs, the Administrator, in order to prevent dilution or enlargement of the benefits or potential benefits intended to be made available under the Plan, will, in such manner as it may deem equitable, adjust the number and class of Common Stock that may be delivered under the Plan, the Purchase Price per share, the class, and the number of shares of Common Stock covered by each option under the Plan that has not yet been exercised, and the numerical limits of Sections 7 and 13.

(b) Dissolution or Liquidation. In the event of the proposed dissolution or liquidation of the Company, any Offering Period then in progress will be shortened by setting a New Exercise Date, and will terminate immediately prior to the consummation of such proposed dissolution or liquidation, unless provided otherwise by the Administrator. The New Exercise Date will be before the date of the Company's proposed dissolution or liquidation. The Administrator will notify each Participant in writing or electronically, prior to the New Exercise Date, that the Exercise Date for the Participant's option has been changed to the New Exercise Date and that the Participant's option will be exercised automatically on the New Exercise Date, unless prior to such date the Participant has withdrawn from the Offering Period as provided in Section 10 hereof.

(c) Merger or Change in Control. In the event of a merger or Change in Control, each outstanding option will be assumed or an equivalent option substituted by the successor corporation or a Parent or Subsidiary of the successor corporation. In the event that the successor corporation refuses to assume or substitute for the option, the Offering Period with respect to which such option relates will be shortened by setting a New Exercise Date on which such Offering Period will end. The New Exercise Date will occur before the date of the Company's proposed merger or Change in Control. The Administrator will notify each Participant in writing or electronically prior to the New Exercise Date, that the Exercise Date for the Participant's option has been changed to the New Exercise Date and that the Participant's option will be exercised automatically on the New Exercise Date, unless prior to such date the Participant has withdrawn from the Offering Period as provided in Section 10 hereof.

20. Amendment or Termination.

(a) The Administrator, in its sole discretion, may amend, suspend, or terminate the Plan, or any part thereof, at any time and for any reason. If the Plan is terminated, the Administrator, in its discretion, may elect to terminate all outstanding Offering Periods either immediately or upon completion of the purchase of shares of Common Stock on the next Exercise Date (which may be sooner than originally scheduled, if determined by the Administrator in its discretion), or may elect to permit Offering Periods to expire in accordance with their terms (and subject to any adjustment pursuant to Section 19). If the Offering Periods are terminated prior to expiration, all amounts then credited to Participants' accounts that have not been used to purchase shares of Common Stock will be returned to the Participants (without interest thereon, except as otherwise required under Applicable Laws, as further set forth in Section 12 hereof) as soon as administratively practicable.

(b) Without stockholder consent and without limiting Section 20(a), the Administrator will be entitled to change the Offering Periods or Purchase Periods, designate separate Offerings, limit the frequency and/or number of changes in the amount withheld during an Offering Period, establish the exchange rate applicable to amounts withheld in a currency other than U.S. dollars, permit Contributions in

excess of the amount designated by a Participant in order to adjust for delays or mistakes in the Company's processing of properly completed Contribution elections, establish reasonable waiting and adjustment periods and/or accounting and crediting procedures to ensure that amounts applied toward the purchase of Common Stock for each Participant properly correspond with Contribution amounts, and establish such other limitations or procedures as the Administrator determines in its sole discretion advisable that are consistent with the Plan.

(c) In the event the Administrator determines that the ongoing operation of the Plan may result in unfavorable financial accounting consequences, the Administrator may, in its discretion and, to the extent necessary or desirable, modify, amend or terminate the Plan to reduce or eliminate such accounting consequence including, but not limited to:

(i) amending the Plan to conform with the safe harbor definition under the Financial Accounting Standards Board Accounting Standards Codification Topic 718 (or any successor thereto), including with respect to an Offering Period underway at the time;

(ii) altering the Purchase Price for any Offering Period or Purchase Period including an Offering Period or Purchase Period underway at the time of the change in Purchase Price;

(iii) shortening any Offering Period or Purchase Period by setting a New Exercise Date, including an Offering Period or Purchase Period underway at the time of the Administrator action;

(iv) reducing the maximum percentage of Compensation a Participant may elect to set aside as Contributions; and

(v) reducing the maximum number of shares of Common Stock a Participant may purchase during any Offering Period or Purchase Period.

Such modifications or amendments will not require stockholder approval or the consent of any Participants.

21. Notices. All notices or other communications by a Participant to the Company under or in connection with the Plan will be deemed to have been duly given when received in the form and manner specified by the Company at the location, or by the person, designated by the Company for the receipt thereof.

22. Conditions Upon Issuance of Shares. Shares of Common Stock will not be issued with respect to an option unless the exercise of such option and the issuance and delivery of such shares pursuant thereto will comply with all applicable provisions of law, domestic or non-U.S., including, without limitation, the U.S. Securities Act of 1933, as amended, the Exchange Act, the rules and regulations promulgated thereunder, and the requirements of any stock exchange upon which the shares may then be listed, and will be further subject to the approval of counsel for the Company with respect to such compliance.

As a condition to the exercise of an option, the Company may require the person exercising such option to represent and warrant at the time of any such exercise that the shares are being purchased only for investment and without any present intention to sell or distribute such shares if, in the opinion of counsel for the Company, such a representation is required by any of the aforementioned applicable provisions of law.

23. Code Section 409A. The 423 Component of the Plan is exempt from the application of Code Section 409A and any ambiguities herein will be interpreted to so be exempt from Code Section 409A. In furtherance of the foregoing and notwithstanding any provision in the Plan to the contrary, if the Administrator determines that an option granted under the Plan may be subject to Code Section 409A or that any provision in the Plan would cause an option under the Plan to be subject to Code Section 409A, the Administrator may amend the terms of the Plan and/or of an outstanding option granted under the Plan, or take such other action the Administrator determines is necessary or appropriate, in each case, without the Participant's consent, to exempt any outstanding option or future option that may be granted under the Plan from or to allow any such options to comply with Code Section 409A, but only to the extent any such amendments or action by the Administrator would not violate Code Section 409A. Notwithstanding the foregoing, the Company, and any Parent, Subsidiary or Affiliate will have no liability to a Participant or any other party if the option to purchase Common Stock under the Plan that is intended to be exempt from or compliant with Code Section 409A is not so exempt or compliant or for any action taken by the Administrator with respect thereto. The Company makes no representation that the option to purchase Common Stock under the Plan is compliant with Code Section 409A.

24. Term of Plan. The Plan will become effective upon the later to occur of (i) its adoption by the Board or (ii) the business day immediately prior to the Registration Date. It will continue in effect for a term of 20 years, unless sooner terminated under Section 20.

25. Stockholder Approval. The Plan will be subject to approval by the stockholders of the Company within 12 months after the date the Plan is adopted by the Board. Such stockholder approval will be obtained in the manner and to the degree required under Applicable Laws.

26. Governing Law. The Plan will be governed by, and construed in accordance with, the laws of the State of California (except its choice-of-law provisions).

27. No Right to Employment. Participation in the Plan by a Participant will not be construed as giving a Participant the right to be retained as an employee of the Company or a Subsidiary or Affiliate, as applicable. Further, the Company or a Subsidiary or Affiliate may dismiss a Participant from employment at any time, free from any liability or any claim under the Plan.

28. Severability. If any provision of the Plan is or becomes or is deemed to be invalid, illegal, or unenforceable for any reason in any jurisdiction or as to any Participant, such invalidity, illegality or unenforceability will not affect the remaining parts of the Plan, and the Plan will be construed and enforced as to such jurisdiction or Participant as if the invalid, illegal or unenforceable provision had not been included.

29. Compliance with Applicable Laws. The terms of this Plan are intended to comply with all Applicable Laws and will be construed accordingly.

30. Automatic Transfer to Low Price Offering Period. To the extent permitted by Applicable Laws, if the Fair Market Value on any Exercise Date in an Offering Period is lower than the Fair Market Value on the Enrollment Date of such Offering Period, then such Offering Period will be terminated and all Participants in such Offering Period automatically will be withdrawn from such Offering Period immediately after the exercise of their option on such Exercise Date and automatically re-enrolled in the immediately following Offering Period as of the first day thereof.

EXHIBIT A

IGM BIOSCIENCES, INC.

2019 EMPLOYEE STOCK PURCHASE PLAN

SUBSCRIPTION AGREEMENT

_____ Original Application Offering Date: _____

_____ Change in Payroll Deduction Rate

1. _____ ("Employee") hereby elects to participate in the IGM Biosciences, Inc. 2019 Employee Stock Purchase Plan (the "Plan") and subscribes to purchase shares of the Company's Common Stock in accordance with this Subscription Agreement and the Plan. Unless otherwise defined herein, the terms defined in the 2019 Employee Stock Purchase Plan (the "Plan") shall have the same defined meanings in this Subscription Agreement.

2. Employee hereby authorizes payroll deductions from each paycheck in the amount of ____% (from 0 to [____]%) of his or her Compensation on each payday during the Offering Period in accordance with the Plan. (Please note that no fractional percentages are permitted.)

3. Employee understands that said payroll deductions will be accumulated for the purchase of shares of Common Stock at the applicable Purchase Price determined in accordance with the Plan. Employee understands that if he or she does not withdraw from an Offering Period, any accumulated payroll deductions will be used to automatically exercise his or her option and purchase Common Stock under the Plan.

4. Employee has received a copy of the complete Plan and its accompanying prospectus. Employee understands that his or her participation in the Plan is in all respects subject to the terms of the Plan.

5. Shares of Common Stock purchased by Employee under the Plan should be issued in the name(s) of _____ (Employee or Employee and Spouse only).

6. Employee understands that if he or she disposes of any shares that he or she purchased under the Plan within 2 years after the Enrollment Date (the first day of the Offering Period during which he or she purchased such shares) or 1 year after the applicable Exercise Date, he or she will be treated for federal income tax purposes as having received ordinary income at the time of such disposition in an amount equal to the excess of the fair market value of the shares at the time such shares were purchased over the price paid for the shares. Employee hereby agrees to notify the Company in writing within 30 days after the date of any disposition of such shares and to make adequate provision for federal, state or other tax withholding obligations, if any, that arise upon the disposition of such shares. The Company may, but will not be obligated to, withhold from Employee's compensation the amount necessary to meet any applicable withholding obligation including any withholding necessary to make available to the Company any tax deductions or benefits attributable to Employee's sale or early disposition of such shares. Employee understands that if he or she disposes of such shares at any time after the expiration of the 2-year and 1-year holding periods, he or she will be treated for federal income tax purposes as having received income only at the time of such disposition, and that such income will be taxed as ordinary income only to the extent of an amount equal to the lesser of (i) the excess of the fair market value of the shares at the time of

such disposition over the purchase price paid for the shares, or (ii) fifteen percent (15%) of the fair market value of the shares on the first day of the Offering Period. The remainder of the gain, if any, recognized on such disposition will be taxed as capital gain.

7. Employee hereby agrees to hold any shares he or she acquires under the Plan with a broker designated by the Company until the day after 6-month anniversary of the day such shares were purchased. Employee understands that if he or she disposes of any shares that he or she purchased within 2 years after the Enrollment Date (the first day of the Offering Period during which he or she purchased such shares) or 1 year after the date such shares were purchased, he or she will be treated for federal income tax purposes as having received ordinary income at the time of such disposition in an amount equal to the excess of the fair market value of the shares at the time such shares were purchased over the price paid for the shares. The Company may, but will not be obligated to, withhold from Employee's compensation the amount necessary to meet any applicable withholding obligation including any withholding necessary to make available to the Company any tax deductions or benefits attributable to the disposition of such shares by Employee. The remainder of the gain, if any, recognized on such disposition will be taxed as capital gain.

8. Employee hereby agrees to be bound by the terms of the Plan. The effectiveness of this Subscription Agreement is dependent upon Employee's eligibility to participate in the Plan.

Employee's [Social Security Number]: _____

Employee's Address: _____

_____

_____

EMPLOYEE UNDERSTANDS THAT THIS SUBSCRIPTION AGREEMENT WILL REMAIN IN EFFECT THROUGHOUT SUCCESSIVE OFFERING PERIODS UNLESS TERMINATED BY EMPLOYEE.

Dated: _____ _____

Signature of Employee

EXHIBIT B

IGM BIOSCIENCES, INC.

2019 EMPLOYEE STOCK PURCHASE PLAN

NOTICE OF WITHDRAWAL

Unless otherwise defined herein, the terms defined in the 2019 Employee Stock Purchase Plan (the "Plan") shall have the same defined meanings in this Notice of Withdrawal.

The undersigned Participant in the Offering Period of the IGM Biosciences, Inc. 2019 Employee Stock Purchase Plan that began on _____, _____ (the "Offering Date") hereby notifies the Company that he or she hereby withdraws from the Offering Period. He or she hereby directs the Company to pay to the undersigned as promptly as practicable all the payroll deductions credited to his or her account with respect to such Offering Period. The undersigned understands and agrees that his or her option for such Offering Period will be terminated automatically. The undersigned understands further that no further payroll deductions will be made for the purchase of shares in the current Offering Period and the undersigned will be eligible to participate in succeeding Offering Periods only by delivering to the Company a new Subscription Agreement.

Name and Address of Participant:

_____

_____

_____

Signature:

_____

Date:_____

IGM BIOSCIENCES, INC.
INDEMNIFICATION AGREEMENT

This Indemnification Agreement (this "Agreement") is dated as of [_____], 2019 and is between IGM Biosciences, Inc., a Delaware corporation (the "Company"), and [*insert name of indemnitee*] ("Indemnitee").

RECITALS

A. Indemnitee's service to the Company substantially benefits the Company.

B. Individuals are reluctant to serve as directors or officers of corporations or in certain other capacities unless they are provided with adequate protection through insurance or indemnification against the risks of claims and actions against them arising out of such service to and activities on behalf of the Company.

C. Indemnitee does not regard the protection currently provided by applicable law, the Company's governing documents and any insurance as adequate under the present circumstances, and Indemnitee may not be willing to serve as a director or officer without additional protection.

D. In order to induce Indemnitee to continue to provide services to the Company, it is reasonable, prudent and necessary for the Company to contractually obligate itself to indemnify, and to advance expenses on behalf of, Indemnitee as permitted by applicable law.

E. This Agreement shall supersede any prior indemnification agreement between the Company and the Indemnitee, which is hereby terminated.

F. This Agreement is a supplement to and in furtherance of the indemnification provided in the Company's certificate of incorporation and bylaws, and any resolutions adopted pursuant thereto, and this Agreement shall not be deemed a substitute therefor, nor shall this Agreement be deemed to limit, diminish or abrogate any rights of Indemnitee thereunder.

G. In light of the considerations referred to in the preceding recitals, it is the Company's intention and desire that the provisions of this Agreement be construed liberally, subject to their express terms, to maximize the protections to be provided to Indemnitee hereunder.

In consideration of Indemnitee's agreement to serve as a director or officer of the Company after the date hereof, the parties hereto agree as follows:

1. **Definitions**.

(a) A "Change in Control" shall be deemed to occur upon the earliest to occur after the date of this Agreement of any of the following events:

(i) *Acquisition of Stock by Third Party*. Any Person (as defined below) is or becomes the Beneficial Owner (as defined below), directly or indirectly, of securities of the Company representing fifteen percent (15%) or more of the combined voting power of the Company's then outstanding securities;

(ii) *Change in Board Composition*. During any period of two consecutive years (not including any period prior to the execution of this Agreement), individuals who at the beginning of such period constitute the Company's board of directors, and any new directors (other than a director designated by a person who has entered into an agreement with the Company to effect a transaction described in Sections 1(a)(i), 1(a)(iii) or 1(a)(iv)) whose election by the board of directors or nomination for election by the Company's stockholders was approved by a vote of at least two-thirds of the directors then still in office who either were directors at the beginning of the period or whose election or nomination for election was previously so approved, cease for any reason to constitute at least a majority of the members of the Company's board of directors;

(iii) *Corporate Transactions*. The effective date of a merger or consolidation of the Company with any other entity, other than a merger or consolidation which would result in the voting securities of the Company outstanding immediately prior to such merger or consolidation continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity or its ultimate parent, as applicable) more than 50% of the combined voting power of the voting securities of the surviving entity or its ultimate parent, as applicable, outstanding immediately after such merger or consolidation and with the power to elect at least a majority of the board of directors or other governing body of such surviving entity or its ultimate parent, as applicable;

(iv) *Liquidation*. The approval by the stockholders of the Company of a complete liquidation of the Company or an agreement for the sale or disposition by the Company of all or substantially all of the Company's assets; and

(v) *Other Events*. Any other event of a nature that would be required to be reported in response to Item 6(e) of Schedule 14A of Regulation 14A (or in response to any similar item on any similar schedule or form) promulgated under the Securities Exchange Act of 1934, as amended, whether or not the Company is then subject to such reporting requirement.

For purposes of this Section 1(a), the following terms shall have the following meanings:

(1) "Person" shall have the meaning as set forth in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended; provided, however, that "Person" shall exclude (i) the Company, (ii) any trustee or other fiduciary holding securities under an employee benefit plan of the Company, and (iii) any corporation owned, directly or indirectly, by the stockholders of the Company in substantially the same proportions as their ownership of stock of the Company.

(2) "Beneficial Owner" shall have the meaning given to such term in Rule 13d-3 under the Securities Exchange Act of 1934, as amended; provided, however, that "Beneficial Owner" shall exclude any Person otherwise becoming a Beneficial Owner by reason of (i) the stockholders of the Company approving a merger of the Company with another entity or (ii) the Company's board of directors approving a sale of securities by the Company to such Person.

(b) "Corporate Status" describes the status of a person who is or was a director, trustee, general partner, managing member, officer, employee, agent or fiduciary of the Company or any other Enterprise.

(c) "DGCL" means the General Corporation Law of the State of Delaware.

(d) "Disinterested Director" means a director of the Company who is not and was not a party to the Proceeding in respect of which indemnification is sought by Indemnitee.

(e) "Enterprise" means the Company and any other corporation, partnership, limited liability company, joint venture, trust, employee benefit plan or other enterprise of which Indemnitee is or was serving at the request of the Company as a director, trustee, general partner, managing member, officer, employee, agent or fiduciary.

(f) "Expenses" include all reasonable attorneys' fees, retainers, court costs, transcript costs, fees and costs of experts, witness fees, travel expenses, duplicating costs, printing and binding costs, telephone charges, postage, delivery service fees, and all other disbursements or expenses of the types customarily incurred in connection with prosecuting, defending, preparing to prosecute or defend, investigating, being or preparing to be a witness in, or otherwise participating in, a Proceeding. Expenses also include (i) Expenses incurred in connection with any appeal resulting from any Proceeding, including without limitation the premium, security for, and other costs relating to any cost bond, supersedeas bond or other appeal bond or their equivalent, and (ii) for purposes of Section 13(d), Expenses incurred by Indemnitee in connection with the interpretation, enforcement or defense of Indemnitee's rights under this Agreement or under any directors' and officers' liability insurance policies maintained by the Company. Expenses, however, shall not include amounts paid in settlement by Indemnitee or the amount of judgments or fines against Indemnitee.

(g) "Independent Counsel" means a law firm, or a partner or member of a law firm, that is experienced in matters of corporation law and neither presently is, nor in the past five years has been, retained to represent (i) the Company or Indemnitee in any matter material to either such party (other than as Independent Counsel with respect to matters concerning Indemnitee under this Agreement, or other indemnitees under similar indemnification agreements), or (ii) any other party to the Proceeding giving rise to a claim for indemnification hereunder. Notwithstanding the foregoing, the term "Independent Counsel" shall not include any person who, under the applicable standards of professional conduct then prevailing, would have a conflict of interest in representing either the Company or Indemnitee in an action to determine Indemnitee's rights under this Agreement.

(h) "Proceeding" means any threatened, pending or completed action, suit, arbitration, mediation, alternate dispute resolution mechanism, investigation, inquiry, administrative hearing or proceeding, whether brought in the right of the Company or otherwise and whether of a civil, criminal, administrative or investigative nature, including any appeal therefrom and including without limitation any such Proceeding pending as of the date of this Agreement, in which Indemnitee was, is or will be involved as a party, a potential party, a non-party witness or otherwise by reason of (i) the fact that Indemnitee is or was a director or officer of the Company, (ii) any action taken by Indemnitee or any action or inaction on Indemnitee's part while acting as a director or officer of the Company, or (iii) the fact that he or she is or was serving at the request of the Company as a director, trustee, general partner, managing member, officer, employee, agent or fiduciary of the Company or any other Enterprise, in each case whether or not serving in such capacity at the time any liability or Expense is incurred for which indemnification or advancement of expenses can be provided under this Agreement.

(i) Reference to "other enterprises" shall include employee benefit plans; references to "fines" shall include any excise taxes assessed on a person with respect to any employee benefit plan; references to "serving at the request of the Company" shall include any service as a director, officer, employee or agent of the Company which imposes duties on, or involves services by, such director, officer, employee or agent with respect to an employee benefit plan, its participants or beneficiaries; and a person who acted in good faith and in a manner he or she reasonably believed to be in the best interests of the participants and beneficiaries of an employee benefit plan shall be deemed to have acted in a manner "not opposed to the best interests of the Company" as referred to in this Agreement.

2. **Indemnity in Third-Party Proceedings**. The Company shall indemnify Indemnitee in accordance with the provisions of this Section 2 if Indemnitee is, or is threatened to be made, a party to or a participant in any Proceeding, other than a Proceeding by or in the right of the Company to procure a judgment in its favor. Pursuant to this Section 2, Indemnitee shall be indemnified to the fullest extent permitted by applicable law against all Expenses, judgments, fines and amounts paid in settlement actually and reasonably incurred by Indemnitee or on his or her behalf in connection with such Proceeding or any claim, issue or matter therein, if Indemnitee acted in good faith and in a manner he or she reasonably believed to be in or not *opposed to the best* interests of the Company and, with respect to any criminal action or proceeding, had no reasonable cause to believe that his or her conduct was unlawful.

3. **Indemnity in Proceedings by or in the Right of the Company**. The Company shall indemnify Indemnitee in accordance with the provisions of this Section 3 if Indemnitee is, or is threatened to be made, a party to or a participant in any Proceeding by or in the right of the Company to procure a judgment in its favor. Pursuant to this Section 3, Indemnitee shall be indemnified to the fullest extent permitted by applicable law against all Expenses actually and reasonably incurred by Indemnitee or on Indemnitee's behalf in connection with such Proceeding or any claim, issue or matter therein, if Indemnitee acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the Company. No indemnification for Expenses shall be made under this Section 3 in respect of any claim, issue or matter as to which Indemnitee shall have been adjudged by a court of competent jurisdiction to be liable to the Company, unless and only to the extent that the Delaware Court of Chancery or any court in which the Proceeding was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, Indemnitee is fairly and reasonably entitled to indemnification for such expenses as the Delaware Court of Chancery or such other court shall deem proper.

4. **Indemnification for Expenses of a Party Who is Wholly or Partly Successful**. To the extent that Indemnitee is a party to or a participant in and is successful (on the merits or otherwise) in defense of any Proceeding or any claim, issue or matter therein, the Company shall indemnify Indemnitee against all Expenses actually and reasonably incurred by Indemnitee or on Indemnitee's behalf in connection therewith. To the extent permitted by applicable law, if Indemnitee is not wholly successful in such Proceeding but is successful, on the merits or otherwise, in defense of one or more but less than all claims, issues or matters in such Proceeding, the Company shall indemnify Indemnitee against all Expenses actually and reasonably incurred by Indemnitee or on Indemnitee's behalf in connection with (a) each successfully resolved claim, issue or matter, and (b) any claim, issue or matter related to any such successfully resolved claim, issue or matter. For purposes of this section, the termination of any claim, issue or matter in such a Proceeding by dismissal, with or without prejudice, shall be deemed to be a successful result as to such claim, issue or matter.

5. **Partial Indemnification**. If Indemnitee is entitled under any provision of this Agreement to indemnification by the Company for some or a portion of Expenses, but not, however, for the total amount thereof, the Company shall nevertheless indemnify Indemnitee for the portion thereof to which Indemnitee is entitled.

6. **Indemnification for Expenses of a Witness**. To the extent that Indemnitee is, by reason of his or her Corporate Status, a witness in any Proceeding to which Indemnitee is not a party, Indemnitee shall be indemnified to the extent permitted by applicable law against all Expenses actually and reasonably incurred by Indemnitee or on Indemnitee's behalf in connection therewith.

7. **Additional Indemnification**.

(a) Notwithstanding any limitation in Sections 2, 3 or 4, the Company shall indemnify Indemnitee to the fullest extent permitted by applicable law if Indemnitee is, or is threatened to be made, a party to or a participant in any Proceeding (including a Proceeding by or in the right of the Company to procure a judgment in its favor) against all Expenses, judgments, fines and amounts paid in settlement actually and reasonably incurred by Indemnitee or on his or her behalf in connection with the Proceeding or any claim, issue or matter therein.

(b) For purposes of Section 7(a), the meaning of the phrase "to the fullest extent permitted by applicable law" shall include, but not be limited to:

(i) the fullest extent permitted by the provision of the DGCL that authorizes or contemplates additional indemnification by agreement, or the corresponding provision of any amendment to or replacement of the DGCL; and

(ii) the fullest extent authorized or permitted by any amendments to or replacements of the DGCL adopted after the date of this Agreement that increase the extent to which a corporation may indemnify its officers and directors.

8. **Exclusions**. Notwithstanding any provision in this Agreement, the Company shall not be obligated under this Agreement to make any indemnity in connection with any Proceeding (or any part of any Proceeding):

(a) for which payment has actually been made to or on behalf of Indemnitee under any statute, insurance policy, indemnity provision, vote or otherwise, except with respect to any excess beyond the amount paid;

(b) for an accounting or disgorgement of profits pursuant to Section 16(b) of the Securities Exchange Act of 1934, as amended, or similar provisions of federal, state or local statutory law or common law, if Indemnitee is held liable therefor;

(c) for any reimbursement of the Company by Indemnitee of any bonus or other incentive-based or equity-based compensation or of any profits realized by Indemnitee from the sale of securities of the Company, as required in each case under the Securities Exchange Act of 1934, as amended (including any such reimbursements that arise from an accounting restatement of the Company pursuant to Section 304 of the Sarbanes-Oxley Act of 2002 (the "Sarbanes-Oxley Act"), or the payment to the Company of profits arising from the purchase and sale by Indemnitee of securities in violation of Section 306 of the Sarbanes-Oxley Act), if Indemnitee is held liable therefor;

(d) initiated by Indemnitee and not by way of defense, including any Proceeding (or any part of any Proceeding) initiated by Indemnitee against the Company or its directors, officers, employees, agents or other indemnitees, unless (i) the Company's board of directors authorized the Proceeding (or the relevant part of the Proceeding) prior to its initiation, (ii) the Company provides the indemnification, in its sole discretion, pursuant to the powers vested in the Company under applicable law, (iii) otherwise authorized in Section 13(d) or (iv) otherwise required by applicable law; or

(e) if prohibited by applicable law.

9. **Advances of Expenses**.

(a) The Company shall advance the Expenses incurred by Indemnitee in connection with any Proceeding prior to its final resolution, and such advancement shall be made as soon as reasonably practicable, but in any event no later than 60 days, after the receipt by the Company of a written statement or statements requesting such advances from time to time (which shall include invoices received by Indemnitee in connection with such Expenses but, in the case of invoices in connection with legal services, any references to legal work performed or to expenditure made that would cause Indemnitee to waive any privilege accorded by applicable law shall not be included with the invoice). Advances shall be unsecured and interest free and made without regard to Indemnitee's ability to repay such advances. Indemnitee hereby undertakes to repay any advance to the extent that it is ultimately determined that Indemnitee is not entitled to be indemnified by the Company. This Section 9 shall not apply to the extent advancement is prohibited by law and shall not apply to any Proceeding for which indemnity is not permitted under this Agreement, but shall apply to any Proceeding referenced in Section 8(b) or 8(c) prior to a determination that Indemnitee is not entitled to be indemnified by the Company.

10. **Procedures for Notification and Defense of Claim**.

(a) Indemnitee shall notify the Company in writing of any matter with respect to which Indemnitee intends to seek indemnification or advancement of Expenses as soon as reasonably practicable following the receipt by Indemnitee of notice thereof. The written notification to the Company shall include, in reasonable detail, a description of the nature of the Proceeding and the facts underlying the Proceeding. The failure or delay by Indemnitee to notify the Company will not relieve the Company from any liability which it may have to Indemnitee hereunder or otherwise than under this Agreement, except to the extent that such failure or delay materially prejudices the Company.

(b) If, at the time of the receipt of a notice of a Proceeding pursuant to the terms hereof, the Company has directors' and officers' liability insurance in effect, the Company shall give prompt notice of the commencement of the Proceeding to the insurers in accordance with the procedures set forth in the applicable policies. The Company shall thereafter take all commercially-reasonable action to cause such insurers to pay, on behalf of Indemnitee, all amounts payable as a result of such Proceeding in accordance with the terms of such policies.

(c) In the event the Company may be obligated to make any indemnity in connection with a Proceeding, the Company shall be entitled to assume the defense of such Proceeding with counsel approved by Indemnitee, which approval shall not be unreasonably withheld. After the retention of such counsel by the Company, the Company will not be liable to Indemnitee for any fees or expenses of counsel subsequently incurred by Indemnitee with respect to the same Proceeding. Notwithstanding the Company's assumption of the defense of any such Proceeding, the Company shall be obligated to pay the fees and expenses of Indemnitee's separate counsel to the extent (i) the employment of separate counsel by Indemnitee is authorized by the Company, (ii) counsel for the Company or Indemnitee shall have reasonably concluded that there is a conflict of interest between the Company and Indemnitee in the conduct of any such defense such that Indemnitee needs to be separately represented, (iii) the fees and expenses are non-duplicative and reasonably incurred in connection with Indemnitee's role in the Proceeding despite the Company's assumption of the defense; (iv) the Company is not financially or legally able to perform its indemnification obligations, or (v) the Company shall not have retained, or shall not continue to retain, such counsel to defend such Proceeding. The Company shall have the right to conduct such defense as it sees fit in its sole discretion. Regardless of any provision in this Agreement, Indemnitee shall have the right to employ counsel in any Proceeding at Indemnitee's personal expense. The Company shall not be entitled, without the consent of Indemnitee, to assume the defense of any claim brought by or in the right of the Company.

(d) Indemnitee shall give the Company such information and cooperation in connection with the Proceeding as may be reasonably appropriate.

(e) The Company shall not be liable to indemnify Indemnitee for any settlement of any Proceeding (or any part thereof) without the Company's prior written consent, which shall not be unreasonably withheld.

(f) The Company shall not settle any Proceeding (or any part thereof) in a manner that imposes any penalty or liability on Indemnitee without Indemnitee's prior written consent, which shall not be unreasonably withheld.

11. **Procedures upon Application for Indemnification**.

(a) To obtain indemnification, Indemnitee shall submit to the Company a written request, including therein or therewith such documentation and information as is reasonably available to Indemnitee *and as is reasonably* necessary to determine whether and to what extent Indemnitee is entitled to indemnification following the final disposition of the Proceeding. Any delay in providing the request will not relieve the Company from its obligations under this Agreement, except to the extent such delay is prejudicial.

(b) Upon written request by Indemnitee for indemnification pursuant to Section 11(a), a determination with respect to Indemnitee's entitlement thereto shall be made in the specific case (i) if a Change in Control shall have occurred, by Independent Counsel in a written opinion to the Company's board of directors, a copy of which shall be delivered to Indemnitee or (ii) if a Change in Control shall not have occurred, if required by applicable law (A) by a majority vote of the Disinterested Directors, even though less than a quorum of the Company's board of directors, (B) by a committee of Disinterested Directors designated by a majority vote of the Disinterested Directors, even though less than a quorum of the Company's board of directors, (C) if there are no such Disinterested Directors or, if such Disinterested Directors so direct, by Independent Counsel in a written opinion to the Company's board of directors, a copy of which shall be delivered to Indemnitee or (D) if so directed by the Company's board of directors, by the stockholders of the Company. If it is determined that Indemnitee is entitled to indemnification, payment to Indemnitee shall be made within ten days after such determination. Indemnitee shall cooperate with the person, persons or entity making the determination with respect to Indemnitee's entitlement to indemnification, including providing to such person, persons or entity upon reasonable advance request any documentation or information that is not privileged or otherwise protected from disclosure and that is reasonably available to Indemnitee and reasonably necessary to such determination. Any costs or expenses (including attorneys' fees and disbursements) reasonably incurred by Indemnitee in so cooperating with the person, persons or entity making such determination shall be borne by the Company, to the extent permitted by applicable law.

(c) In the event the determination of entitlement to indemnification is to be made by Independent Counsel pursuant to Section 11(b), the Independent Counsel shall be selected as provided in this Section 11(c). If a Change in Control shall not have occurred, the Independent Counsel shall be selected by the Company's board of directors, and the Company shall give written notice to Indemnitee advising him or her of the identity of the Independent Counsel so selected. If a Change in Control shall have occurred, the Independent Counsel shall be selected by Indemnitee (unless Indemnitee shall request that such selection be made by the Company's board of directors, in which event the preceding sentence shall apply), and Indemnitee shall give written notice to the Company advising it of the identity of the Independent Counsel so selected. In either event, Indemnitee or the Company, as the case may be, may, within ten days after such written notice of selection shall have been given, deliver to the Company or to Indemnitee, as the case may be, a written objection to such selection; *provided*, *however*, that such objection may be asserted only on the ground that the Independent Counsel so selected does not meet the requirements of "Independent Counsel" as

defined in Section 1 of this Agreement, and the objection shall set forth with particularity the factual basis of such assertion. Absent a proper and timely objection, the person so selected shall act as Independent Counsel. If such written objection is so made and substantiated, the Independent Counsel so selected may not serve as Independent Counsel unless and until such objection is withdrawn or a court has determined that such objection is without merit. If, within 20 days after the later of (i) submission by Indemnitee of a written request for indemnification pursuant to Section 11(a) hereof and (ii) the final disposition of the Proceeding, the parties have not agreed upon an Independent Counsel, either the Company or Indemnitee may petition a court of competent jurisdiction for resolution of any objection which shall have been made by the Company or Indemnitee to the other's selection of Independent Counsel and for the appointment as Independent Counsel of a person selected by the court or by such other person as the court shall designate, and the person with respect to whom all objections are so resolved or the person so appointed shall act as Independent Counsel under Section 11(b) hereof. Upon the due commencement of any judicial proceeding or arbitration pursuant to Section 13(a) of this Agreement, the Independent Counsel shall be discharged and relieved of any further responsibility in such capacity (subject to the applicable standards of professional conduct then prevailing). The Company shall pay the reasonable fees and expenses of any Independent Counsel.

12. **Presumptions and Effect of Certain Proceedings**.

(a) In making a determination with respect to entitlement to indemnification hereunder, the person, persons or entity making such determination shall, to the fullest extent not prohibited by law, presume that Indemnitee is entitled to indemnification under this Agreement, and the Company shall, to the fullest extent not prohibited by law, have the burden of proof to overcome that presumption.

(b) The termination of any Proceeding or of any claim, issue or matter therein, by judgment, order, settlement or conviction, or upon a plea of *nolo contendere* or its equivalent, shall not (except as otherwise expressly provided in this Agreement) of itself create a presumption that Indemnitee did not act in good faith and in a manner which he or she reasonably believed to be in or not opposed to the best interests of the Company or, with respect to any criminal Proceeding, that Indemnitee had reasonable cause to believe that his or her conduct was unlawful.

(c) Neither the knowledge, actions nor failure to act of any other director, officer, agent or employee of the Enterprise shall be imputed to Indemnitee for purposes of determining the right to indemnification under this Agreement.

13. **Remedies of Indemnitee**.

(a) Subject to Section 13(e), in the event that (i) a determination is made pursuant to Section 11 of this Agreement that Indemnitee is not entitled to indemnification under this Agreement, (ii) advancement of Expenses is not timely made pursuant to Section 9 or 13(d) of this Agreement, (iii) no determination of entitlement to indemnification shall have been made pursuant to Section 11 of this Agreement within 90 days after the later of the receipt by the Company of the request for indemnification or the final disposition of the Proceeding, (iv) payment of indemnification pursuant to this Agreement is not made (A) within ten days after a determination has been made that Indemnitee is entitled to indemnification or (B) with respect to indemnification pursuant to Sections 4, 5 and 13(d) of this Agreement, within 30 days after receipt by the Company of a written request therefor, or (v) the Company or any other person or entity takes or threatens to take any action to declare this Agreement void or unenforceable, or institutes any litigation or other action or proceeding designed to deny, or to recover from, Indemnitee the benefits provided or intended to be provided to Indemnitee hereunder, Indemnitee shall be entitled to an adjudication by a court of competent jurisdiction of his or her entitlement to such indemnification or advancement of Expenses. Alternatively, Indemnitee, at his or her option, may seek an award in arbitration with respect to his or her

entitlement to such indemnification or advancement of Expenses, to be conducted by a single arbitrator pursuant to the Commercial Arbitration Rules of the American Arbitration Association. Indemnitee shall commence such proceeding seeking an adjudication or an award in arbitration within 180 days following the date on which Indemnitee first has the right to commence such proceeding pursuant to this Section 13(a); *provided*, *however*, that the foregoing clause shall not apply in respect of a proceeding brought by Indemnitee to enforce his or her rights under Section 4 of this Agreement. The Company shall not oppose Indemnitee's right to seek any such adjudication or award in arbitration in accordance with this Agreement.

(b) Neither (i) the failure of the Company, its board of directors, any committee or subgroup of the board of directors, Independent Counsel or stockholders to have made a determination that indemnification of Indemnitee is proper in the circumstances because Indemnitee has met the applicable standard of conduct, nor (ii) an actual determination by the Company, its board of directors, any committee or subgroup of the board of directors, Independent Counsel or stockholders that Indemnitee has not met the applicable standard of conduct, shall create a presumption that Indemnitee has or has not met the applicable standard of conduct. In the event that a determination shall have been made pursuant to Section 11 of this Agreement that Indemnitee is not entitled to indemnification, any judicial proceeding or arbitration *commenced pursuant* to this Section 13 shall be conducted in all respects as a *de novo* trial, or arbitration, on the merits, and Indemnitee shall not be prejudiced by reason of that adverse determination. In any judicial proceeding or arbitration commenced pursuant to this Section 13, the Company shall, to the fullest extent not prohibited by law, have the burden of proving Indemnitee is not entitled to indemnification or advancement of Expenses, as the case may be.

(c) To the fullest extent not prohibited by law, the Company shall be precluded from asserting in any judicial proceeding or arbitration commenced pursuant to this Section 13 that the procedures and presumptions of this Agreement are not valid, binding and enforceable and shall stipulate in any such court or before any such arbitrator that the Company is bound by all the provisions of this Agreement. If a determination shall have been made pursuant to Section 11 of this Agreement that Indemnitee is entitled to indemnification, the Company shall be bound by such determination in any judicial proceeding or arbitration commenced pursuant to this Section 13, absent (i) a misstatement by Indemnitee of a material fact, or an omission of a material fact necessary to make Indemnitee's statements not materially misleading, in connection with the request for indemnification, or (ii) a prohibition of such indemnification under applicable law.

(d) To the extent not prohibited by law, the Company shall indemnify Indemnitee against all Expenses that are incurred by Indemnitee in connection with any action for indemnification or advancement of Expenses from the Company under this Agreement or under any directors' and officers' liability insurance policies maintained by the Company, unless the court (or arbitrator) finds that each material argument or defense advanced by Indemnitee in such action or arbitration was either frivolous or not made in good faith. Further, if requested by Indemnitee, the Company shall (as soon as reasonably practicable, but in any event no later than 60 days, after receipt by the Company of a written request therefor) advance such Expenses to Indemnitee, subject to the provisions of Section 8, subject to Indemnitee's agreement to repay the sums advanced if the court (or arbitrator) finds that each material argument or defense advanced by Indemnitee in such action or arbitration was either frivolous or not made in good faith.

(e) Notwithstanding anything in this Agreement to the contrary, no determination as to entitlement to indemnification shall be required to be made prior to the final disposition of the Proceeding.

14. **Contribution**. To the fullest extent permissible under applicable law, if the indemnification provided for in this Agreement is unavailable to Indemnitee, the Company, in lieu of indemnifying Indemnitee, shall contribute to the amounts incurred by Indemnitee, whether for Expenses, judgments, fines

or amounts paid or to be paid in settlement, in connection with any claim relating to an indemnifiable event under this Agreement, in such proportion as is deemed fair and reasonable in light of all of the circumstances of such Proceeding in order to reflect (i) the relative benefits received by the Company and Indemnitee as a result of the events and transactions giving rise to such Proceeding; and (ii) the relative fault of Indemnitee and the Company (and its other directors, officers, employees and agents) in connection with such events and transactions.

15. **Non-exclusivity**. The rights of indemnification and to receive advancement of Expenses as provided by this Agreement shall not be deemed exclusive of any other rights to which Indemnitee may at any time be entitled under applicable law, the Company's certificate of incorporation or bylaws, any agreement, a vote of stockholders or a resolution of directors, or otherwise. To the extent that a change in Delaware law, whether by statute or judicial decision, permits greater indemnification or advancement of Expenses than would be afforded currently under the Company's certificate of incorporation and bylaws and this Agreement, it is the intent of the parties hereto that Indemnitee shall enjoy by this Agreement the greater benefits so afforded by such change, subject to the restrictions expressly set forth herein or therein. Except as expressly set forth herein, no right or remedy herein conferred is intended to be exclusive of any other right or remedy, and every other right and remedy shall be cumulative and in addition to every other right and remedy given hereunder or now or hereafter existing at law or in equity or otherwise. Except as expressly set forth herein, the *assertion* or employment of any right or remedy hereunder, or otherwise, shall not prevent the concurrent assertion or employment of any other right or remedy.

16. **Primary Responsibility**. The Company acknowledges that to the extent Indemnitee is serving as a director on the Company's board of directors at the request or direction of a venture capital fund or other entity and/or certain of its affiliates (collectively, the "Secondary Indemnitors"), Indemnitee may have certain rights to indemnification and advancement of expenses provided by such Secondary Indemnitors. The Company agrees that, as between the Company and the Secondary Indemnitors, the Company is primarily responsible for amounts required to be indemnified or advanced under the Company's certificate of incorporation or bylaws or this Agreement and any obligation of the Secondary Indemnitors to provide indemnification or advancement for the same amounts is secondary to those Company obligations. To the extent not in contravention of any insurance policy or policies providing liability or other insurance for the Company or any director, trustee, general partner, managing member, officer, employee, agent or fiduciary of the Company or any other Enterprise, the Company waives any right of contribution or subrogation against the Secondary Indemnitors with respect to the liabilities for which the Company is primarily responsible under this Section 16. In the event of any payment by the Secondary Indemnitors of amounts otherwise required to be indemnified or advanced by the Company under the Company's certificate of incorporation or bylaws or this Agreement, the Secondary Indemnitors shall be subrogated to the extent of such payment to all of the rights of recovery of Indemnitee for indemnification or advancement of expenses under the Company's certificate of incorporation or bylaws or this Agreement or, to the extent such subrogation is unavailable and contribution is found to be the applicable remedy, shall have a right of contribution with respect to the amounts paid. The Secondary Indemnitors are express third-party beneficiaries of the terms of this Section 16.

17. **No Duplication of Payments**. The Company shall not be liable under this Agreement to make any payment of amounts otherwise indemnifiable hereunder (or for which advancement is provided hereunder) if and to the extent that Indemnitee has otherwise actually received payment for such amounts under any insurance policy, contract, agreement or otherwise.

18. **Insurance**. To the extent that the Company maintains an insurance policy or policies providing liability insurance for directors, trustees, general partners, managing members, officers, employees, agents or fiduciaries of the Company or any other Enterprise, Indemnitee shall be covered by such policy or policies to the same extent as the most favorably-insured persons under such policy or policies in a comparable position.

19. **Subrogation**. In the event of any payment under this Agreement, the Company shall be subrogated to the extent of such payment to all of the rights of recovery of Indemnitee, who shall execute all papers required and take all action necessary to secure such rights, including execution of such documents as are necessary to enable the Company to bring suit to enforce such rights.

20. **Services to the Company**. Indemnitee agrees to serve as a director or officer of the Company or, at the request of the Company, as a director, trustee, general partner, managing member, officer, employee, agent or fiduciary of another Enterprise, for so long as Indemnitee is duly elected or appointed or until Indemnitee tenders his or her resignation or is removed from such position. Indemnitee may at any time and for any reason resign from such position (subject to any other contractual obligation or any obligation imposed by operation of law), in which event the Company shall have no obligation under this Agreement to continue Indemnitee in such position. This Agreement shall not be deemed an employment contract between the Company (or any of its subsidiaries or any Enterprise) and Indemnitee. Indemnitee specifically acknowledges that any employment with the Company (or any of its subsidiaries or any Enterprise) is at will, and Indemnitee may be discharged at any time for any reason, with or without cause, with or without notice, except as may be otherwise expressly provided in any executed, written employment contract between Indemnitee and the Company (or any of its subsidiaries or any Enterprise), any existing formal severance policies adopted by the Company's board of directors or, with respect to service as a director or officer of the Company, the Company's certificate of incorporation or bylaws or the DGCL. No such document shall be subject to any oral modification thereof.

21. **Duration**. This Agreement shall continue until and terminate upon the later of (a) ten years after the date that Indemnitee shall have ceased to serve as a director or officer of the Company or as a director, trustee, general partner, managing member, officer, employee, agent or fiduciary of any other Enterprise, as applicable; or (b) one year after the final termination of any Proceeding, including any appeal, then pending in respect of which Indemnitee is granted rights of indemnification or advancement of Expenses hereunder and of any proceeding commenced by Indemnitee pursuant to Section 13 of this Agreement relating thereto.

22. **Successors and Assigns**. This Agreement shall be binding upon the Company and its successors and assigns, including any direct or indirect successor by purchase, merger, consolidation or otherwise to all or substantially all of the business or assets of the Company, and shall inure to the benefit of Indemnitee and Indemnitee's personal or legal representatives, heirs, executors, administrators, distributees, legatees and other successors. The Company shall require and cause any successor (whether direct or indirect by purchase, merger, consolidation or otherwise) to all or substantially all of the business or assets of the Company, by written agreement, expressly to assume and agree to perform this Agreement in the same manner and to the same extent that the Company would be required to perform if no such succession had taken place.

23. **Severability**. Nothing in this Agreement is intended to require or shall be construed as requiring the Company to do or fail to do any act in violation of applicable law. The Company's inability, pursuant to court order or other applicable law, to perform its obligations under this Agreement shall not constitute a breach of this Agreement. If any provision or provisions of this Agreement shall be held to be invalid, illegal or unenforceable for any reason whatsoever: (i) the validity, legality and enforceability of the remaining provisions of this Agreement (including without limitation, each portion of any section of this Agreement containing any such provision held to be invalid, illegal or unenforceable, that is not itself invalid, illegal or unenforceable) shall not in any way be affected or impaired thereby and shall remain enforceable to

the fullest extent permitted by law; (ii) such provision or provisions shall be deemed reformed to the extent necessary to conform to applicable law and to give the maximum effect to the intent of the parties hereto; and (iii) to the fullest extent possible, the provisions of this Agreement (including, without limitation, each portion of any section of this Agreement containing any such provision held to be invalid, illegal or unenforceable, that is not itself invalid, illegal or unenforceable) shall be construed so as to give effect to the intent manifested thereby.

24. **Enforcement**. The Company expressly confirms and agrees that it has entered into this Agreement and assumed the obligations imposed on it hereby in order to induce Indemnitee to serve as a director or officer of the Company, and the Company acknowledges that Indemnitee is relying upon this Agreement in serving as a director or officer of the Company.

25. **Entire Agreement**. This Agreement constitutes the entire agreement between the parties hereto with respect to the subject matter hereof and supersedes all prior agreements and understandings, oral, written and implied, between the parties hereto with respect to the subject matter hereof; *provided*, *however*, that this Agreement is a supplement to and in furtherance of the Company's certificate of incorporation and bylaws and applicable law.

26. **Modification and Waiver**. No supplement, modification or amendment to this Agreement shall be binding unless executed in writing by the parties hereto. No amendment, alteration or repeal of this Agreement shall adversely affect any right of Indemnitee under this Agreement in respect of any action taken or omitted by such Indemnitee in his or her Corporate Status prior to such amendment, alteration or repeal. No waiver of any of the provisions of this Agreement shall constitute or be deemed a waiver of any other provision of this Agreement nor shall any waiver constitute a continuing waiver.

27. **Notices**. All notices and other communications required or permitted hereunder shall be in writing and shall be mailed by registered or certified mail, postage prepaid, or otherwise delivered by hand, messenger or courier service addressed:

(a) if to Indemnitee, to Indemnitee's address, as shown on the signature page of this Agreement or in the Company's records, as may be updated in accordance with the provisions hereof; or

(b) if to the Company, to the attention of the Chief Executive Officer or Chief Financial Officer of the Company at 325 E. Middlefield Road, Mountain View, California 94043, or at such other current address as the Company shall have furnished to Indemnitee, with a copy (which shall not constitute notice) to Kenneth Clark and Tony Jeffries at Wilson Sonsini Goodrich & Rosati, P.C., 650 Page Mill Road, Palo Alto, California 94304.

Each such notice or other communication shall for all purposes of this Agreement be treated as effective or having been given (i) if delivered by hand, messenger or courier service, when delivered (or if sent *via* a nationally-recognized overnight courier service, freight prepaid, specifying next-business-day delivery, one business day after deposit with the courier), or (ii) if sent *via* mail, at the earlier of its receipt or five days after the same has been deposited in a regularly-maintained receptacle for the deposit of the United States mail, addressed and mailed as aforesaid.

28. **Applicable Law and Consent to Jurisdiction**. This Agreement and the legal relations among the parties shall be governed by, and construed and enforced in accordance with, the laws of the State of Delaware, without regard to its conflict of laws rules. Except with respect to any arbitration commenced by Indemnitee pursuant to Section 13(a) of this Agreement, or except as mutually agreed by the parties in writing, the Company and Indemnitee hereby irrevocably and unconditionally (i) agree that any action or

proceeding arising out of or in connection with this Agreement shall be brought only in the Delaware Court of Chancery, and not in any other state or federal court in the United States of America or any court in any other country, (ii) consent to submit to the exclusive jurisdiction of the Delaware Court of Chancery for purposes of any action or proceeding arising out of or in connection with this Agreement, (iii) appoint, to the extent such party is not otherwise subject to service of process in the State of Delaware, The Corporation Trust Company, Wilmington, Delaware as its agent in the State of Delaware as such party's agent for acceptance of legal process in connection with any such action or proceeding against such party with the same legal force and validity as if served upon such party personally within the State of Delaware, (iv) waive any objection to the laying of venue of any such action or proceeding in the Delaware Court of Chancery, and (v) waive, and agree not to plead or to make, any claim that any such action or proceeding brought in the Delaware Court of Chancery has been brought in an improper or inconvenient forum.

29. **Counterparts**. This Agreement may be executed in one or more counterparts, each of which shall for all purposes be deemed to be an original but all of which together shall constitute one and the same Agreement. This Agreement may also be executed and delivered by facsimile signature and in counterparts, each of which shall for all purposes be deemed to be an original but all of which together shall constitute one and the same Agreement. Only one such counterpart signed by the party against whom enforceability is sought needs to be produced to evidence the existence of this Agreement.

30. **Captions**. The headings of the paragraphs of this Agreement are inserted for convenience only and shall not be deemed to constitute part of this Agreement or to affect the construction thereof.

(*signature page follows*)

The parties are signing this Indemnification Agreement as of the date stated in the introductory sentence.

IGM BIOSCIENCES, INC.

_____

(Signature)

_____

(Print Name)

_____

(Title)

INDEMNITEE

_____

(Signature)

_____

(Print Name)

_____

(Street address)

_____

(City, State and ZIP)

IGM BIOSCIENCES, INC.

OUTSIDE DIRECTOR COMPENSATION POLICY

(Adopted and approved August 7, 2019; Effective upon effectiveness of the registration statement relating to the Company's initial public offering)

IGM Biosciences, Inc. (the "**Company**") believes that providing cash and equity compensation to members of the Company's Board of Directors (the "**Board**," and members of the Board, the "**Directors**") represents an effective tool to attract, retain and reward Directors who are not employees of the Company (the "**Outside Directors**"). This Outside Director Compensation Policy (the "**Policy**") is intended to formalize the Company's policy regarding cash compensation and grants of equity to its Outside Directors. Unless otherwise defined herein, capitalized terms used in this Policy will have the meaning given such terms in the Company's Amended and Restated 2018 Omnibus Incentive Plan (the "**Plan**"). Each Outside Director will be solely responsible for any tax obligations incurred by such Outside Director as a result of compensation such Outside Director receives under this Policy.

This Policy will be effective as of the effective date of the registration statement in connection with the initial public offering of the Company's securities (the "**Effective Date**").

1. CASH COMPENSATION

Annual Cash Retainer

Each Outside Director will be paid an annual cash retainer of $20,000. There are no per-meeting attendance fees for attending Board meetings. This cash compensation will be paid quarterly in arrears on a prorated basis.

Committee Annual Cash Retainer

Each Outside Director who serves as the Board chair or the chair or a member of a committee of the Board will be eligible to earn additional annual fees (paid quarterly in arrears on a prorated basis) as follows:

Board Chair:	$20,000
Audit Committee Chair:	$10,000
Audit Committee Member:	$ 5,000
Compensation Committee Chair:	$10,000
Compensation Committee Member:	$ 5,000
Corporate Governance and Nominating Committee Chair:	$10,000
Corporate Governance and Nominating Committee Member:	$ 5,000
Research and Clinical Development Committee Chair:	$10,000
Research and Clinical Development Committee Member:	$ 5,000

For clarity, each Outside Director who serves as a committee chair will only receive the additional annual fee as the committee chair and not the additional annual fee as a committee member.

Payment

Each annual cash retainer under this Policy will be paid quarterly in arrears on a prorated basis to each Outside Director who has served in the relevant capacity at any point during the immediately preceding fiscal quarter, and such payment shall be made no later than 30 days following the end of such immediately preceding fiscal quarter. For purposes of clarification, an Outside Director who has served as an Outside Director, as a member of an applicable committee (or chair thereof) during only a portion of the relevant Company fiscal quarter will receive a pro-rated payment of the quarterly payment of the applicable annual cash retainer(s), calculated based on the number of days during such fiscal quarter such Outside Director has served in the relevant capacities. For purposes of clarification, an Outside Director who has served as an Outside Director, as a member of an applicable committee (or chair thereof), as applicable, from the Effective Date through the end of the fiscal quarter containing the Effective Date (the "Initial Period") will receive a prorated payment of the quarterly payment of the applicable annual cash retainer(s), calculated based on the number of days during the Initial Period that such Outside Director has served in the relevant capacities.

2. EQUITY COMPENSATION

Outside Directors will be eligible to receive all types of Awards (except Incentive Stock Options) under the Plan (or the applicable equity plan in place at the time of grant), including discretionary Awards not covered under this Policy. All grants of Awards to Outside Directors pursuant to Section 2 of this Policy will be automatic and nondiscretionary, except as otherwise provided herein, and will be made in accordance with the following provisions:

(a) No Discretion. No person will have any discretion to select which Outside Directors will be granted any Awards under this Policy or to determine the number of Shares to be covered by such Awards.

(b) Initial Options. Each individual who first becomes an Outside Director following the Effective Date will be granted a nonstatutory stock option (an "**Initial Option**") to purchase 12,100 Shares. The Initial Option will be automatically granted on the first trading date on or after the date on which such individual first becomes an Outside Director, whether through election by the stockholders of the Company or appointment by the Board to fill a vacancy. If an individual was a member of the Board and also an employee, becoming an Outside Director due to termination of employment will not entitle the Outside Director to an Initial Option. Each Initial Option will vest as to 1/3rd of the Shares subject to the Initial Option on the one-year anniversary of the date the applicable Outside Director's service as an Outside Director commenced and as to 1/36th of the Shares subject to the Initial Option each month thereafter, in each case subject to the Outside Director continuing to be a Service Provider through the applicable vesting date. Each Initial Option will become fully vested and exercisable immediately prior to a Change in Control, subject to the Outside Director continuing to be a Service Provider at the time of the Change in Control.

(c) Annual Options. Following the Effective Date, each Outside Director will be automatically granted a nonstatutory stock option on the same date as annual equity award grants are made to the Company's executive officers (an "**Annual Option**") to purchase 6,050 Shares. Each Annual Option will vest as to 1/12th of the Shares subject to the Annual Option each month that is completed

after the date of the first annual meeting of the Company's stockholders following the date of grant (each, an "**Annual Meeting**") after the date the Annual Option is granted, provided that the Annual Option will vest in full on the earlier of (i) the 12-month anniversary of the first Annual Meeting following the date of grant, or (ii) the date of the second regularly scheduled Annual Meeting after the date of grant, in each case subject to the Outside Director continuing to be a Service Provider through the applicable vesting date.

(d) Additional Terms of Initial Options and Annual Options. The terms and conditions of each Initial Option and Annual Option will be as follows:

i. The term of each Initial Option and Annual Option will be ten years, subject to earlier termination as provided in the Plan.

ii. Each Initial Option and Annual Option will have an exercise price per Share equal to 100% of the Fair Market Value per Share on the grant date.

3. CHANGE IN CONTROL

In the event of a Change in Control, each Outside Director will fully vest in his or her outstanding Company equity awards immediately prior to a Change in Control, including any Initial Option or Annual Option, provided that the Outside Director continues to be an Outside Director through the date of the Change in Control.

4. ANNUAL COMPENSATION LIMIT

No Outside Director may be paid, issued or granted, in any fiscal year, any cash compensation and Awards with an aggregate value greater than $1,000,000 for an Outside Director's first year of service or $750,000 in any subsequent year. The value of any Award will be based on the grant date fair value determined in accordance with U.S. generally accepted accounting principles). Any cash compensation paid or Awards granted to an individual for his or her services as an Employee, or for his or her services as a Consultant (other than as an Outside Director), will not count for purposes of the limitation under this Section 4.

5. TRAVEL EXPENSES

Each Outside Director's reasonable, customary and documented out-of-pocket travel expenses to Board and committee meetings will be reimbursed by the Company.

6. ADDITIONAL PROVISIONS

All provisions of the Plan not inconsistent with this Policy will apply to Awards granted to Outside Directors thereunder.

7. ADJUSTMENTS

In the event that any dividend or other distribution (whether in the form of cash, Shares, other securities or other property), recapitalization, stock split, reverse stock split, reorganization, merger, consolidation, split-up, spin-off, combination, repurchase, or exchange of Shares or other securities of the Company, or other change in the corporate structure of the Company affecting the Shares occurs, the Administrator, in order to prevent diminution or enlargement of the benefits or potential benefits intended to be made available under this Policy, will adjust the number of Shares issuable pursuant to Awards granted under this Policy.

8. SECTION 409A

In no event will cash compensation or expense reimbursement payments under this Policy be paid after the later of (i) 15th day of the 3rd month following the end of the Company's fiscal year in which the compensation is earned or expenses are incurred, as applicable, or (ii) 15th day of the 3rd month following the end of the calendar year in which the compensation is earned or expenses are incurred, as applicable, in compliance with the "short-term deferral" exception under Section 409A of the Internal Revenue Code of 1986, as amended, and the final regulations and guidance thereunder, as may be amended from time to time (together, "**Section 409A**"). It is the intent of this Policy that this Policy and all payments hereunder be exempt from or otherwise comply with the requirements of Section 409A so that none of the compensation to be provided hereunder will be subject to the additional tax imposed under Section 409A, and any ambiguities or ambiguous terms herein will be interpreted to be so exempt or comply. In no event will the Company or any of its Parent or Subsidiaries have any liability or obligation to reimburse, indemnify, or hold harmless an Outside Director for any taxes imposed or other costs incurred as a result of Section 409A.

9. STOCKHOLDER APPROVAL

The initial adoption of the Policy will be subject to approval by the Company's stockholders prior to the Effective Date. Unless otherwise required by applicable law, following such approval, the Policy shall not be subject to approval by the Company's stockholders, including, for the avoidance of doubt, as a result of or in connection with an action taken with respect to this Policy as contemplated in Section 10 hereof.

10. REVISIONS

The Board may amend, alter, suspend or terminate this Policy at any time and for any reason. No amendment, alteration, suspension or termination of this Policy will materially impair the rights of an Outside Director with respect to compensation that already has been paid or awarded, unless otherwise mutually agreed in writing between the Outside Director and the Company. Termination of this Policy will not affect the Board's or the Compensation Committee's ability to exercise the powers granted to it under the Plan with respect to Awards granted under the Plan pursuant to this Policy prior to the date of such termination.

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the use in this Amendment No. 1 to Registration Statement No. 333-233365 on Form S-1 of our report dated June 28, 2019 (August 30, 2019 as to the effects of the reverse stock split as described in Note 1) relating to the financial statements of IGM Biosciences, Inc. appearing in the Prospectus, which is part of this Registration Statement, and to the reference to us under the heading “Experts” in such Prospectus.

/s/ Deloitte & Touche LLP

San Francisco, California
August 30, 2019