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DELTA REPORT

10-K

IGMS - IGM BIOSCIENCES, INC.

10-K - DECEMBER 31, 2023 COMPARED TO 10-K - DECEMBER 31, 2022

The following comparison report has been automatically generated

TOTAL DELTAS	2456
CHANGES	252
DELETIONS	1021
ADDITIONS	1183

REFINITIV

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2022 2023

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 FOR THE TRANSITION PERIOD FROM TO**

Commission File Number 001-39045

IGM Biosciences, Inc.

(Exact name of Registrant as specified in its Charter)

Delaware	**77-0349194**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
325 E. Middlefield Road Mountain View, CA	**94043**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (650) 965-7873

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.01 per share	IGMS	The Nasdaq Global Select Market

Securities registered pursuant to Section 12(g) of the Act: **None**

Indicate by check mark if the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. YES ☐ NO ☒

Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. YES ☐ NO ☒

Indicate by check mark whether the Registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. YES ☒ NO ☐

Indicate by check mark whether the Registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit such files). YES ☒ NO ☐

Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management’s assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☐

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant’s executive officers officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

Indicate by check mark whether the Registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). YES ☐ NO ☒

The aggregate market value of the voting and non-voting common stock held by non-affiliates of the Registrant, based on the closing price of a share of the Registrant’s common stock on June 30, 2022 June 30, 2023 as reported by the NASDAQ Global Select Market on such date was approximately $219.2 132.1 million. Shares of the Registrant’s common stock held by each executive officer, director and holder of 5% or more of the outstanding common stock have been excluded in that such persons may be deemed to be affiliates. This calculation does not reflect a determination that certain persons are affiliates of the Registrant for any other purpose.

As of March 27, 2023 March 1, 2024, the Registrant had 29,495,859 33,286,205 shares of common stock, $0.01 par value per share, and 13,687,883 25,500,383 shares of non-voting common stock, $0.01 par value per share, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Certain sections of the Registrant’s definitive Proxy Statement to be filed in connection with the Registrant’s 2022 Annual Meeting of Stockholders are incorporated by reference into Part III of this Annual Report on Form 10-K where indicated. Such definitive Proxy Statement will be filed with the Securities and Exchange Commission pursuant to Regulation 14A within 120 days of the Registrant’s fiscal year ended December 31, 2022 December 31, 2023.

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Special Note Regarding Forward Looking Statements

This Annual Report on Form 10-K contains forward-looking statements. All statements other than statements of historical facts contained in this report are forward-looking statements. These statements involve known and unknown risks, uncertainties, and other important factors that are in some cases beyond our control and may cause our actual results, performance, or achievements to be materially different from any future results, performance, or achievements expressed or implied by the forward-looking statements.

In some cases, you can identify forward-looking statements by terms 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 terms or other similar expressions. Forward-looking statements contained in this Annual Report on Form 10-K include, but are not limited to, statements about: the therapeutic applications for our IgM antibodies; the advantages of the properties of our IgM bispecific antibodies; 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; whether, and for how long, we will rely on third parties to manufacture our product candidates for preclinical and clinical testing and to package, label, store and distribute our investigational product candidates; our ability and the potential to successfully manufacture and supply our product candidates for clinical trials and for commercial use, if approved; potential business disruptions affecting drug discovery, our preclinical studies or the initiation, patient enrollment, development and operation of our clinical trials; the sufficiency of our backup to our master cell banks; expectations regarding our collaboration agreement with Genzyme Corporation, a wholly owned subsidiary of Sanofi (Sanofi), including all financial aspects of the collaboration, the potential benefits and results of the collaboration, as well as plans and objectives with respect to the collaboration; future strategic arrangements and/or collaborations and the potential benefits of such arrangements; our expectations regarding the impact of macroeconomic conditions, such as inflation, supply chain disruptions and economic volatility, on our business; our expectations

regarding the impact of health epidemics, such as the COVID-19 pandemic, and other catastrophic events on our business; our anticipated use of our existing resources; 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, cash equivalents, and marketable securities 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; candidates, including our expectations regarding our strategic refocusing announced in December 2023; 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; developments relating to our competitors and our industry, including competing product candidates and therapies; and the ability of our clinical trials to demonstrate the safety and efficacy of our product candidates, and other positive results.

We have based these forward-looking statements largely on our current expectations and projections about our business, the industry in which we operate and financial trends that we believe may affect our business, financial condition, results of operations, and prospects, and these forward-looking statements are not guarantees of future performance or development. These forward-looking statements speak only as of the date of this Annual Report on Form 10-K and are subject to a number of risks, uncertainties, and assumptions described in the section titled “Risk Factors” and elsewhere in this Annual Report on Form 10-K. Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified, you should not rely on these forward-looking statements as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Except as required by applicable law, we undertake no obligation to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events, or otherwise.

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PART I

Item 1. Business.

Overview

We are a clinical-stage biotechnology company pioneering the development of IgM antibodies for the treatment of cancer and autoimmune and inflammatory diseases, and infectious diseases. IgM antibodies have inherent properties that we believe may enable them to bind more strongly to targets on the surface of cells than comparable IgG antibodies. We have created a proprietary IgM antibody technology platform that we believe is particularly well suited for developing receptor cross-linking agonists and T cell engagers, targeted cytokines, and target neutralizers. engagers. Our product candidates currently in or about planned to enter clinical testing include:

- IGM-8444: Aplitabart: An IgM antibody targeting Death Receptor 5 (DR5) proteins, currently being evaluated in multiple Phase combination studies in subjects with relapsed and/or refractory solid trials, including randomized and hematologic cancers and randomized single-arm combination trial trials for the treatment of colorectal cancer.
- Imvotamab: A bispecific T cell engaging IgM antibody targeting CD20 and CD3 proteins, planned for evaluation currently being evaluated in two Phase 1 clinical trials in autoimmune diseases, including one for severe systemic lupus erythematosus (SLE) a one for severe rheumatoid arthritis. We are also evaluating potential combination studies of imvotamab for the treatment of relapsed/refractory B cell non-Hodgkin's lymphoma (NHL) patients arthritis (RA) and plan planned to conclude development of imvotamab as a monotherapy for NHL.
- IGM-7354: An IgM antibody targeting the delivery of interleukin-15 (IL-15) to the area of PD-L1 expressing cells, currently being evaluated in a Phase 1 clinical trial for the treatment of patients with relapsed and/or refractory solid tumor cancers. myositis.
- IGM-2644: A bispecific T cell engaging IgM antibody targeting CD38 and CD3 proteins, currently planned for evaluation in a Ph 1 clinical trial for the treatment of patients with multiple myeloma and potentially in autoimmune diseases. disease.

Our pipeline also includes IGM-2537, a bispecific clinical development priorities are (i) treating colorectal cancer using IgM DR5 agonist antibodies and (ii) treating autoimmune diseases using IgM T cell engaging IgM antibody targeting CD123 and CD3 proteins for engager antibodies. In December 2023, we announced we are deprioritizing all hematologic oncology clinical development as well as the treatment clinical development of patients with Acute Myeloid Leukemia (AML), Myelodysplastic Syndromes (MDS) and Acute Lymphoblastic Leukemia (ALL) our targeted cytokine product candidate (Strategic Refocusing).

We believe that we have the most advanced research and development program focused on 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, other than those being developed in partnership with Sanofi (see Sanofi Collaboration and License Agreement) and the intellectual property related thereto.

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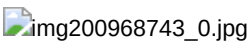
Our Differentiated Approach and Proprietary Platform

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



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

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 and autoimmune diseases. The vast majority of the antibodies approved for treatment and commercial sale are members of the IgG class or fragments thereof. We are pioneering the development of new therapies based on the IgM class of antibodies. We believe our IgM antibodies could have therapeutic applications across a wide range of diseases, including cancer and autoimmune and inflammatory diseases, and infectious 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 or virus as 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 or viral targets in close proximity with a single antibody. The inherent biological advantages of IgM antibodies may enable:

- Greater ability to cross-link cell surface receptors, which may significantly enhance cellular signaling for killing cancer cells c stimulating T cells
- Stronger binding to cell surface targets, including those with low expression levels, which may result in better and more complete targeting of cells;

- Stronger binding to viral targets, which may result in more potent neutralization of viruses;
- Stronger binding to difficult targets, such as tumor associated carbohydrates and glycosylated proteins, which has the poten to expand the range of addressable targets; and
- Substantially greater ability to utilize the complement dependent cytotoxicity (CDC) mechanism of killing targeted cells, whic kills cancer can kill target 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 which began in 2010, 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.

Our Antibodies

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.

Our platform also provides us the ability to develop engineered IgM antibodies against various targets which enables the creation of a broad and differentiated product pipeline. Our initial current efforts are focused on four two broad applications of IgM antibodies:

Receptor Cross-linking Agonists

We are also using our IgM platform to develop IgM antibodies that bind to members of the Tumor Necrosis Factor receptor Superfamily (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.

There have been multiple attempts to create IgG based therapeutic antibodies directed at DR5 and other members of the TNFrSF. However, since IgG antibodies naturally bind only two cell surface proteins, their bivalent nature inherently limits their signaling efficacy with this class of targets. 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 based studies, we have observed that IgM antibodies have much greater potency than IgG antibodies with the same binding domains against this class of targets.

T cell Engagers

We believe that T cell engagers may provide an alternative approach to depletion of pathogenic immune cells which drive several autoimmune diseases. 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 deplete pathogenic cells through T cell directed cellular

cytotoxicity (TDCC) and CDC while maintaining a favorable tolerability profile. Bispecific T cell engagers, including CD20 x CD3 CD123 x CD3, and CD38 x CD3 and solid tumor target x CD3 are designed to simultaneously target a desired tumor associated bind to an antigen on a cancer target cell and CD3 (a protein that is expressed on the surface of T cells) and redirect to direct the T cells to kill the cancer target cells, a form of TDCC. In contrast to other bispecific antibody formats that bind to one or two target molecules on the surface of the cancer target cell and to one CD3 molecule on the surface of the T cell, our IgM bispecific format includes 10 binding domains to the target on the surface of the cancer target cell and one binding domain to CD3. We believe that our IgM bispecific antibodies may successfully bind to cancer target cells for longer periods and with more avidity compared to IgG bispecific antibodies, which may prove to be particularly advantageous for those cancer pathogenic target cells that express relatively lower amounts of the targeted protein specific antigen on their surface.

Additionally, we believe that T cell engagers may have the potential to provide an alternative approach to depletion 5

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Targeted Cytokines Index to Financial Statements

We are using our IgM platform to create bifunctional IgM antibodies with high avidity to selected cell surface targets to deliver potent, immune stimulating cytokines. These IgM antibodies are designed to 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 position the cytokine for delivery by being bound to a target cell for an extended period. We also believe that the high avidity of the IgM antibodies may allow cytokine delivery by being bound to target cells that have relatively low density of the surface target.

Target Neutralizer

We are also applying our IgM platform to infectious diseases as we believe the high avidity of IgM antibodies may provide improved virus neutralization and reduce antibody evasion through viral mutation. For COVID-19, our initial development focus in infectious diseases, we have observed in multiple in vitro and in vivo studies that IgM antibodies achieve more potent neutralization of SARS-CoV-2 compared to IgG antibodies with the same binding domains. We also intend to leverage the multi-valent structure of an IgM platform to develop a novel “viral trapping” approach that we believe has the potential to offer resilience against viral evolution for SARS family viruses.

Our Development Programs

IGM-8444: Aplitabart: Death Receptor 5 Agonist IgM Antibody

Overview: IGM-8444, one of our clinical-stage product candidates, Aplitabart is 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 send a signal to the cancer cell to induce programmed death of cancer cells, also known as apoptosis.

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 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 limited efficacy 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. IGM-8444 Aplitabart 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*) (in vitro). In our studies in living organisms (*in vivo*) (in vivo), specifically cynomolgus monkeys, no untoward toxicity was observed with IGM-8444. aplitabart.

Phase 1a/1b Study 1 Combination Studies of IGM-8444 as a Single Agent and Aplitabart in Combination in Patients with Solid and Hematologic Malignancies: Colorectal Cancer: We are conducting a Phase 1b randomized combination study for the first-in-human, Phase 1a/1b, multicenter, open-label clinical trial treatment of patients with metastatic colorectal cancer to evaluate assess the safety tolerability, and pharmacokinetics clinical response of IGM-8444 as a single agent and in combination with other agents in subjects with relapsed and/or refractory solid or hematologic cancers. The Phase 1a portion 3 mg/kg of the trial consists of IGM-8444 dosed intravenously with IGM-8444 as a single agent, IGM-8444 in combination aplitabart with FOLFIRI +/- bevacizumab, IGM-8444 plus bevacizumab. This global study is in combination second-line patients with birinapant, colorectal cancer who have not previously received FOLFIRI treatment and IGM-8444 in combination is designed to assess the additional benefit of aplitabart combined with venetoclax. The key objectives of the Phase 1a studies are to provide an initial assessment of the pharmacokinetics, safety, biomarkers and preliminary efficacy of IGM-8444 both as a single agent and in combination with current second-line standard of care chemotherapy and other agents. regimen of FOLFIRI plus bevacizumab. The study primary endpoint is progression free survival.

We are also conducting a randomized Phase 1a single arm combination study in patients with colorectal cancer. This combination study is a global randomized trial in second for the treatment of later line patients with metastatic colorectal cancer who have previously not received FOLFIRI treatment to assess the additional benefit safety and clinical response of IGM-8444 combined 10 mg/kg of aplitabart and FOLFIRI with the current standard of care regimen of FOLFIRI and without bevacizumab. The study endpoints include progression free survival, overall survival, overall response rate, and safety of IGM-8444 in combination with FOLFIRI and bevacizumab.

Imvotamab: CD20 x CD3 Bispecific IgM Antibody

Overview: Imvotamab another of our clinical-stage product candidates, is a CD20 x CD3 bispecific IgM antibody. CD20 is a protein that is frequently expressed on the surface of B cells, while CD3 is a protein that is expressed on the surface of T cells and is an essential activating molecule for the T cell. Imvotamab has 10 binding domains to CD20 and a single binding domain to CD3 (specifically CD3ε). In

addition, imvotamab 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.

Imvotamab is designed to bind a CD20 expressing cell, such as a cancer cell or a pathogenic B cell in autoimmunity, which causes an autoimmune disease, 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 CD20 expressing cell by releasing cytotoxic biochemicals (perforins and granzymes) that penetrate and perforate the CD20 expressing cell. Imvotamab is planned for evaluation in autoimmune diseases mediated by autoreactive antibodies and has been in development for the treatment of cancers expressing CD20. cell (TDCC).

Imvotamab in Autoimmune Disease

Overview: Disease: Given that autoreactive antibodies are produced by immune cells that arise from B cells, B cell depleting therapies are a well-established treatment approach in these for treating certain autoimmune diseases. While effective in depleting circulating B cells, currently available therapies may not be effective in depleting *tissue-resident* pathogenic B cells because they rely upon the presence of Natural Killer cells and complement, both of which may only be available in reduced quantities deep within various tissues of the body. Failure to clear tissue-resident B cells may result in reservoirs of pathogenic B cells that may contribute to ongoing generation of autoantibodies and disease activity. Pathogenic immune cells which express low levels of CD20 also escape depletion by available IgG based B cell depleting agents, thus further contributing to persistence of disease-driving cells and activity.

Autoantibody-driven diseases represent a subset of the broader autoimmune category of diseases, and include systemic lupus erythematosus, rheumatoid arthritis, myasthenia gravis, and pemphigus vulgaris. Chronic treatment is required for symptom management and disease control. Many of these diseases are progressive and are associated with significant morbidity and impact on quality of life.

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We believe that imvotamab may offer important advantages over existing B cell therapies. Preclinical studies show that imvotamab penetrates and depletes CD20 expressing cells deep within various tissues, including bone marrow, spleen, and lymph nodes. Additionally, in vitro studies show that imvotamab is significantly more effective than rituximab in depleting low CD20 expressing cells. We plan are currently evaluating imvotamab as a treatment in two autoimmune diseases, systemic lupus erythematosus and rheumatoid arthritis, and we are preparing to begin evaluating imvotamab in myositis.

Phase 1b Studies of Imvotamab in Severe Systemic Lupus Erythematosus (SLE) and Moderate to Severe Rheumatoid Arthritis (RA): We are conducting two Phase 1b, multicenter, clinical trials to evaluate imvotamab in multiple autoimmune diseases, beginning patients with Phase 1 studies in SLE and rheumatoid arthritis.

Imvotamab in Oncology

Overview: Imvotamab is also designed to bind to CD20 expressing cancer cells, as well as CD3 on a cytotoxic T cell, to mimic the normal T cell activation pathway, leading the T cell to recognize and kill the CD20 expressing cancer cell by releasing cytotoxic biochemicals

(perforins and granzymes) that penetrate and perforate the cancer cell. We RA who have been developing imvotamab as a treatment for patients diagnosed with CD20-expressing malignancies.

Phase 1/2 Study of failed standard therapies. Imvotamab in Patients with Relapsed and/or Refractory (R/R) Non-Hodgkin's Lymphoma (NHL): We have been conducting Phase 1 and Phase 2, multicenter, open-label clinical trials to evaluate the safety, tolerability, and pharmacokinetics of imvotamab as a monotherapy single agent in subjects with relapsed and/or refractory NHL. For strategic reasons, we have decided to conclude these studies and not proceed with further clinical development of imvotamab as a monotherapy for NHL. However, we believe the safety and efficacy profile that imvotamab has shown in these Phase 1 and Phase 2 studies may make it an attractive combination partner for use with other active agents in treating NHL, and we plan to evaluate potential combination agents and partnerships.

IGM-7354: IL-15 x PD-L1 IgM Antibody

Overview: IGM-7354, another of our clinical-stage product candidates, consists of an interleukin-15 (IL-15) cytokine molecule and an IL-15 receptor displayed on the J chain of an IgM antibody with the goal of displaying the IL-15 molecules on the surface of PD-L1 expressing cells. This product candidate is intended for the treatment of patients with solid and hematologic malignancies. 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 and an IL-15 receptor to the J chain of an IgM antibody which is designed to bind to a target on the surface of a cell. We believe that this targeted delivery system for IL-15 may lead to the proliferation of T cells and NK cells which may assist in the immune based treatment of cancer.

Phase 1 Study of IGM-7354 in Patients with Solid Tumor Cancers: We are conducting aPhase 1 multicenter, open-label clinical trial to evaluate the safety, tolerability, and pharmacokinetics of IGM-7354 as a monotherapy in patients with relapsed and/or refractory solid tumor cancers. The Phase 1 study consists of a dose escalation stage and dose expansion stage, in which IGM-7354 will be intravenously administered. administered in dose escalation cohorts, with the SLE study being open-label and the RA study randomized and placebo-controlled. The key objectives of the trial trials are to provide an initial assessment of pharmacokinetics, safety, tolerability, and immune cell proliferation. clinical activity of imvotamab in patients with SLE and RA.

Phase1b Study of Imvotamab in Idiopathic Inflammatory Myopathies (myositis): We are planning to conduct a Phase 1b clinical trial to evaluate imvotamab in patients with myositis who have failed standard therapies. The key objectives of this planned study are to provide an initial assessment of safety, tolerability, and clinical activity of imvotamab in patients with myositis, in a setting where tissue biopsies will also be obtained for intensive pharmacodynamic analysis. In the third quarter of 2023, we received clearance from the Food and Drug Administration (FDA) of our investigational new drug (IND) application for the use of imvotamab in treating myositis.

IGM-2644: CD38 x CD3 Bispecific IgM Antibody

Overview: IGM-2644 is a bispecific T cell engaging IgM antibody that targets CD38 and CD3 proteins simultaneously. CD38 is a protein that is frequently and highly expressed on the surface of multiple myeloma antibody-secreting plasma cells (a plasma cell cancer), which are pathogenic in many autoimmune diseases, while CD3 is a protein that is expressed on the surface of T cells and is an essential activating molecule required to induce T cell mediated-cytotoxicity.

We believe that IGM-2644 with its 10 binding units for CD38 may bind to CD38 expressing cancer on plasma B cells stronger (higher avidity) compared to an IgG bispecific antibody with only and one binding unit for CD38. This to CD3 on T cells may enhance show enhanced efficacy in patients that develop resistance to depleting tissue resident plasma B cells versus monospecific anti-CD38 IgG antibodies due to downregulation of CD38. In addition to T cell mediated-cytotoxicity, IGM-2644 can also induce complement mediated cytotoxicity which may induce cancer cell death in the absence of T cells. molecules. IGM-2644 is also being considered developed in

autoimmune diseases, given that CD38 is expressed on plasma B cells which are the source of autoreactive antibodies in several autoimmune diseases. We expect to initiate the first clinical trial of IGM-2644 in multiple myeloma in 2023.

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Additional Pipeline Candidate

Our pipeline also includes:

- IGM-2537, a bispecific T cell engaging IgM antibody targeting CD123 and CD3 proteins simultaneously and is being developed the treatment of patients with CD123-expressing malignancies such as AML, MDS and ALL. CD123 is the interleukin-3 (IL-3) receptor alpha chain and is frequently over-expressed on the surface of leukemic blasts as well as leukemic stem cells. CD3 is protein that is expressed on the surface of T cells and is an essential T cell activating molecule required to induce T cell-media cytotoxicity. We believe that IGM-2537 with its 10 binding units for CD123 may provide stronger binding to CD123 expressing cancer cells with more avidity compared to an IgG bispecific antibody with only one binding unit for CD123. In preclinical studie IGM-2537 demonstrated potent T cell-mediated cytotoxicity against leukemia cells but less cytokine release compared to a bispecific IgG. These properties may provide a therapy with a better safety and efficacy profile for the treatment of patients with these hematologic malignancies. We expect to initiate the first clinical trial of IGM-2537 in 2024.

Third-Party Agreements

We enter into arrangements to in-license research and development technology rights with third parties relating to our clinical and pre-clinical programs and product candidates. These arrangements may include non-refundable, upfront payments, payments for options to acquire additional rights relating to our product candidates, as well as contingent obligations for potential development, regulatory and commercial performance milestone payments, and royalty payments. Our obligation to make payments for contingent obligations is contingent upon the respective milestones being achieved as well as our continued involvement in the programs and/or the lack of any adverse events which could cause the discontinuance of the programs. The activities under these license agreements are performed with no guarantee of either technological or commercial success.

Sanofi Collaboration and License Agreement

In March 2022, we entered into a global collaboration and license agreement with Genzyme Corporation (Sanofi Agreement), a wholly owned subsidiary of Sanofi (Sanofi), pursuant to which we will collaborate with Sanofi to generate, develop, manufacture and commercialize IgM antibodies directed to six primary targets, three of which are intended as oncology targets and three of which are intended as immunology targets (Collaboration Targets). The Sanofi Agreement became effective in May 2022 upon satisfaction of the closing conditions.

Upfront Payment

Under the terms of the Sanofi Agreement, we received a $150.0 million upfront payment from Sanofi in May 2022.

Milestone Payments

We have the right to receive up to $940.0 million in aggregate development and regulatory milestones for each oncology Collaboration Target and up to $1,065.0 million in aggregate development, regulatory and commercialization milestones for each immunology Collaboration Target.

Profit Share and Royalties

For licensed products directed to oncology Collaboration Targets, unless we exercise our opt-out right described below, we and Sanofi will equally share profits and losses from commercialization of those licensed products in the United States, France, Germany, Italy, Spain, the United Kingdom, and Japan, on a licensed product-by-licensed product and country-by-country basis for the commercial life of the applicable licensed product, subject to certain exceptions. In all other countries, we will have the right to receive tiered royalties on net sales of licensed products directed to oncology Collaboration Targets that are in the low double-digit to mid-teen percentages, subject to certain reductions and offsets.

For licensed products directed to immunology Collaboration Targets, we will have the right to receive tiered royalties on global net sales of those licensed products that are in the high single-digit to low-teen percentages, subject to certain reductions and offsets.

Our right to receive royalties on net sales of licensed products will continue on a licensed product-by-licensed product and country-by-country basis until the latest to occur of: (i) the expiration of the last valid claim covering such licensed product, (ii) expiration of regulatory exclusivity for such licensed product, and (iii) a specified period of time after the first commercial sale of such licensed product, subject to certain exceptions.

Research, Development, and Commercialization

For each oncology Collaboration Target program, we will be responsible for conducting research and development activities through receipt of the first marketing approval from the Food and Drug Administration (FDA) FDA or European Medicines Agency (EMA), whichever occurs first, for a licensed product directed to such Collaboration Target. We will solely bear the costs we incur for conducting those research and development activities. After receipt of the first marketing approval of a licensed product directed to an oncology Collaboration Target by the FDA or EMA, Sanofi will be responsible for conducting all future development and commercialization activities for such Collaboration Target and all development expenses for licensed products directed to such Collaboration Target will be shared equally by the parties, except that Sanofi will solely bear the costs it incurs in conducting the first two pivotal studies following the receipt of such first marketing approval.

For each immunology Collaboration Target program, we will be responsible for conducting research and development activities through the completion of the first Phase 1 clinical trials for up to two candidates directed to each immunology Collaboration Target, after which Sanofi will be responsible for conducting all future development and commercialization activities related to each such Collaboration Target. We and Sanofi will bear their own costs in conducting those activities.

For certain cases during a limited period of time, Sanofi will have a one-time right to substitute each of the initial Collaboration Targets, and following any such substitution, the Sanofi Agreement will be automatically terminated with respect to such replaced initial Collaboration Target.

Manufacturing

We will be responsible for manufacture of all preclinical materials for the research activities for each Collaboration Target and drug substance for clinical supply for each Collaboration Target program, until we transfer manufacturing responsibilities to Sanofi for each licensed product. Sanofi will be responsible for manufacturing all commercial manufacturing activities and for clinical supply for each Collaboration Target program, after we transfer manufacturing responsibilities to Sanofi for each licensed product.

Opt-Out and Step-In Rights

For each development program directed to an oncology Collaboration Target, subject to certain limitations in the period prior to and after the anticipated launch date, we have the right to opt-out of the entirety of our obligations to conduct development activities for the applicable licensed product, and our right to share in the profits and obligation to share in the losses, with respect to the commercialization and further development of licensed products directed to such oncology Collaboration Target (excluding specified ongoing development activities and costs) by providing a specified amount of notice to Sanofi any time after delivery of a milestone data package from the first Phase 1 clinical trial for a licensed product directed to such oncology Collaboration Target. In the case of any such opt-out, instead of sharing in the profits and losses for licensed products directed to the applicable oncology Collaboration Target with respect to the major market countries and the milestone payments for such oncology Collaboration Target, each as described above, we will have the right to receive tiered royalties on net sales of licensed products directed to such oncology Collaboration Target accruing after the effective date of such opt-out and adjusted development, regulatory and commercialization milestone payments for milestone events achieved by such licensed products, in each case, that will be determined based on the stage of development of such oncology Collaboration Target program at the time such opt-out occurs.

In certain limited circumstances, including events based on our material uncured breach of the Sanofi Agreement and certain change of control scenarios, Sanofi will have the right to step-in to assume the conduct of our applicable collaboration activities for the

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applicable Collaboration Target(s) and/or licensed product(s). In the event that Sanofi exercises its step-in right, we will be deemed to have opted-out of the applicable Collaboration Targets.

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Exclusivity

We will grant to Sanofi, on a Collaboration Target-by-Collaboration Target basis, an exclusive license under certain intellectual property rights controlled by us to, among other things, conduct certain confirmatory and other research activities regarding potential candidates directed to such target in accordance with an agreed upon research plan and to develop and commercialize such licensed products worldwide for all uses. For a specified period of time, on a Collaboration Target-by-Collaboration Target basis, neither we nor Sanofi will

be permitted to develop, commercialize, or manufacture for clinical or commercial uses outside of the Sanofi Agreement, certain IgM antibodies that are directed to such Collaboration Target and labeled, or under development to be labeled for, oncology (in the case that such Collaboration Target is an oncology Collaboration Target) or immunology (in the case that such Collaboration Target is an immunology Collaboration Target), in each case, subject to certain exceptions. Further, during the term of the Sanofi Agreement, on a Collaboration Target-by-Collaboration Target basis, we will not be permitted to research, develop, commercialize, or manufacture outside of the Sanofi Agreement, target-binding molecules that are the same as, or a close homolog of, the target-binding sequences of licensed compounds directed to such Collaboration Target.

Expiration and Termination

Unless sooner terminated by either party pursuant to its terms, the Sanofi Agreement will continue in effect on a licensed product-by-licensed product and country-by-country basis until the expiration of the applicable profit and loss share term or royalty term, as the case may be. Upon the expiration (but not termination) of the Sanofi Agreement, Sanofi's licenses to our intellectual property for such licensed product in such country will continue on a royalty-free and non-exclusive basis.

Each party will have the right to terminate the Sanofi Agreement in its entirety, or on a licensed product-by-licensed product or country-by-country basis, as applicable, for an uncured material breach of the Sanofi Agreement by the other party. Each party will have the right to terminate the Sanofi Agreement in its entirety, or on a Collaboration Target-by-Collaboration Target basis or licensed product-by-licensed product basis, as applicable, if such party's safety review committee recommends cessation of development or commercialization of applicable licensed products due to a material safety event. Sanofi will have the right to terminate the Sanofi Agreement in its entirety, on an oncology Collaboration Target-by-oncology Collaboration Target basis, an immunology Collaboration Target construct-by-immunology Collaboration Target construct basis or country-by-country basis, as applicable, with or without cause, upon specified prior notice. Each party will have the right to terminate the Sanofi Agreement in its entirety for the other party's bankruptcy or other similar financial distress as well as a right to terminate in certain other circumstances.

Medivir Agreement

In January 2021, we entered into an exclusive license agreement with Medivir AB (Medivir) through which we received global, exclusive development and commercialization rights for birinapant, a clinical-stage Second Mitochondrial-derived Activator of Caspases (SMAC) mimetic. Under the terms of the agreement, we made an upfront payment of $1.0 million upon signing the agreement and made an additional $1.5 million payment in November 2021 due to our initiation of a Phase 1 clinical study of IGM-8444 aplitabart in combination with birinapant. Under the terms of the agreement, should birinapant be successfully developed and approved, we are would be obligated to make milestone payments up to a total of approximately $348.5 million, plus tiered royalties from the mid-single digits up to mid-teens on net sales.

Manufacturing and Supply

In 2021, we completed construction and began to operate a good manufacturing practice (cGMP) manufacturing facility for the manufacture of clinical trial drug materials; however, we expect to continue to rely on third parties for the manufacture of some of our current and future product candidates. 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 plasmids containing genes encoding heavy chain (HC), light chain (LC) and J chain (JC) domains. To construct a bispecific IgM we use a plasmid containing a modified JC gene that encodes a single chain fragment variable (scFv) domain. The IgM pentamers, containing HC, LC and JC in an appropriate ratio (e.g., 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.

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

Bulk drug substance (BDS) for our clinical-stage product candidates is provided from both internal and third-party contract manufacturers. While any reduction or halt in supply of BDS could limit our ability to develop our product candidates until replacement contract manufacturers are found and qualified, we believe that we have sufficient BDS to support our current clinical trial programs. Filling and finishing of the BDS for our clinical-stage product candidates has been completed at other third-party contract manufacturers.

All of our product candidates are manufactured from 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, 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. 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, 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 IGM-8444, aplitabart, we are aware of other companies with competing clinical stage therapeutics that target DR5 that include, but are not limited to, AbbVie, Beijing Sunbio Biotech, Boehringer Ingelheim, Clover Biopharmaceuticals, Daiichi Sankyo, and InhibRx.

With respect to imvotamab, we are aware of other companies with competing clinical stage therapeutics that target CD20 that include, but are not limited to, Genmab/AbbVie, Regeneron, Roche/Genentech, and Xencor/Janssen.

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With respect to IGM-7354, we are aware of other companies with competing clinical stage therapeutics that utilize targeted and untargeted IL-15 that include, but are not limited to, ImmunityBio, Kadmon/Sanofi, Nektar, Roche/Genentech, SOTIO Biotech and Pfizer.

With respect to IGM-2644, we are aware of other companies with competing products or product candidates that target CD38 that include, but are not limited to, Genmab, Ichnos Sciences, Glenmark Innovation, Hi-Bio/I-Mab, Janssen, MorphoSys, Sanofi, and Xencor.

With respect to IGM-2537, we are aware of other companies with competing products or product candidates that target CD123 that include, but are not limited to, Aptevo Therapeutics, Immunogen, Johnson & Johnson, Macrogenics, Menarini Group, Sanofi, and Xencor.

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 and manufacturing technology and product candidates. Material aspects of our material patent portfolios covering our platform technology, product candidates, and related discovery programs, are summarized below.

Platform and Manufacturing Technologies

As of December 31, 2022 December 31, 2023, our patent portfolio related to our platform and manufacturing technologies includes 14 15 patent families (13 (12 published, 14 wholly owned, one exclusively licensed) and includes issued U.S. and international patents

and applications directed to our modified J chain technology. The platform and manufacturing portfolio includes 37 48 granted patents, three 1 allowed applications, application, and 98 97 pending applications in active prosecution in 16 countries or regions. regions, one pending PCT application (exclusively licensed) and three unpublished pending U.S. provisional applications covering three families (all

wholly owned). These patent families are projected to expire between 2034 and 2043, 2044, absent any patent term adjustments or extensions. Summaries of relevant selected 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 (three (four patents), Australia (two patents), Brazil, China, Europe (two patents, both validated in Austria, Belgium, Switzerland, Germany, Denmark, Spain, Finland, France, Hong Kong, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Sweden, Slovenia, and the United Kingdom, one additionally validated in Czech Republic and Turkey), Israel (two patents), India, Japan (two patents), Mexico (two patents), New Zealand, Russia, Singapore, South Africa, and South Korea, and is allowed in the United States and New Zealand. Korea. As of December 31, 2022 December 31, 2023, the patent family also includes pending patent applications in the United States, Australia, Brazil, Canada, China, Europe, Israel, Russia, Singapore, South Africa, and South Korea. The granted U.S., European, and Chinese claims are directed to IgM antibodies (in the first patents in the United States and Europe); IgM, IgA and hybrid antibodies (in Brazil, India, Russia, Singapore, and South Korea; in the first patent in Australia; in the second patents in United States and Europe; and in the first and second patents in Israel, Japan, and Mexico); and polymeric antibodies (in South Africa, in the third and fourth United States patent, patents, and in the second patent in Australia) comprising a modified J chain with a binding moiety fused or chemically conjugated to selected regions of the J chain. Related claims are being prosecuted in the pending applications.

Two A later-filed patent families are family is related to our “Modified J Chain” family. These two This patent families both have family has a projected expiration date of September 30, 2036, absent any patent term adjustments or extensions. Patent Patents and 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 or TIGIT. This family includes a granted patent in Europe (validated in Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Norway, Spain, Sweden, Switzerland, and the United Kingdom) and Japan. One patent application in this family is pending in the United States. 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. This patent family

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also supports product claims covering imvotamab. Patents, with including claims covering imvotamab, are granted in the United States (two patents), Japan and (two patents), Australia and a patent application with claims covering multimeric antibodies comprising a modified J chain comprising albumin is allowed in the United States. Canada. Patent applications in this family are pending in the United States, Australia, Canada, China, Europe (two applications), and Japan.

Our platform and manufacturing technology portfolio also includes a patent family with 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. The patent applications in this family have a projected expiration date of March 1, 2039, absent any patent term adjustments or extensions. This family includes a granted patent patents in the United States. States and Japan. The family includes pending applications in the United States, Australia, Brazil, Canada, China, Europe, Israel, India, Japan, South Korea, Mexico, New Zealand, and Singapore.

Our platform and manufacturing technology portfolio also includes a patent family that includes disclosure and claims related to IgM antibody Fc modifications that affect the ability of the IgM antibody to trigger complement-dependent cytotoxicity (CDC). Patent applications in this family disclose and claim single and combined human IgM Fc amino acid substitutions that reduce and/or completely inhibit IgM's typical CDC activity. Applications in this patent family have a projected expiration date of April 6, 2038, absent any patent term adjustments or extensions. This family includes a granted patent in the United States. Patent applications in this family are pending

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patents in the United States Australia, Canada, China, Europe, Israel, India, Japan, South Korea, Mexico, New Zealand, and Singapore.

Our platform and manufacturing technology portfolio includes a patent family that includes disclosure and claims related to multimeric molecules with non-antibody moieties on an IgM- or an IgA-based scaffold. For example, applications in this patent family cover IgM or IgA based fusion proteins that include, e.g., ligands, soluble portions of receptors, or cytokines. An exemplary molecule includes an IgM-based scaffold where the IgM heavy chain constant regions are fused to a soluble portion of PD-L1. Applications in this patent family have a projected expiration date of October 23, 2039, absent any patent term adjustments or extensions. Mexico. Patent applications in this family are pending in the United States, Australia, Canada, China, Europe, Israel, India, Japan, South Korea, Mexico, New Zealand, and Singapore.

Our platform and manufacturing technology portfolio also includes a patent family that discloses and claims highly sialylated multimeric binding molecules and methods of making the same. Applications in this family have a projected expiration date of January 5, 2041, absent any patent term adjustments or extensions. Patent applications in this family are pending in the United States, Australia, Brazil, Canada, China, Europe, Israel, India, Japan, South Korea, Mexico, Malaysia, New Zealand, Singapore and South Africa.
Our platform and manufacturing technology portfolio also includes a patent family that discloses and claims multimeric IgM antibodies comprising modifications that reduce asparagine-linked glycosylation. Applications in this family have a projected expiration date of August 21, 2040, absent any patent term adjustments or extensions. Patent applications in this family are pending in the United States, Australia, Brazil, Canada, China, Europe, Israel, India, Japan, South Korea, Mexico, New Zealand, and Singapore.

Our platform and manufacturing technology portfolio also includes a patent family that discloses and claims multimeric antibodies with enhanced selectivity for cells with high target density. Applications in this family have a projected expiration date of September 18, 2040,

absent any patent term adjustments or extensions. Patent applications in this family are pending in the United States, Australia, Canada, China, Europe, Israel, Japan, New Zealand, and Singapore.

Product Candidates and Discovery Pipeline

Our product candidates and discovery pipeline patent portfolio includes 24 27 patent families (21 (22 published, 24 families are wholly owned and three families are exclusively licensed; one family in common with the platform portfolio) including claims directed to our product candidates. These include six four patent families with claims directed to imvotamab (three (two published); and four patent families (three published) with claims directed to our DR5 IgM antibody product candidates, including IGM-8444 (three candidate aplitabart, and three patent families (one published), with claims directed to IGM-2644. Our wholly owned product and discovery pipeline portfolio also includes granted patents in the United States, Europe, and Israel with claims directed to IgM antibody superagonists specific for TNFrSF targets. As of December 31, 2022 December 31, 2023, our product and discovery pipeline portfolio includes 82 103 granted patents (27 (48 wholly owned and 55 exclusively licensed), 106 two allowed (one wholly owned and one exclusively licensed), 129 applications in active prosecution (103 (127 wholly owned and 3 2 exclusively licensed) in 17 25 countries or regions, four allowed applications (wholly owned), four three wholly-owned pending PCT applications, (three published; all wholly owned) and 14 seven unpublished pending U.S. provisional applications covering nine three families (13 (all wholly owned and one exclusively licensed) owned). These patent families are projected to expire between 2036 2025 and 2043, 2044, 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.

Three Two wholly owned published patent families with claims directed to imvotamab have projected expiration dates of March 4, 2036, and September 30, 2036, and November 17, 2041, respectively, absent any patent term adjustments or extensions. The first patent family includes claims directed to multimeric antibodies, e.g., IgM and IgA antibodies, that include the imvotamab CD20 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 includes claims that encompass the imvotamab composition, as well as methods of making and using the same. Patents with claims that cover imvotamab are granted in the United States, Australia, Brazil, China, Europe (validated in Austria, Belgium, Switzerland, Czech Republic, Germany, Denmark, Spain, Finland, France, Germany, Greece, Hong Kong, Hungary, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland, Slovenia, Turkey, and the United Kingdom), Israel, India, Japan, South Korea, and Singapore, and a patent application is allowed in Israel. Singapore. Patent

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applications in this family are pending in the United States, Australia, Canada, China, Europe, India, Israel, Japan (2 patent applications), South Korea, New Zealand (three patent applications), and Singapore. The second family (the “ADME” family referred to above under platform applications), includes claims directed to multimeric, e.g., IgM and IgA antibodies, that include the imvotamab CD20 antigen binding domains and a modified J chain, where the modified J chain is fused to an antigen-binding domain specific for CD3-epsilon and also

to human serum albumin (HSA). The application family also includes claims to methods of making and using the claimed antibodies. Patents with claims covering imvotamab are granted in the United States (two patents), Japan and (two patents), Australia and a patent application with claims covering multimeric antibodies comprising a modified J chain comprising albumin is allowed in the United States. Canada. Patent applications in this family are pending in the United States, Australia, Canada, China, Europe (two applications), and Japan. The third family has an international patent application, filed under that PCT that discloses and claims various methods of treatment with imvotamab, including specific dosing regimens. Patents granting from national stage applications filed from this PCT application will have a projected expiration date of November 17, 2041, absent any patent term adjustments or extensions The PCT application is in the international stage and will enter national stage prosecution on or before 17 May 2023 or 17 June 2023, depending on the jurisdiction.

Our patent portfolio also includes four three published patent families owned by us directed to our TNFrSF superagonist technology product candidate aplitabart. The application families, which we wholly own, have projected expiration dates of January 20, 2036, February 25, 2039, and product candidates. May 12, 2041, respectively, absent any patent term adjustments or extensions. The first published patent family includes disclosure and product 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 candidates. The application family, which we wholly own, has a projected expiration date of January 20, 2036, absent any patent term adjustments or extensions, candidate aplitabart and includes two three granted U.S. patents, as well as granted patents in Europe (validated in Austria, Belgium, Switzerland, Czech Republic, Germany, Denmark, Spain, Finland, France, Germany, Hong Kong, Hungary, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom), Australia (two patents), Israel, India, Japan, South Korea, New Zealand, and Singapore. The claims in the first granted US patent as well as the Australian patent are generically directed to IgM-based TNFrSF superagonists and their use in treating cancer patients. The European and Israeli patents contain similar claims, as well as claims that relate to our DR5 IgM product candidates, including IGM-8444. The claims in the second granted U.S. Patent and the granted patents in Japan, South Korea, New Zealand, and Singapore are directed to DR5 IgM product candidates, including IGM-8444. The patent family is also pending in Canada, China, Europe, India, Israel, Japan, New Zealand (two applications), and Singapore, with claims relating broadly to TNFrSF superagonists and also to DR5 superagonists. Claims directed to polynucleotides encoding our DR5 IgM product candidates are one allowed application in the United States.

Our Israel. The other two published patent portfolio includes a wholly owned patent family directed to a specific TNFrSF target, CD40. The CD40 family has a projected expiration date families include method of July 19, 2037, absent any patent term adjustments or extensions, and includes treatment 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, Canada, and Europe and a patent application is allowed in Australia.

Our patent portfolio includes a wholly owned patent family directed to combination cancer therapies that include a DR5 superagonist antibody, e.g., our DR5 IgM antibody product candidates, including IGM-8444, in combination with a chemotherapeutic agent, e.g., irinotecan, gemcitabine, or Venetoclax. Patent applications in this family are pending in the United States, Australia, Canada, China, Europe, Japan, and South Korea. This family has a projected expiration date of February 25, 2039, absent any patent term adjustments or extensions.

Our patent portfolio also includes a wholly owned patent family directed to combination cancer therapies that include a DR5 superagonist antibody, e.g., our DR5 IgM antibody product candidates, including IGM-8444, in combination with a cancer therapy, e.g., birinapant, oxaliplatin, carboplatin, paclitaxel, or radiation. Patent applications in this family have a projected expiration date of May 12, 2041, absent any patent term adjustments or extensions. Patent applications in this family are pending in the United States, Australia, Brazil, Canada, China, Europe, Israel, India, Japan, South Korea, Mexico, Malaysia, New Zealand, Singapore, and South Africa. therapies.

Our patent portfolio also includes three patent families exclusively licensed from Medivir AB that are related to small molecule SMAC mimetics, e.g., birinapant. The projected expiration dates of the first, second, and third families are July 15, 2025, February 27, 2026, and June 25, 2030, respectively, absent any patent term adjustments

or extensions. The first patent family includes three granted U.S. patents, as well as granted patents in Europe (validated in France, Germany, Italy, Spain, and the United Kingdom), Australia, Canada, Japan, and Mexico. The second patent family includes six granted U.S. patents, as well as granted patents in Europe (validated in Austria, Belgium, Switzerland, Germany, Denmark, Spain, Finland, France, Hong Kong (two patents), Hungary, Ireland, Italy, the Netherlands, Sweden, and the United Kingdom), Australia, Canada, China (two patents), Eurasia (validated in Russia), Israel, India, Japan, South Korea, Mexico (two patents), Singapore, and South Africa. The third patent family includes claims directed to the chemical species of birinapant and includes seven granted U.S. patents, as well as granted patents in Europe (validated in Austria, Belgium, Switzerland, Germany, Denmark, Spain, Finland, France, Hong Kong (two patents), Hungary, Ireland, Italy, the Netherlands, Sweden, and the United Kingdom), Australia, Brazil, Canada, Chile, China, Colombia, Eurasia (validated in Russia), Israel, India, Japan, South Korea, Mexico, Malaysia, New Zealand, Peru, the Philippines, Taiwan, Ukraine, and South Africa. Patent applications in the third family are pending in Thailand, Venezuela and one allowed in the United States, Thailand, and Venezuela. States.

Our patent portfolio also includes four a published patent families (two published) family related to IGM-7354, IGM-2644, our IL-15 x PD-L1 bispecific IgM antibody. The first patent family is directed 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 and includes granted patents in the United States, Europe (validated in Austria, Belgium, Switzerland, Germany, Denmark, Spain, Finland, France, Hong Kong, Hungary, Ireland, Italy, Luxemburg, the Netherlands, Norway, Poland, Portugal, Sweden, and the United Kingdom), China, Japan, South Korea, and Singapore. Patent applications in this family are pending in the United States, Australia, Canada, India, Israel, and New Zealand. The second patent family is wholly owned and is directed to the multimeric binding molecules comprising a J chain comprising an immunostimulatory agent, e.g., IL-15, and the claims cover our product candidate IGM-7354. Patent applications in this family have a projected expiration date of August 14, 2040, absent any patent term adjustments or extensions. Patent applications in this family are pending in the United States, Australia, Brazil, Canada, China, Europe, Israel, India, Japan, South Korea, Mexico, New Zealand, and Singapore.

Our patent portfolio also includes two families related to IGM-2537, our CD123 CD38 x CD3 bispecific IgM antibody. The first This patent family is directed to discloses and claims our proprietary anti-CD38 binding domains, multimeric CD123 x CD3 anti-CD38/anti-CD3 bispecific antibody. This application family, titled “Multimeric Bispecific Anti-CD123 Binding Molecules antibodies, and Uses Thereof,” has a projected expiration date method of August 14, 2040, absent any patent term adjustments or extensions. Patent applications in this family are pending in the United States, Australia, Brazil, Canada, China, Europe, Israel, India, Japan, South Korea, Mexico, New

Zealand, and Singapore. The second patent family includes a wholly owned international patent application, filed under the PCT that is directed to novel humanized CD123 antibodies. treatment. Patents granting from national stage applications filed from this PCT application will have a projected expiration date of February 17, 2042, absent any patent term adjustments or extensions.

Our patent portfolio also includes an unpublished patent family related to IGM-2644, or CD38 x CD3 bispecific IgM antibody. Applications in this family have a projected expiration date of February 3, 2042, absent any patent term adjustments of extensions.

Our patent portfolio also includes two patent families (one published) related to "viral trapping" of coronaviruses (including SARS-CoV2, the virus that causes Covid 19) that utilize the human ACE2 receptor for entry into cells. The first patent family, titled "Multimeric Coronavirus Binding Molecules and uses thereof," has a projected expiration date of July 27, 2041 February 3, 2043, absent any patent term adjustments or extensions. Patent applications in this family are pending The PCT application is in the United States, Europe, Canada, international stage and Australia. The second unpublished application has a projected expiration date of August 8, 2043, absent any patent term adjustments will enter national stage prosecution on or extensions. before 3 August 2024 or 3 September 2024, depending on the jurisdiction.

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

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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 largely upon the statutory 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 or similar proceedings in foreign jurisdictions, 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,

commercial approval, and post-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 commence
- 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 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 go 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

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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. In December 2022, the Consolidated Appropriations Act, 2023, including the The Food and Drug Omnibus Reform Act (FDORA), was signed into law. FDORA made several changes to the FDA's authorities and its regulatory framework, including, among other changes, reforms to reformed the accelerated approval pathway, such as requiring the FDA to specify conditions for post-approval study requirements and setting forth procedures for the FDA to withdraw a product on an expedited basis for non-compliance with post-approval requirements.

Fast track designation, breakthrough therapy designation, priority review and regenerative medicine advanced therapy (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.

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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.

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In *Catalyst Pharms., Inc. v. Becerra*, 14 F.4th 1299 (11th Cir. 2021), the court disagreed with the FDA's longstanding position that the orphan drug exclusivity only applies to the approved use or indication within an eligible disease. In particular, the circuit court held that the orphan-drug exclusivity for Catalyst's drug blocked FDA's approval of another drug for all uses or indications within the same orphan-designated disease, or Lambert-Eaton myasthenic syndrome (LEMS), even though Catalyst's drug was approved at that time only for use in the treatment of LEMS in adults. Accordingly, the court ordered the FDA to set aside the approval of a drug indicated for LEMS in children. This decision created uncertainty in the application of the orphan drug exclusivity. On January 24, 2023, the FDA published a notice in the Federal Register to clarify that while the agency complies with the court's order in *Catalyst*, FDA intends to continue to apply its longstanding interpretation of the regulations to matters outside of the scope of the *Catalyst* order – that is, the agency will continue tying the scope of orphan-drug exclusivity to the uses or indications for which a drug is approved, which permits other sponsors to obtain approval of a drug for new uses or indications within the same orphan designated disease or condition that have not yet been approved. It is unclear how future litigation, legislation, agency decisions, and administrative actions will impact the scope of the orphan drug exclusivity.

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 recall
- 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.

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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 (including any kickback, bribe or rebate), directly or indirectly, in cash or in kind, to induce, or in return for, either the referral of an individual, or the purchase, order or

recommendation of an item or service for which payment may be made, in whole or in part, under any federal and state healthcare programs. 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

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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 covered 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 and other transfers of value made to cover recipients, including physicians (defined to include doctors of medicine and osteopathy, dentists, podiatrists, optometrists and licensed chiropractors), certain non-physician healthcare professionals (such as physician assistants and nurse practitioners, among others), and teaching hospitals, as well as information regarding ownership and investment interests held by physicians, as defined by law, 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.

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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.

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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. For example, in June 2021 the U.S. Supreme Court held that Texas and other challengers had no legal standing to challenge the ACA, dismissing the case on procedural grounds without specifically ruling on the constitutionality of the ACA. Thus, the ACA will remain in effect in its current form. It is possible that the ACA will be subject to judicial or Congressional challenges in the future. It is unclear how any such challenges and healthcare measures promulgated by the Biden administration will impact the ACA, our business, financial condition and results of operations.

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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, which went into effect in April 2013 and will remain in effect through 2031, with the exception of a temporary suspension implemented under various COVID-19 relief legislation from May 1, 2020 through March 31, 2022, 2032, unless additional action is taken by Congress. Under current legislation, the actual reduction in Medicare payments will vary from 1% in 2022 to up to 4% in the final fiscal year of this sequester.

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, for example, under the American Rescue Plan Act of 2021, effective January 1, 2024, the statutory cap on Medicaid Drug Rebate Program rebates that manufacturers pay to state Medicaid programs will be eliminated. Elimination of this cap may require pharmaceutical manufacturers to pay more in rebates than it receives on the sale of products, which could have a material impact on our business. In August 2022, Congress passed the Inflation Reduction Act of 2022 (IRA), which includes prescription drug provisions that have significant implications for the pharmaceutical industry and Medicare beneficiaries, including allowing the federal government to negotiate a maximum fair price for certain high-priced single source Medicare drugs, imposing penalties and excise tax for manufacturers that fail to comply with the drug price negotiation requirements, requiring inflation rebates for all Medicare Part B and Part D drugs, with limited exceptions, if their drug prices increase faster than inflation, and redesigning Medicare Part D to reduce out-of-pocket prescription drug costs for beneficiaries, among other changes. Various industry stakeholders, including certain pharmaceutical companies and the Pharmaceutical Research and Manufacturers of America, have initiated lawsuits against the federal government asserting that the price negotiation provisions of IRA are unconstitutional. The impact of these judicial challenges, legislative, executive, and administrative actions and any future healthcare measures and agency rules implemented by the Biden administration government on us and the pharmaceutical industry as a whole is unclear. The implementation of cost containment measures or other

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healthcare reforms may prevent us from being able to generate revenue, attain profitability, or commercialize our product candidates if approved. 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. For example, a number of states are considering or have recently enacted state drug price transparency and reporting laws that could substantially increase our compliance burdens and expose us to greater liability under such state laws once we begin commercialization after obtaining regulatory approval for any of our products.

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 and Human Capital

As of December 31, 2022 December 31, 2023, we had 258 224 full-time employees, 201 174 of whom were engaged in research and development activities. In December 2023, we announced the Strategic Refocusing and a reduction in our workforce by approximately 22%. None of our employees are represented by labor unions or covered by collective bargaining agreements. We have not experienced any work stoppages and consider our relationship with our employees to be good.

Our human capital resources objectives include, as applicable, identifying, recruiting, retaining, and incentivizing our employees. The principal purposes of our equity and cash incentive plans are to attract, retain and reward personnel through the granting of stock-based and cash-based compensation awards, in order to increase stockholder value and the success of our company by motivating such individuals to remain focused on corporate objectives and to achieve our corporate objectives.

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Corporate Information

IGM Biosciences, Inc. was incorporated in Delaware in 1993 under the name Palingen, Inc. In December 2017, we established a Danish holding company (IGM Biosciences A/S (Holdco)); in April 2019, we dissolved 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.

IGM Biosciences, the IGM logo and our other registered or common law trademarks, trade names or service marks appearing in this Annual Report on Form 10-K are owned by us. This Annual Report on Form 10-K contains references to our trademarks and to trademarks belonging to other entities. Solely for convenience, trademarks and trade names referred to in this Annual Report on Form 10-K, 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.

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Available Information

Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, proxy and information statements and amendments to reports filed pursuant to Sections 13(a), and 15(d) of the Securities Exchange Act of 1934, as amended (the Exchange Act) are filed with the U.S. Securities and Exchange Commission (SEC). We are subject to the informational requirements of

the Exchange Act and file or furnish reports, proxy statements and other information with the SEC. The SEC maintains an Internet site that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC at www.sec.gov. Such documents and other information filed by us with the SEC are available free of charge on the Investor section of our website (investor.igmbio.com) when such reports are available on the SEC's website.

Investors and others should note that we may announce material information to the public through filings with the SEC, our website (www.igmbio.com), press releases, public conference calls, and public webcasts. We encourage our investors and others to review the information disclosed through such channels as such information could be deemed to be material information. Please note that this list may be updated from time to time.

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Item 1A. Risk Factors.

Investing in our common stock involves a high degree of risk. You should carefully consider the risks described below, as well as the other information in this Annual Report on Form 10-K, including our consolidated financial statements and the related notes and the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations." The occurrence of any of the events or developments described below could harm our business, financial condition, results of operations, growth prospects and stock price. In such an event, the market price of our common stock could decline, and you may lose all or part of your investment. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also impair our business operations. Our Risk Factors are not guarantees that no such conditions exist as of the date of this report, and should not be interpreted as an affirmative statement that such risks or conditions have not materialized, in whole or in part.

Risk Factor Summary

Our business operations are subject to numerous risks and uncertainties, including those outside of our control, that could cause our actual results to be harmed, including risks regarding 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 genera any product revenue.
- The use of engineered IgM antibodies is a novel and unproven therapeutic approach, and our development of our product candidates 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 ar efficacy of our product candidates. Furthermore, the results of previous preclinical studies and clinical trials may not be predictive

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 an 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 because 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 otherwis 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 devel and market products that are more effective, safer or less expensive than our product candidates, our commercial opportunities wi be negatively impacted.
- The manufacturing of our product candidates is complex. We and our third-party manufacturers have encountered and may contin to encounter difficulties in the production of our product candidates, and supply chain shortages have limited and may continue to limit our access to raw materials and other supplies. If we continue to encounter any such difficulties, our ability to manufacture dru substances or supply our product candidates for preclinical studies or clinical trials or, if approved, for commercial sale, could be further 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.
- We face risks related to health epidemics and other outbreaks, such as COVID-19, which could significantly disrupt our business operations or otherwise result in material adverse impact to us.
- Our future success depends on our ability to retain key executives and to attract, retain and motivate qualified personnel.

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- We have incurred significant losses since inception and anticipate that we will continue to incur losses for the foreseeable future. W 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.
- 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.

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- We will require substantial additional funding to finance our operations, which may not be available to us on acceptable terms, or a

all, and, if not available, may require us to delay, scale back or cease our product development programs or operations.

- Our future success depends on our ability to retain key executives and to attract, retain and motivate qualified personnel.
- 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.
- Our commercial success depends significantly on our ability to operate without infringing the patents and other proprietary rights o third parties.

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 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 F 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 our product candidates 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.

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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 otherwise non-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 our product candidates 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 such 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.

31 In addition, the FDA and other regulatory authorities may change their policies, issue additional regulations or revise existing regulations, any of which could delay our ability to obtain approvals, increase the costs of compliance or restrict our ability to maintain any regulatory approvals we may have obtained. If the Supreme Court reverses or curtails the Chevron doctrine, which gives deference to regulatory agencies in litigation against the FDA and other agencies, more companies may bring lawsuits against the FDA to challenge longstanding decisions and policies of the FDA, which could undermine the FDA's authority, lead to uncertainties in the industry, and disrupt the FDA's normal operations, which could delay the FDA's review of our regulatory submissions.

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Interim, preliminary or topline data from our clinical trials that we announce or publish from time to time may change as more patient data become available and are subject to audit and verification procedures that could result in material changes in the final data.

From time to time, we may publish interim, preliminary or topline data from clinical trials. Interim data from clinical trials that we may complete are subject to the risk that one or more of the clinical outcomes may materially change as patient enrollment continues and more patient data become available. 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. Adverse differences between interim, preliminary or topline data and final data could significantly harm our reputation and business prospects. 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. Moreover, preliminary, interim and topline data are subject to the risk that one or more of the clinical outcomes may materially change as more patient data become available when patients mature on study, patient enrollment continues or as other ongoing or future clinical trials with a product candidate further develop. Past results of clinical trials may not be predictive of future results. In addition, the information we choose to publicly disclose regarding a particular study or clinical trial is based on what is typically more extensive information, and you or others may not agree with what we determine is the material or otherwise appropriate information to include in our disclosure. Any information we determine not to disclose may ultimately be deemed significant with respect to future decisions, conclusions, views, activities or otherwise regarding a particular product candidate or our business. Similarly, even if we are able to can complete our planned and ongoing preclinical studies and clinical trials of our product candidates according to our current development timeline, the positive results from such preclinical studies and clinical trials of our product candidates may not be replicated in subsequent preclinical studies or clinical trial results. Moreover, preclinical, nonclinical and clinical data are often susceptible to varying interpretations and analyses, and many companies that believed their product candidates performed satisfactorily in preclinical studies and clinical trials nonetheless failed to obtain FDA or other regulatory approval.

We have obtained, and where appropriate in the future may seek, approval from the FDA or comparable foreign regulatory authorities through the use of expedited approval pathways, such as Fast Track designation and Breakthrough Therapy designation, orphan drug designation, or accelerated approval. Even if we receive accelerated approval from the FDA or comparable regulatory authorities, if our confirmatory clinical trials do not verify clinical benefit, or if we do not comply with rigorous post-marketing requirements, the FDA or such other regulatory authorities may seek to withdraw accelerated approval.

Where possible, we plan to pursue accelerated development strategies in areas of high unmet need. We may seek an accelerated approval pathway for one or more of our product candidates from the FDA or comparable foreign regulatory authorities. Under the accelerated approval provisions in the Federal Food, Drug, and Cosmetic Act, and the FDA's implementing regulations, the FDA may grant accelerated approval to a product candidate designed to treat a serious or life-threatening condition that provides meaningful therapeutic benefit over available therapies upon a determination that the product candidate has an effect on a surrogate endpoint or intermediate clinical endpoint that is reasonably likely to predict clinical benefit. The FDA considers a clinical benefit to be a positive therapeutic effect that is clinically meaningful in the context of a given disease, such as irreversible morbidity or mortality. For the purposes of accelerated approval, a surrogate endpoint is a marker, such as a laboratory measurement, radiographic image, physical sign, or other measure that is thought to predict clinical benefit, but is not itself a measure of clinical benefit. An intermediate clinical endpoint is a clinical endpoint that can be measured earlier than an effect on irreversible morbidity or mortality that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit. The accelerated approval pathway may be used in cases in which the advantage of a new drug over available therapy may not be a direct therapeutic advantage, but is a clinically important improvement from a patient and public health perspective. If granted, accelerated approval is usually contingent on the sponsor's agreement to conduct, in a diligent manner, additional post-approval confirmatory clinical trials to verify and describe the drug's clinical benefit. If such post-approval clinical trials fail

to confirm the drug's clinical benefit, the FDA may withdraw its approval of the drug. Further, in December 2022, the Consolidated Appropriations Act, 2023, including the Food and Drug Omnibus Reform Act (FDORA), was signed into law. FDORA made several changes to the FDA's authorities and its regulatory framework, including, among other changes, reforms to the accelerated approval pathway, such as requiring the FDA to specify conditions for post-approval study requirements and setting forth procedures for the FDA to withdraw a product on an expedited basis for non-compliance with post-approval requirements. In March 2023, the FDA issued a draft guidance on clinical trial considerations for supporting accelerated approval of oncology therapeutics, noting that although single-arm trials have been commonly used to support accelerated approval, a randomized controlled trial is the preferred approach for more robust efficacy and safety assessment. To the

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extent the FDA requires us to amend the design of our clinical trials or requires additional trials to meet changes in the data requirements for approval, our clinical timelines and approval will be delayed, which can have an adverse effect on our business and operations.

Prior to seeking accelerated approval, we may seek feedback from the FDA or comparable foreign regulatory authorities and will otherwise evaluate our ability to seek and receive such accelerated approval. There can be no assurance that after our evaluation of the feedback and other factors we will decide to pursue or submit a BLA Biologics License Application (BLA) for accelerated approval or any other form of expedited development, review or approval. Similarly, there can be no assurance that after subsequent feedback from the FDA, EMA or comparable foreign regulatory authorities, we will continue to pursue or apply for accelerated approval or any other form of expedited development, review or approval, even if we initially decide to do so. Furthermore, if we decide to submit an application for accelerated approval or under another expedited regulatory designation (e.g., Fast Track designation, Breakthrough Therapy designation or orphan drug designation), there can be no assurance that such submission or application will be accepted or that any expedited development, review or approval will be granted on a timely basis, or at all. The FDA, EMA or other comparable foreign regulatory authorities could also require us to conduct further clinical trials prior to considering our application or granting approval of any type. A failure to obtain accelerated approval or any other form of expedited development, review or approval for our product candidate would result in a longer time period to commercialization of such product candidate, could increase the cost of development of such product candidate and could harm our competitive position in the marketplace.

Fast Track designation is designed to facilitate the development and expedite the review of therapies for serious conditions and fill an unmet medical need. Programs with Fast Track designation may benefit from early and frequent communications with the FDA, potential priority review and the ability to submit a rolling application for regulatory review. Fast Track designation applies to both the product candidate and the specific indication for which it is being studied. If any of our product candidates receive Fast Track designation but do not continue to meet the criteria for Fast Track designation, or if our clinical trials are delayed, suspended or terminated, or put on clinical hold due to unexpected adverse events or issues with clinical supply, we will not receive the benefits associated with the Fast Track program. Furthermore, Fast Track designation does not change the standards for approval. Fast Track designation alone does not guarantee qualification for the FDA's priority review procedures.

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 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. For example, as a result because of supply chain constraints and staffing issues at one of our CMOs, we had to postpone the filing date of our IND application for IGM-7354 was adjusted and we had to make certain other adjustments, and we may have to make further adjustments in the future, with respect to this or other programs. one of our clinical candidates. We also experienced questions from the FDA on issues related to starting dose and sequencing of healthy volunteers and patients, delivery device and non-drug substance formulation components that delayed our original plans to advance IGM-6268, a former clinical candidate, into the clinic. The commencement or completion of these our 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 site or CROs, the terms of which can be subject to extensive negotiation and may vary significantly among different sites or CRO
- 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 impact of, and delays related to, health epidemics such as the COVID-19 pandemic; and
- the need to suspend, repeat or terminate clinical trials as a result of non-compliance with regulatory requirements, inconclus 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.

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If we experience delays or difficulties in the enrollment of patients in clinical trials, including as a result because 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 experience difficulties in patient enrollment in our clinical trials for a variety of reasons, including supply chain disruptions, staffing shortages and other business and economic disruptions resulting from geopolitical actions, including war and terrorism, natural disasters, including earthquakes, typhoons, floods and fires, as well as other disruptions resulting from the impact of public health factors, including the COVID-19 pandemic, business disruptions of our product candidates if strategic partners, third-party manufacturers, suppliers and other third parties upon which we are unable rely. The timely completion of clinical trials in accordance with their protocols depends, among other things, on our ability 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 who remain in the timing trial until completion of clinical trials, is affected by treatment and adequate follow-up. The enrollment of patients depends on many factors, including including:

- the size and nature of the patient population, population;
- the severity of the disease under investigation, investigation;
- the proximity of subjects to clinical sites and ability of subjects to travel to clinical trial sites;

- continued enrollment of prospective patients by clinical trial sites, sites;
- efforts to facilitate timely enrollment, enrollment;
- the eligibility criteria for the trial, trial;
- the design of the clinical trial, trial;
- patient referral practices of physicians, physicians;
- ability to obtain and maintain patient consents, consents;
- ability to monitor patients adequately during and after treatment, treatment;
- risk that enrolled subjects will drop out before completion and completion;
- clinicians' and patients' perceptions as to the potential advantages and disadvantages of the drug being studied in relation t other available therapies, including any new drugs that may be approved for the indications we are investigating. Further, investigating; and
- inability to enroll, or delay in enrollment of, patients may not be able to visit clinical trial sites for dosing or data collection purposes due to limitations on travel outbreaks and physical distancing imposed or recommended by federal or state governments or patients' reluctance to visit public health crises, such as the clinical trial sites during the COVID-19 pandemi

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 can 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 announced the dosing of the first patient Of our product candidates in our Phase 1 clinical trial of imvotamab, IGM-8444, and IGM-7354 in October 2019, September 2020, and January 2023, respectively. We active development, we have only disclosed initial early safety data in humans from our Phase 1 clinical trials, of imvotamab and IGM-8444. Our our preclinical and our discovery programs have not been tested on humans at all. While we We are encouraged by the safety profile of imvotamab in our Phase 1 clinical trial for and the treatment of relapsed/refractory NHL, and we have observed a relatively low rate of cytokine release syndrome (CRS) observed in the patients dosed to date, a few patients have experienced more serious CRS. While this observation is preliminary, particularly given the small number of patients, we are taking steps to address possible CRS in certain patients. It is possible that these steps or other steps that we take may not be successful, and our previous clinical trial; however, we may see additional cases of serious CRS in patients in future patients, clinical trials, which may delay our clinical testing of imvotamab or delay or prevent marketing approval in the future.

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. Despite our preclinical

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data, toxicity observations in clinical testing, if they occur, may limit our ability to develop our product candidates or may constitute a dose limiting toxicity.

The results of ongoing or future clinical trials may also show that our product candidates 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

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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 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 many 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.

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. We are aware of other companies with competing products or product candidates that target the same

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proteins, including CD20, DR5, CD38 and CD123, CD38, or that utilize similar mechanisms, including targeted and untargeted IL-15, as our product candidates in clinical or preclinical development.

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 have encountered and may continue to encounter difficulties in the production of our product candidates, and supply chain shortages have limited and may continue to limit our access to raw materials and other supplies. If we continue to encounter any such difficulties, our ability to manufacture drug substance or supply our product candidates for preclinical studies or clinical trials or, if approved, for commercial sale, could be further 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 manufacturers. In 2021, we completed construction and began to operate a cGMP manufacturing facility for the manufacture of clinical trial drug materials. We may construct additional manufacturing facilities to produce commercial supply for any approved products. To do so, we 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 all of our product candidates and discovery programs in preclinical studies and clinical trials. trials and currently rely on our third-party manufacturers for the majority of our product candidate production. Accordingly, we will may be required to make significant further 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, difficulties in scaling the production process and shipping issues. Even minor deviations from normal manufacturing processes could result in reduced production yields, product defects and other supply disruptions. For example, as a result because of supply chain constraints and staffing issues at one of our CMOs, we have previously adjusted had to adjust the anticipated filing date of our IND application for IGM-7354 and we have had to make certain other adjustments, and

we may have to make further adjustments in the future, with respect to this or other programs. our clinical candidates. 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, and we could be subject to sanctions, restrictions on the product candidate or on the manufacturing facilities, product liability claims or other adverse consequences, any of which could significantly and adversely affect supplies of our product candidates and harm our business and results of operations. Any interruption in the supply of clinical drug product from any cause could adversely affect the timing, enrollment and scope of our ongoing clinical trials.

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 cGMP. 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, 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 continue 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, be competitive with alternatives, or otherwise 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. For example, due in December 2023, we committed to the changing COVID-19 clinical and regulatory environment Strategic Refocusing, pursuant to which we discontinued suspended clinical development of IGM-6268 after completing the Phase 1 clinical trial. Similarly, our activities for certain product candidates. This decision or potential future 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, fail to recoup our research and development and other investments in the clinical programs we have selected, 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.

We face risks related to health epidemics and other outbreaks, such as COVID-19, which could significantly disrupt our operations or otherwise result in material adverse impacts to us.

Our business could be adversely impacted by the effects of health epidemics and other outbreaks, including:

- delays or difficulties in enrolling and retaining patients in our ongoing and planned clinical trials, and incurrence of additional co as a result of any preclinical study and clinical trial delays and adjustments;
- delays or difficulties in clinical site initiation, including difficulties in recruiting clinical site investigators and clinical site staff;
- shutdowns or continued business disruptions experienced by suppliers and other third parties with whom we conduct business
- diversion of healthcare resources away from the conduct of clinical trials, including the diversion of hospitals serving as our clin trial sites and hospital staff supporting the conduct of clinical trials;
- interruption or delays of key clinical trial activities, such as clinical trial site monitoring and collecting sufficient clinical data, pati safety considerations or limitations on travel imposed or recommended by federal or state governments, employers and others
- other limitations on resources that would otherwise be focused on the conduct of our business or our current or planned clinica trials or preclinical research, including because of sickness, the desire to avoid contact with large groups of people or governm restrictions;

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- delays in receiving approval from regulatory authorities to initiate our planned clinical trials;
- delays in receiving the supplies, materials and services needed to conduct clinical trials and preclinical research or to support manufacturing activities of our business and that of our suppliers or contractors;
- changes in clinical site policies and procedures for conducting clinical trials during the pandemic;
- changes in regulations as part of a response to health epidemics or other outbreaks which may require us to change the ways which our clinical trials are conducted and incur unexpected costs, or require us to discontinue the clinical trials altogether; and
- delays in necessary interactions with regulators, ethics committees and other important agencies and contractors.

On May 11, 2023, the federal government ended the COVID-19 public health emergency, which ended a number of temporary changes made to federally funded programs, although some continue to be in effect. We are actively monitoring, evaluating, and responding to developments relating to COVID-19, including new strains of the disease that have emerged in certain locations, vaccination status both locally and globally, and changing restrictions on travel and other protocols as set forth by the Centers for Disease Control and Prevention and other government authorities. disease. The extent to which COVID-19, including any variants that have emerged or may emerge in the future, or any other health epidemic impacts our results will depend on future developments, which are highly uncertain and cannot be predicted, including new information which may emerge concerning the severity of a particular virus and its variants and the actions to contain it or treat its impact, among others. We cannot at this time quantify or forecast the business impact of COVID-19, and there can be no assurance that we will be able to avoid a material impact on our business, financial condition and operating results from the spread of COVID-19 or its consequences, including disruption to our business and downturns in business sentiment generally or in our industry. In addition, the COVID-19 pandemic increases the likelihood and potential severity of other risks described in the “Risk

Factors" section. Recently, President Biden announced that the administration intends to end the COVID-19 national and public health emergencies on May 11, 2023. The full impact of the termination of the public health emergencies on FDA and other regulatory policies and operations are unclear.

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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 our senior management team, key employees and other highly-qualified managerial, scientific, and medical personnel. 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 provided by any of our senior management team, other key employees and other scientific and medical advisors, and any inability to find suitable replacements, 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. This high cost of living will increase the difficulty of attracting experienced personnel to our company, and we may be required to expend significant financial resources in our employee recruitment and retention efforts. Additionally, the U.S. has recently experienced historically high levels of inflation and an acute workforce shortage generally, which has created a hyper-competitive wage environment that may increase our operating costs.

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.

Material 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 ongoing, planned or 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.

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The design or execution of our 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.

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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 payor
- 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;

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- 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.

We may be unsuccessful, in obtaining or may be unable to maintain the benefits associated with, orphan drug designation for current or future product candidates that we may develop. If our competitors are able to obtain orphan product exclusivity for their

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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 elect to seek Orphan Drug Designation for certain indications for our product candidates. 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.

 In

Table *Catalyst Pharms., Inc. v. Becerra*, 14 F.4th 1299 (11th Cir. 2021), the court disagreed with the FDA's longstanding position that the orphan drug exclusivity only applies to the approved use or indication within an eligible disease. This decision created uncertainty in the application of Contents the orphan drug exclusivity. However, in January 2023, the FDA published a notice in the Federal Register to clarify that while the agency complies with the court's order in
Catalyst, the FDA intends to continue to apply its longstanding interpretation of the regulations to matters outside of the scope of the *Catalyst*

the uses or indications for which a drug is approved, which permits other sponsors to obtain approval of a drug for new uses or indications within the same orphan designated disease or condition that have not yet been approved. It is unclear how future litigation, legislation, agency decisions, and administrative actions will impact the scope of the orphan drug exclusivity.

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. One third-party payor's determination to provide coverage for a product candidate does not assure that other payors will also provide coverage for the product candidate. 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.

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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 focus our product candidate development on therapeutic IgM antibodies. 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 developments, such as the development of vaccines or new therapeutics, may change the estimated incidence or prevalence of the diseases targeted by our programs. 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 have in the past sought approval through clinical testing for certain product candidates for patients who have failed one or more approved treatments, and may do so again in the future. Even if we obtain regulatory approval and significant market share for such product candidates, 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 would likely have to conduct additional clinical trials prior to gaining approval as an earlier line of treatment.

Development of product candidates in combination with other therapies could expose us to additional risks.

Even if any of our product candidates were to receive marketing approval or be commercialized for use in combination with other existing therapies, we would continue to be subject to the risks that the FDA or other comparable foreign regulatory authorities could revoke approval of the therapy used in combination with any of our product candidates, or safety, efficacy, manufacturing or supply issues could arise with these existing therapies. In addition, it is possible that existing therapies with which our product candidates are approved for use could themselves fall out of favor or be relegated to later lines of treatment. This could result in the need to identify other combination therapies for our product candidates or our own products being removed from the market or being less successful commercially. We may also evaluate our product candidates in combination with one or more other cancer therapies that have not yet been approved for marketing by the FDA or comparable foreign regulatory authorities. We will not be able to market and sell any product candidate in combination with any such unapproved cancer therapies that do not ultimately obtain marketing approval. If the

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FDA or other comparable foreign regulatory authorities do not approve or revoke their approval of these other therapies, or if safety, efficacy, commercial adoption, manufacturing or supply issues arise with the therapies we choose to evaluate in combination with any other product candidate, we may be unable to obtain approval of or successfully market any one or all of the product candidates we develop.

Additionally, if the third-party providers of therapies or therapies in development used in combination with our product candidates are unable to produce sufficient quantities for clinical trials or for commercialization of our product candidates, or if the cost of combination therapies are prohibitive, our development and commercialization efforts would be impaired, which would have an adverse effect on our business, financial condition, results of operations and growth prospects.

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 cGMP 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.

Further, the FDA strictly regulates marketing, labeling, advertising and promotion of products that are placed on the market. Products may be promoted only for the approved indications and in accordance with the provisions of the approved label. While physicians may prescribe, in their independent professional medical judgment, products for off-label uses as the FDA does not regulate the behavior of physicians in their choice of drug treatments, the FDA does restrict manufacturer's communications on the subject of off-label use of their products. Companies may only share truthful and not misleading information that is otherwise consistent with a product's FDA approved labeling. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses and a company that is found to have improperly promoted off-label uses may be subject to significant liability including, among other things, adverse publicity, warning letters, corrective advertising and potential civil and criminal penalties. The federal government has levied large civil and criminal fines against companies for alleged improper promotion of off-label use and has enjoined companies from engaging in off-label promotion. The FDA and other regulatory agencies have also required that companies enter into consent decrees or permanent injunctions under which specified promotional conduct is changed or curtailed.

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.

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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 we 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) 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.

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 December 31, 2022, we had 258 full-time 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 research, 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 multiple risks relative to

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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 these 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, ransomware or other malicious code, or breaches or incidents due to employee error, malfeasance or other disruptions.

We and the third parties upon which we rely may be subject to a variety of evolving threats, including but not limited to social-engineering attacks (including through phishing attacks), viruses, worms, and other malicious code, ransomware and other malware (including as a result of advanced persistent threat intrusions), denial-of-service attacks (such as credential stuffing), personnel misconduct or error, ransomware attacks, software bugs, server malfunctions, software or hardware failures, loss, corruption and other unavailability of data or other information technology assets, adware, telecommunications failures, earthquakes, fires, floods, and other similar threats.

Ransomware attacks, including those perpetrated by organized criminal threat actors, nation-states, and nation-state-supported actors, are becoming increasingly prevalent and severe and can lead to significant interruptions in our operations, loss of data and income, reputational harm, and diversion of funds. Extortion payments may reduce or alleviate negative impact of a ransomware attack, but we may be unwilling or unable to make such payments due to, for example, applicable laws or regulations prohibiting such payments.

Similarly, supply-chain attacks have increased in frequency and severity, and we cannot guarantee that third parties and infrastructure in our supply chain or our third-party partners' supply chains have not been compromised or that they do not contain exploitable defects or bugs that could result in a breach of or disruption to our information technology systems (including our products/services) or the third-party information technology systems that support us and our services.

Any such breach or interruption could compromise our networks and systems and the information stored there could be accessed by unauthorized parties, publicly disclosed, lost or stolen. Any such access, disclosure or other loss, unavailability, or other unauthorized processing of information, or the perception that it has occurred, 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), the EU General Data Protection Regulation (EU GDPR) and UK General Data Protection Regulation (UK GDPR), 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 breaches or incidents or the information in or processed by such systems from compromise. 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. We and the third parties upon which we rely may face difficulties or delays in identifying and responding to any breach or incident. We may be required to expend significant amounts to address security risks, whether in connection with an actual or perceived breach or incident or otherwise.

Our contracts may not contain limitations of liability, and even where they do, there can be no assurance that limitations of liability in our contracts are sufficient to protect us from liabilities, damages, or claims related to privacy, data protection, or data security. We cannot be sure that our insurance coverage will be adequate or sufficient to protect us from or to mitigate liabilities arising out of our privacy, data protection, or data security practices, that such coverage will continue to be available on commercially reasonable terms or at all, or that such coverage will pay future claims.

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We are subject to stringent and changing obligations related to privacy, data protection and security. Our actual or perceived failure to comply with such obligations could lead to regulatory investigations or actions; litigation; fines and penalties; disruptions of our business operations; reputational harm; loss of revenue or profits; loss of customers or sales; and other adverse business consequences.

Our data processing activities subject us to numerous obligations relating to privacy, data protection and data security, such as various laws, regulations, guidance, industry standards, external and internal privacy and security policies, contracts, and other obligations that govern the processing of personal data by us and on our behalf. 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. For example, the California Consumer Privacy Act (the CCPA), which went into effect on January 1, 2020, among other things, requires new disclosures to California consumers and affords such consumers new abilities to opt out of certain sales of personal information. The CCPA provides civil penalties for violations, as well as a private right of action for data breaches that is expected to increase data breach litigation. Aspects of the CCPA, and its interpretation and enforcement remain uncertain. The effects of this legislation potentially are far-reaching and may require us to modify our data processing practices and policies and incur substantial compliance-related costs and expenses. The CCPA has been amended on multiple occasions, and it is unclear whether it will be further amended.

In addition, California voters recently passed the California Privacy Rights Act (CPRA), which modifies the CCPA significantly as of January 1, 2023, potentially resulting in further uncertainty and requiring us to incur additional costs and expenses in an effort to comply.

Although the CCPA includes exemptions for certain clinical trials data, the law may increase our compliance costs and potential liability with respect to other personal information we collect about California consumers. In addition, several states within the United States have enacted or proposed data privacy laws. For example, Virginia passed the Consumer Data Protection Act, Colorado passed the Colorado Privacy Act, Utah passed the Utah Consumer Privacy Act, and Connecticut enacted similar legislation. It is possible that these laws and regulations 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 laws and regulations relating to privacy, data protection and data security 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.

Outside the United States, an increasing number of laws, regulations, and industry standards apply to privacy, data protection and security. For example, the EU GDPR and the UK GDPR impose strict requirements for processing the personal data of individuals. These laws, regulations, and standards can create complex, demanding compliance obligations, and they carry substantial penalties for noncompliance. For example, under the EU GDPR, government regulators may impose temporary or definitive bans on data processing, as well as fines of up to 20 million euros or 4% of annual global revenue, whichever is greater. The UK GDPR has a similar penalty regime. Further, individuals may initiate litigation related to our processing of their personal data. Our efforts to comply with these various laws and regulations 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.

Further, because the interpretation and application of many laws and regulations relating to privacy, security, and data protection, along with mandatory industry standards, are uncertain, it is possible that these laws, regulations and standards, or contractual obligations to which we are or may become subject, may be interpreted and applied in a manner that is inconsistent with our existing or future data management practices. Any failure or perceived failure by us to comply with our posted privacy policies, our privacy-related obligations to users or other third parties, or any other legal obligations or regulatory requirements relating to privacy, data protection or data security, may result in governmental investigations or enforcement actions, litigation, claims, or public statements against us or public censure and could result in significant liability, cause harm to our brand and reputation, and otherwise materially and adversely affect our reputation and business.

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Furthermore, the loss, corruption, or unavailability of clinical trial data from ongoing, 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.

Our revenue prospects could be affected by changes in healthcare spending and policy in the United States and abroad. We operate in a highly regulated industry and new laws, regulations or judicial decisions, or new interpretations of existing laws, regulations or decisions, related to healthcare availability, the method of delivery or payment for healthcare products and services could negatively impact our business, operations and financial condition. There have been, and likely will continue to be, legislative and regulatory proposals at the foreign, federal and state levels directed at broadening the availability of healthcare and containing or lowering the cost of healthcare, including proposals aimed at lowering prescription drug prices and increasing competition for prescription drugs, as well as additional regulation on pharmaceutical transparency and reporting requirements, any of which could negatively impact our future profitability and increase our compliance burden. We cannot predict the initiatives that may be adopted in the future. The continuing efforts of the government, insurance companies, managed care organizations and other payors of healthcare services to contain or reduce costs of healthcare and/or impose price controls may adversely affect:

- The demand for our product candidates, if approved;
- Our ability to set a price that we believe is fair for our products;
- Our ability to obtain coverage and reimbursement approval for a product;
- Our ability to generate revenue and achieve or maintain profitability;
- The level of taxes that we are required to pay; and
- The availability of capital.

Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors, which may adversely affect our future profitability.

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;

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- 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;

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- 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, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D;
- 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 the 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 governme 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 mode to lower Medicare and Medicaid spending, potentially including prescription drug spending.

Since its enactment, there remain judicial and Congressional challenges to certain aspects of the ACA. For example, in June 2021 the U.S. Supreme Court held that Texas and other challengers had no legal standing to challenge the ACA, dismissing the case on procedural grounds without specifically ruling on the constitutionality of the ACA. Thus, the ACA will remain in effect in its current form. 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, due to subsequent legislative amendments will remain in effect through 2031, 2032, with the exception of a temporary suspension implemented under various COVID-19 relief legislation from May 1, 2020 through March 31, 2022. Under current legislation, the actual reduction in Medicare payments can vary from 1% in 2022 to up to 4% in the final fiscal year of this sequester. legislation. 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.

Under the American Rescue Plan Act of 2021, effective January 1, 2024, the statutory cap on Medicaid Drug Rebate Program rebates that manufacturers pay to state Medicaid programs will be eliminated. Elimination of this cap may require pharmaceutical manufacturers to pay more in rebates than it receives on the sale of products, which could have a material impact on our business. Further, based on a recent executive order, the Biden administration expressed its intent to pursue certain policy initiatives to reduce drug prices. The HHS has released a Comprehensive Plan for Addressing High Drug Prices that outlines principles for drug pricing reform and potential legislative policies that Congress could pursue to advance these principles. In August 2022, Congress passed the Inflation Reduction Act of 2022, IRA, which includes prescription drug provisions that have significant implications for the pharmaceutical industry and Medicare beneficiaries, including allowing the federal government to negotiate a maximum fair price for certain high-priced single source Medicare

drugs, imposing penalties and excise tax for manufacturers that fail to comply with the drug price negotiation requirements, requiring inflation rebates for all

Medicare Part B and Part D drugs, with limited exceptions, if their drug prices increase faster than inflation, and redesigning Medicare Part D to reduce out-of-pocket prescription drug costs for beneficiaries, among other changes. Various industry stakeholders, including the U.S. Chamber of Commerce, the National Infusion Center Association, the Global Colon Cancer Association, and the Pharmaceutical Research and Manufacturers of America have initiated lawsuits against the federal government asserting that the price negotiation provisions of the IRA are unconstitutional. The impact of these judicial challenges as well as future legislative, executive, and administrative actions and any future healthcare measures and agency rules implemented by the Biden administration on us and the pharmaceutical industry as a whole is unclear. The implementation of cost containment measures, including the prescription drug provisions under the Inflation Reduction Act, IRA, as well as other healthcare reforms may prevent us from being

able to generate revenue, attain profitability, or commercialize our product candidates if approved. Uncertainties created by the IRA and other cost containment measures may negatively impact potential investments, company valuation, royalty-based earnings, mergers and acquisitions in our industry. Complying with any new legislation and regulatory changes could be time-intensive and expensive, resulting in a material adverse effect on our business.

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 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, including delays or disruptions due to the COVID-19 pandemic, travel restrictions, staffing shortages, 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 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. Separately, in response to the COVID-19 pandemic, since March 2020 when foreign and domestic inspections of facilities were largely placed on hold, the FDA worked to resume normal operations. In 2020 and 2021, a number of companies announced receipt of complete response letters due to the FDA's inability to complete required inspections for their applications. While the FDA has largely caught up with domestic preapproval inspections, it continues to work through its backlog of foreign inspections. However, the FDA may not be able to continue its current inspection pace, and review timelines could be extended, including where a pre-approval inspection or an inspection of clinical sites is required and due to the ongoing COVID-19

pandemic and travel restrictions, the FDA is unable to complete such required inspections during the review period. Regulatory authorities outside the U.S. may adopt similar restrictions or other policy measures in response to the COVID-19 pandemic and may experience delays in their regulatory activities. If a prolonged government shutdown or disruption occurs, it could significantly impact the ability of the FDA or other regulatory authorities to timely review and process our regulatory submissions and provide feedback on our clinical development plans, which could have a material adverse effect on our business and our anticipated timelines. Further, in our operations as a public company, future government shutdowns or other disruptions to normal operations 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. Some of our clinical trial sites as well as some of our suppliers and collaborators, are located outside of the United States. We may also enter into additional non-U.S markets. 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;

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- 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 (such as the ongoing conflict between Russia and Ukraine) and terrorism, or natural disasters, including earthquakes, typhoons, floods and fires, or outbreaks of public health epidemics emergencies such as the COVID-19 pandemic.

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

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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, offerin receiving or providing remuneration (including any kickback, bribe or rebate), directly or indirectly, in cash or in kind, to induc 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, in whole or in part, under federal and state healthcare programs such as Medicare and Medicaid;
- federal civil and criminal false claims laws, including the civil False Claims Act, which can be enforced by private citizens on behalf of the government, through civil whistleblower, or qui tam actions, and the federal civil monetary penalty laws, which impose criminal and civil penalties against individuals or entities, among other things, for knowingly presenting, or causing to be presented, false or fraudulent claims for payment of federal funds, and knowingly making, or causing to be made, false record or statement material to a false or fraudulent claim 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, 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 c 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 on covered entities, including certain healthcare providers, health plans and healthcare clearinghouses as well as their respective business associates that create, receive, maintain or transmit individually health information for or on behalf of a covered entity and their subcontractors that use, disclose or otherwise process

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individually identifiable health information, 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, which 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), certain non-physician healthcare professionals (such as physician assistants and nurse practitioners, among others), and teaching hospitals, and information regarding ownership and investment interests held by physicians (as defined above) and their immediate family members. The information reported annually is publicly available c a searchable website website;

- analogous state and foreign laws and regulations, including: state anti-kickback and false claims laws which may apply to ou business practices, including, but not limited to, research, distribution, sales and marketing arrangements and claims involvi 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 complian 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 have committed a 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

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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.

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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, 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 or economic disruptions could seriously harm our business and financial condition and increase our costs and expenses.

Our operations, and those of our CROs, clinical trial sites, suppliers, regulators, and other third parties with whom we engage, 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, epidemics, pandemics such as the COVID-19 pandemic, and other natural or man-made disasters or business interruptions. 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. We cannot presently predict the scope and severity of any potential business shutdowns or disruptions, but if we or any of the third parties with whom we engage, including the suppliers, CROs, clinical trial sites, regulators and other third parties with whom we conduct business, were to experience shutdowns or other business disruptions, our

ability to conduct our business in the manner and on the timelines presently planned could be materially and negatively impacted.

All of our operations are located in Mountain View, California and Doylestown, Pennsylvania, with our corporate headquarters 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 years ended December 31, 2022 December 31, 2023, 2022, and 2021 and 2020 was $246.4 million, $221.1 million, $165.2 million, and $81.4 million $165.2 million, respectively. As of December 31, 2022 December 31, 2023, our accumulated deficit was approximately $574.8 million $821.2 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

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operations as a public company. Historically we have financed our operations primarily through the sale of equity and debt securities as well as funding received from our collaboration partners. We do not generate any revenue from product sales and our product candidates will require substantial additional investment before they may provide us with any revenue, if ever.

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, preclinical studies and clinical trials, 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.

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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 obtai 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 communi 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;

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- 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.

We will require substantial additional funding to finance our operations, 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 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 have incurred and expect to continue to incur in connection with operating as a public company. Such funding may not be available on acceptable terms or at all.

As of December 31, 2022 December 31, 2023, we had $427.2 million $337.7 million in cash, cash equivalents, and marketable securities. We believe that our existing cash, cash equivalents, and marketable securities will enable us to fund our operating expenses and capital expenditure requirements for at least one year past the issuance date of the consolidated financial statements

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included elsewhere in this Annual Report on Form 10-K. Our estimate as to how long we expect our cash, cash equivalents, and marketable securities 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 c 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 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 impact of macroeconomic conditions, including inflation, supply chain disruption and volatility in the capital markets, on c business, financial condition and results of operations;
- 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 commitmen or agreements relating to any of these types of transactions.

Until we can generate a sufficient amount of enough product revenue to finance our cash requirements, which we may never do, we expect to finance future cash needs primarily through one or more 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, restrict our operations or require us to relinquish substantial rights.

We may from time to time raise additional capital through the sale of equity or convertible securities, including pursuant to an effective shelf registration statement. If we issue additional shares of common stock at a discount from the current trading price of our common stock, our stockholders would experience immediate dilution upon the

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purchase of any shares of our common stock sold at such discount. In addition, as opportunities present themselves, we may enter into financing or similar arrangements in the future, including the issuance of debt securities, preferred stock, common stock, or non-voting common stock. On April 1, 2022, pursuant to our registration statement on Form S-3 (File No. 333-258644), we completed a public offering of 8,695,653 shares of our non-voting common stock, with an option for the underwriters to purchase 1,304,347 shares of our voting common stock, which was exercised in full, for aggregate gross proceeds of $230.0 million. After deducting underwriting discounts

and commissions and offering costs paid or payable by us of approximately $12.0 million, the aggregate net proceeds from this public offering were approximately $218.0 million.

If in the future we issue shares of common stock or securities convertible into common stock, our stockholders would experience dilution and, as a result, the market price of our common stock may decline. We cannot predict the effect that future sales of our common stock would have on the market price of our common stock. Additionally, our stockholders may be further diluted by the exercise of the pre-funded warrants issued in December 2020 (see Note 8 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K for additional information) and any issuance of our voting common stock issuable upon the conversion of shares of non-voting common stock currently outstanding.

Further, if we raise additional capital through the sale of equity or convertible securities, the terms of these new securities may include liquidation or other preferences that adversely affect your rights as a 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. For example, the current conflict between Ukraine and Russia has ongoing armed conflicts have created volatility in the capital markets and is are expected to have further global economic consequences. 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.

At December 31, 2022 December 31, 2023, we had $427.2 million $337.7 million of cash, cash equivalents, and marketable securities. While we are not aware of any downgrades, material losses, or other significant deterioration in the fair value of our cash equivalents or marketable securities since December 31, 2022 December 31, 2023, no assurance can be given that further deterioration of the global credit and financial markets would not negatively impact our current portfolio of cash equivalents or our ability to meet our financing objectives. Furthermore, our stock price may decline due in part to the volatility of the stock market and general economic downturn.

60 Risks Related to Managing Our Growth and Operations

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 our senior management team, key employees and other highly-qualified managerial, scientific, and medical personnel. 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 provided by any of our senior management team, other key employees and other scientific and medical advisors, and any inability to find suitable replacements, 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. This high cost of living will increase the difficulty of attracting experienced personnel to our company, and we may be required to expend significant financial resources in our employee recruitment and retention efforts. Additionally, the U.S. has recently experienced historically high levels of inflation and an acute workforce shortage generally, which has created a hyper-competitive wage environment that may increase our operating costs. Any changes in our compensation structure, workforce reductions (including the reduction in force we announced in December 2023), or other cost reduction efforts may be negatively received by employees and result in attrition or recruiting difficulties.

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.

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

As of December 31, 2023, we had 224 full-time 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 research, 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. In December 2023, we announced a reduction in our workforce by approximately 22% as part of our commitment to the Strategic Refocusing. 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, store, and otherwise process 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 multiple 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 these risks.

The secure storage, maintenance, transmission, and other processing 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 service provider we may use, whether they rely on our network and systems or their own to render service, may be vulnerable to cybersecurity attacks by hackers or viruses, ransomware or other malicious code, or breaches or incidents due to employee error, or malfeasance, other disruptions, or other causes. While we have not experienced cyber incidents that have been determined to be material in the past, either individually or in the aggregate, we and our third-party providers have experienced cyberattacks in the past. For example, in December 2023, an unidentified actor briefly gained unauthorized access to an employee account. We promptly detected and responded to the incident and terminated the unauthorized access. We engaged cybersecurity and other specialists to assist in the response to the incident. The unauthorized actor did access certain company information, but the incident did not adversely impact our operations.

We and the third parties upon which we rely may be subject to a variety of evolving threats, including but not limited to social-engineering attacks (including through phishing attacks), viruses, worms, and other malicious code, ransomware and other malware (including as a result of advanced persistent threat intrusions), denial-of-service attacks (such as credential stuffing), personnel misconduct or error, ransomware attacks, software bugs, server malfunctions, software or hardware failures, loss, corruption and other unavailability of data or other information technology assets, adware, telecommunications failures, natural disasters, and other similar threats.

Ransomware attacks, including those perpetrated by organized criminal threat actors, nation-states, and nation-state-supported actors, are becoming increasingly prevalent and severe and can lead to significant interruptions in our operations, loss of data and income, reputational harm, and diversion of funds. Extortion payments may reduce or alleviate negative impact of a ransomware attack, but we may be unwilling or unable to make such payments due to, for example, applicable laws or regulations prohibiting such payments.

Similarly, supply-chain attacks have increased in frequency and severity, and we cannot guarantee that third parties and infrastructure in our supply chain or our third-party partners' supply chains have not been compromised or that they do not contain exploitable defects or bugs that could result in a breach of or disruption to our information technology systems (including our products/services) or the third-party information technology systems that support us and our services.

Any such breach or interruption could compromise our networks and systems and the information stored there could be accessed by unauthorized parties, publicly disclosed, lost or stolen. Any such access, disclosure or other loss, unavailability, or other unauthorized processing of information, or the perception that it has occurred, 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), the EU General Data Protection Regulation (EU GDPR) and UK General Data Protection Regulation (UK GDPR), 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 breaches or incidents or the information in or processed by such systems from compromise. Unauthorized access to, or loss, unavailability, corruption, dissemination, or other processing 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. We and the third parties upon which we rely may face difficulties or delays in identifying and responding to any actual or perceived breach or incident. We may be required to expend significant amounts to address security risks, whether in connection with an actual or perceived breach or incident or otherwise.

Our contracts may not contain limitations of liability, and even where they do, there can be no assurance that limitations of liability in our contracts are sufficient to protect us from liabilities, damages, or claims related to privacy, data protection, or data security. We cannot be sure that our insurance coverage will be adequate or sufficient to protect us from or to mitigate liabilities arising out of our privacy, data protection, or data security practices, that such coverage will continue to be available on commercially reasonable terms or at all, or that such coverage will pay future claims.

We are subject to stringent and changing obligations related to privacy, data protection and security. Our actual or perceived failure to comply with such obligations could lead to regulatory investigations or actions; litigation; fines and penalties; disruptions of our business operations; reputational harm; loss of revenue or profits; loss of customers or sales; and other adverse business consequences.

Our data processing activities subject us to numerous obligations relating to privacy, data protection and data security, such as various laws, regulations, guidance, industry standards, external and internal privacy and security policies, contracts, and other obligations that govern the processing of personal data by us and on our behalf. 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. For example, the California Consumer Privacy Act (the CCPA), which went into effect on January 1, 2020, among other things, requires new disclosures to California consumers and affords such consumers new abilities to opt out of certain sales of personal information. The CCPA provides civil penalties for violations, as well as a private right of action for data breaches that is expected to increase data breach litigation. Aspects of the CCPA, and its interpretation and enforcement remain uncertain. The effects of this legislation potentially are far-reaching and may require us to modify our data processing practices and policies and incur substantial compliance-related costs and expenses. The CCPA has been amended on multiple occasions, and it is unclear whether it will be further amended.

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In addition, California voters recently passed the California Privacy Rights Act (CPRA), which modified the CCPA significantly as of January 1, 2023, potentially resulting in further uncertainty and requiring us to incur additional costs and expenses in an effort to comply. Although the CCPA includes exemptions for certain clinical trials data, the law may increase our compliance costs and potential liability with respect to other personal information we collect about California consumers. In addition, several states within the United States have enacted or proposed data privacy laws. For example, Virginia, Colorado, Utah, Connecticut, Iowa, Indiana, Florida, Montana, Oregon, Texas, Tennessee, and Delaware have enacted similar legislation. Further, other states have enacted laws that cover certain aspects of the collection, use, disclosure, and/or other processing of health information, such as Washington's My Health, My Data Act, which, among other things, provides a private right of action. It is possible that these laws and regulations may be interpreted and applied in a manner that is inconsistent with our practices, or for this to be perceived to be the case. Such interpretation and application could result in government-imposed fines or orders requiring that we change our practices, which could adversely affect our business. In addition, these laws and regulations relating to privacy, data protection and data security 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.

Outside the United States, an increasing number of laws, regulations, and industry standards apply to privacy, data protection and security. For example, the EU GDPR and the UK GDPR impose strict requirements for processing the personal data of individuals. These laws, regulations, and standards can create complex, demanding compliance obligations, and they carry substantial penalties for noncompliance. For example, under the EU GDPR, government regulators may impose temporary or definitive bans on data processing, as well as fines of up to 20 million euros or 4% of annual global revenue, whichever is greater. The UK GDPR has a similar penalty regime. Further, individuals may initiate litigation related to our processing of their personal data. Our efforts to comply with these various

laws and regulations 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.

Further, because the interpretation and application of many laws and regulations relating to privacy, security, and data protection, along with mandatory industry standards, are uncertain, it is possible that these laws, regulations and standards, or contractual obligations to which we are or may become subject, may be interpreted and applied in a manner that is inconsistent with our existing or future data management practices. Any failure or perceived failure by us to comply with our posted privacy policies, our privacy-related obligations to users or other third parties, or any other legal obligations or regulatory requirements relating to privacy, data protection or data security, may result in governmental investigations or enforcement actions, litigation, claims, or public statements against us or public censure and could result in significant liability, cause harm to our brand and reputation, and otherwise materially and adversely affect our reputation and business.

Furthermore, the loss, corruption, or unavailability of clinical trial data from ongoing, 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.

Our operations are vulnerable to interruption by catastrophic events, which could harm our business and financial condition.

Our operations, and those of our CROs, clinical trial sites, suppliers, regulators, and other third parties with whom we engage, could be subject to natural disasters, power outages, telecommunications failures, failures or breaches of information technology systems, epidemics, pandemics, and other natural or man-made disasters or business interruptions. 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. We cannot presently predict the scope and severity of any potential business shutdowns or disruptions, but if we or any of the third parties with whom we engage, including the suppliers, CROs, clinical trial sites, regulators and other third parties with whom we conduct business, were to experience shutdowns or other business disruptions, our ability to conduct our business in the manner and on the timelines presently planned could be materially and negatively impacted.

All of our operations are located in Mountain View, California and Doylestown, Pennsylvania, with our corporate headquarters 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.

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

As of December 31, 2022, we had net operating loss (NOL) carryforwards available to reduce future taxable income, if any, for federal and state income tax purposes of approximately $261.1 million and $365.2 million, respectively. At December 31, 2022, we also had federal and California research and development tax credit carryforwards of $25.1 million and $14.0 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. We completed a Section 382 study and believe we have experienced at least two changes in ownership. Consequently, we may be limited in our ability to use our NOL carryforwards and other tax assets in a future year if taxable income in that given year exceeds our cumulative 382 NOL utilization limits through that specific year. As a result, even if we attain profitability, it is possible 382 limitations on the ability to use our NOL carryforwards and other tax assets could adversely affect our future cash flows. In addition, our NOL carryforwards may be unavailable to offset future taxable income because of restrictions under U.S. tax law. The Tax Cuts and Jobs Act of 2017 (Tax Act), as modified by the CARES 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 in tax years beginning on or after January 1, 2021.

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. or foreign taxation of such activities may increase our worldwide effective tax rate and adversely affect our business, results of operations and financial condition. For example, the Organization for Economic Cooperation and Development has proposed implementing a global minimum tax of 15%, referred to as Pillar 2, which has been agreed to by over 136 countries. Pillar 2 was adopted by the European Union for implementation by its member states into national legislation by the end of 2023 and may be adopted by other jurisdictions. In addition, on January 1, 2022, a provision of the Tax Cuts and Jobs Act of 2017 went into effect that eliminates the option to deduct domestic research and development costs in the year incurred and instead requires taxpayers to amortize such costs over five years. In 2022, the United States also enacted the Inflation Reduction Act, IRA, which imposes, among others, a 1% excise tax on certain repurchases of stock and a 15% alternative minimum income tax on "adjusted financial statement income" of certain corporations. Such changes, among others, may adversely affect our effective tax rates, cash flows and general business condition.

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 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 tl 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.

Adverse events or perceptions affecting the financial services industry could adversely affect our operating results, financial condition and prospects.

Limited liquidity, defaults, non-performance or other adverse developments affecting financial institutions or parties with which we do business, or perceptions regarding these or similar risks, have in the past and may in the future lead to market-wide liquidity problems. Such developments, and their effects on the broader financial system, could result in a variety of material and adverse impacts on our business operations and financial conditions, including, but not limited to:

- delayed access to deposits or other financial assets or the uninsured loss of deposits or other financial assets;

- loss of access to revolving existing credit facilities or other working capital sources or the inability to refund, roll over or exte the maturity of, or enter into new credit facilities or other working capital resources;
- potential or actual breach of obligations, including U.S. federal and state wage laws and contracts that may require us maintain letters or credit or other credit support arrangements; and
- termination of cash management arrangements or delays in accessing or actual loss of funds subject to cash managem arrangements.

For example, on March 10, 2023, Silicon Valley Bank, or SVB, was closed and placed in receivership and subsequently, additional financial institutions have been placed into receivership. Prior to SVB's closure, we had less than $5.0 million in uninsured deposit accounts with SVB. As a result of U.S. government intervention, we subsequently regained access to our accounts at SVB, including the uninsured portion of deposit accounts. However, there remains significant uncertainty surrounding the resolution of SVB and the impact of SVB's closure on the broader financial system. Moreover, there is no guarantee that the U.S. government will intervene to provide access to uninsured funds in the future in the event of the failure of other financial institutions, or that they would do so in a timely fashion. In such an event, parties with which we have commercial agreements, including collaboration partners and suppliers, may be unable to satisfy their obligations to, or enter into new commercial arrangements with, us.

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Concerns regarding the U.S. or international financial systems could impact the availability and cost of financing, thereby making it more difficult for us to acquire financing on acceptable terms or at all. In addition, instability in the financial services industry could spur a deterioration in the macroeconomic environment.

Any of these risks could materially impact our operating results, liquidity, financial condition and prospects.

Risks Related to Our Dependence on Third Parties

We currently rely on third parties to manufacture and deliver our product candidates and provide other services. Any failure by one of these third parties to manufacture and deliver acceptable product candidates and provide other services 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 operate 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 and for the commercial manufacture of some or all of our product candidates, if approved. Bulk drug substance (BDS) for our clinical-stage product candidates is provided from both internal and third-party contract manufacturers. Any reduction or halt in supply of BDS could severely constrain our ability to develop our product candidates until a replacement contract manufacturer is found and qualified. As a result of supply chain constraints and staffing issues at one of our contract manufacturers, we have previously adjusted the anticipated filing date of our IND application for IGM-7354 and we have had to make certain other adjustments, and we may have to make further adjustments in the future, with respect to this or other programs. one of our clinical candidates. In addition, we currently rely on a third-party contract research organization for the conduct of our clinical assays and we have experienced, and may continue to experience, delays and interruptions, as well as quality and design errors, in this supply of information to us. If we are unable to arrange for and maintain such third-party manufacturing and analytical sources that are capable of meeting regulatory standards, or

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fail to do so on commercially reasonable terms, we may not be able to successfully produce sufficient supply of product candidate or clinical sample analysis data, or we may be delayed in doing so. 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. A loss of supply of our product candidates, for any reason, including as a result of manufacturing, supply or storage issues, damaged shipments, or otherwise, could result in us experiencing further delays, or disruptions, suspensions or terminations of, or being 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 t 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 compl 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;

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- 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

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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

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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.

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 determine to collaborate with pharmaceutical and biotechnology companies for development and potential commercialization of therapeutic products. For example, we have entered into a collaboration with Sanofi for the development and potential commercialization of certain 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

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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 strategic partnerships, or if these strategic partnerships are not successful, our business could be adversely affected.

Any 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 partnershi and they may not perform their obligations as agreed or expected;
- strategic partners may decide not to 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 tria 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 aband 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 develope or can be commercialized under terms that are more economically attractive than our product candidates;
- strategic partners may restrict us from researching, developing or commercializing certain products or technologies without their involvement;
- product candidates discovered in collaboration with us may be viewed by our strategic partners as competitive with their ow product candidates or products, which may cause strategic partners to cease to devote resources to the commercialization 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, ownership of intellectual property, contract interpretation or the preferred course of development, might cause delays or termination of the research, developm or commercialization of product candidates, might lead to additional responsibilities for us with respect to product candidate or might result in litigation or arbitration, any of which would be time-consuming and expensive;
- strategic partners may not properly obtain, maintain, enforce or defend our intellectual property or proprietary rights relating our product candidates or discovery programs or may use our proprietary information in such a way as to invite litigation tha could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential litigation or other intellectual property related proceedings;
- strategic partners may own or co-own intellectual property covering our product candidates or discovery programs that resul from our collaboration with them, and in such cases, we may not have the exclusive right to commercialize such intellectual property or such product candidates or discovery programs;
- we may need the cooperation of our strategic partners to enforce or defend any intellectual property we contribute to or that arises out of our strategic partnerships, which may not be provided to us;
- strategic partners may infringe the intellectual property rights of third parties, which may expose us to litigation and potential liability;

- strategic partners may control certain interactions with regulatory authorities, which may impact our ability to obtain and maintain regulatory approval of our product candidates;

- we may lose certain valuable rights under circumstances identified in our collaborations, including if we undergo a change o control;
- strategic partners may grant sublicenses to our technology or product candidates or undergo a change of control and the sublicensees or new owners may decide to take the collaboration in a direction which is not in our best interest;
- strategic partners may become bankrupt, which may significantly delay our research or development programs, or may caus us to lose access to valuable technology, know-how or intellectual property of the strategic partner relating to our product candidates or discovery programs;
- strategic partnerships may require us to incur short and long-term expenditures, issue securities that dilute our stockholders disrupt our management and business;
- if our strategic partners do not satisfy their obligations under our agreements with them, or if they terminate our strategic partnerships with them, we may not be able to develop or commercialize product candidates as planned;
- strategic partners may require us to share in development and commercialization costs pursuant to budgets that we do not fully control and our failure to share in such costs could have a detrimental impact on the strategic partnership or our ability t share in revenue generated under the strategic partnership;
- 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; and
- strategic partnership or collaboration agreements may not lead to development or commercialization of product candidates i the most efficient manner or at all. If a present or future strategic partner ours were to be involved in a business combination the continued pursuit and emphasis on our development or commercialization program under such collaboration could be delayed, diminished, or terminated.

In March 2022, we entered into the Sanofi Agreement, pursuant to which we will collaborate with Sanofi to generate, develop, manufacture and commercialize IgM antibodies directed to six primary targets, three of which are intended as oncology targets and three of which are intended as immunology targets.

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 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 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 third-party patents or patent applications of which we are aware may not 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, even though we do not believe they are relevant to our business. 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

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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

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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 relating to third party intellectual property include:

- we or our licensors may initiate litigation or other proceedings, including post-grant proceedings such as oppositions, IPRs o PGRs, against third parties seeking to invalidate the patents held by those third parties, to obtain a judgment that our produc

or processes do not infringe those third parties' patents or to obtain a judgment that those parties' patents are invalid and/or unenforceable;

- if our competitors file patent applications that claim technology also claimed by us or our licensors, we or our licensors may required to participate in derivation or opposition proceedings to determine the priority of invention, which could jeopardize c 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 right 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. 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.

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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, co-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 issue from such applications, and then only to the extent the issued claims cover the technology. The patent applications that we own, or co-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 a 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

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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, or such third parties may gain rights to such patents. We could also become involved in reexamination, inter parties inter-parties review, post-grant review, opposition or derivation proceedings, challenging our patent rights or the patent rights of others. In addition, recent changes in law, such as the U.S. Supreme Court's decision in *Amgen Inc. v. Sanofi*, have introduced changes in the law relevant to biotechnology patents, and future changes in law may further 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 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, co-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.

Moreover, some of our owned or in-licensed patents and patent applications are or may in the future be co-owned with third parties. If we are unable to obtain an exclusive license to any such third party third-party co-owners' interest in such patents or patent applications, such co-owners may be able to license their rights to other third-parties, including our competitors, and our competitors could market competing products and technology. We may need the cooperation of any such co-owners of our patents to enforce such patents against third parties, and such cooperation may not be

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provided to us. Any of the foregoing could have a material adverse effect on our competitive position, business prospects and financial conditions.

Intellectual property discovered through government funded programs may be subject to federal regulations such as "march-in" rights, certain reporting requirements and a preference for United States-based companies. Compliance with such regulations may limit our exclusive rights and limit our ability to contract with non-United States manufacturers.

In addition, the future, we may obtain funding, in part, from U.S. federal or state governments for research resulting we conduct, and such funding may be used in certain the advancement of our existing technologies or creation of additional in-licensed patent rights and technology was funded technology. Pursuant to the Bayh-Dole Act of 1980, the United States government has certain rights in part by the U.S. federal or state governments. inventions developed with government funding, including a non-exclusive, non-transferable, irrevocable worldwide license to use inventions for any governmental purpose. As a result, the U.S. government may have certain rights, including so-called march-in rights, to such any future patent rights funded in part by the U.S. federal government and any products or technology developed from such patent rights. When new technologies are developed with U.S. government funding, the U.S. government generally obtains certain rights in any resulting patents, including a nonexclusive license authorizing the U.S. government to use the invention for non-commercial purposes. These rights may permit the U.S. government to disclose our confidential information to third parties and to exercise march-in rights to use or to allow third parties to use our licensed technology. technology, and there can be no assurance that we would receive compensation from the U.S. government for the exercise of such rights. The U.S. government can exercise its march-in rights if it determines that action is necessary because we fail to achieve the practical application of government-funded technology, because action is necessary to alleviate health or safety needs, to meet requirements of federal regulations, or to give preference to U.S. industry. In addition, our rights in such inventions may be subject to certain requirements to manufacture products embodying such inventions in the United States. Any exercise by the U.S. government of such rights could harm our competitive position, business, financial condition, results of operations and prospects.

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If we fail to comply with our obligations under any license, collaboration or other intellectual property-related agreements, we may be required to pay damages and could lose intellectual property rights that may be necessary for developing, commercializing and protecting our current or future technologies or product candidates or we could lose certain rights to grant sublicenses.

We in-license certain patent rights and proprietary technology from third parties that are important to our discovery platform and development of product candidates. For example, in October 2020, the Company entered into a multi-year patent and materials license agreement with the Board of Regents of the University of Texas System on behalf of the University of Texas Health Science Center at Houston for certain antibodies against the SARS-CoV-2 virus. In January 2021, the Company we entered into an exclusive license agreement with Medivir AB (Medivir) through which the Company we received global, exclusive development and commercialization rights for birinapant, a clinical-stage SMAC mimetic.

We have also in-licensed in-license, and may in the future in-license, certain antibodies antibody binding domains for our discovery and clinical development 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.

Our current license agreements impose, and any future license agreements we enter into are likely to impose, various development, commercialization, funding, milestone, royalty, diligence, sublicensing, insurance, patent prosecution and enforcement or other obligations on us. If any of our licenses or future commercial licenses are terminated or breached, we may:

- lose our rights or options to research, develop or commercialize product candidates covered by the licensed technology;
- not be able to secure patent or trade secret protection for product candidates covered by the licensed technology;
- experience significant delays in the development or commercialization of product candidates covered by the licensed technology;
- not be able to obtain other licenses that may allow us to continue to progress the applicable programs on acceptable terms, at all; or
- incur liability for damages.

Furthermore, we may not have the right to control the preparation, filing, prosecution, maintenance, enforcement and defense of patents and patent applications that we license from or to third parties. If our licensors and future licensors fail to prosecute, maintain, enforce and defend patents we may license, or lose rights to licensed patents or patent applications, our license rights may be reduced or eliminated. In such circumstances, our right to develop and commercialize any of our products or product candidates that is the subject of such licensed rights could be materially adversely affected.

Moreover, our licensors may own or control intellectual property that has not been licensed to us and, as a result, we may be subject to claims, regardless of their merit, that we are infringing, misappropriating or otherwise violating the licensor's intellectual property rights. In addition, while we cannot currently determine the amount of the royalty obligations we would be required to pay on sales of future products if infringement or misappropriation were found, those amounts could be significant. The amount of our future royalty obligations will depend on the technology and intellectual property we use in products that we successfully develop and commercialize, if any. Therefore, even if we successfully develop and commercialize products, we may be unable to achieve or maintain profitability.

In addition, the agreements under which we currently license intellectual property or technology from or to third parties are complex, and certain provisions in such agreements may be susceptible to multiple interpretations. The resolution of any contract interpretation disagreement that may arise could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology, or increase what we believe to be our financial or other obligations under the relevant agreement, either of which could have a material adverse impact on our business and ability to achieve profitability. Moreover, if disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on commercially acceptable terms, we may be unable to successfully develop and commercialize any affected product candidates, which could have a material adverse effect on our business and financial conditions.

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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 intentionally 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.

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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 patents that we own, co-own, or have licensed;
- others may independently develop similar or alternative technologies without infringing our intellectual property rights;
- issued patents that we own, co-own, or have 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 indications.

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

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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, which may lead to challenges to the validity or enforceability of our patents. The outcome following legal assertions of invalidity and unenforceability is unpredictable. 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.

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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, co-owned by, or licensed to u or to obtain a declaratory judgment that their product or technology does not infringe our patents or patents co-owned by us licensed to us;
- third parties may initiate opposition, IPR or PGR proceedings challenging the validity or scope of our patent rights, requiring 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, co-owned, 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, co-owned by us, 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 c patents;
- others may be able to make compounds that are similar to our product candidates but that are not covered by the claims of 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, co-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, parties with whom we have these agreements may not comply with their terms. Any of the parties

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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.

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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.

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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.

The prosecution of certain patent applications and the maintenance and enforcement of certain patents that relate to our product candidates are and may be in the future controlled by our licensors or licensees. 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. For example, under our collaboration agreement with Sanofi, in specified circumstances, Sanofi controls the prosecution and enforcement of certain of the patents and patent applications licensed to it.

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 and Court of Appeals for the Federal Circuit 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 regarding 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 several 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

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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.

Additionally, by as early as of June 1, 2023, existing European patents, and European patent applications, upon grant of a patent, will have the option of becoming a Unitary Patent, which will be subject to the jurisdiction of the Unitary Unified Patent Court (UPC). During a sunrise period set to begin that began on March 1, 2023, European patent owners will have the ability to opt out of being subjected to the jurisdiction of the UPC. The option of a Unitary Patent will be a significant change in European patent practice. As the UPC is a new court system, there is no precedent for the court, increasing the uncertainty of any litigation in the UPC.

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, co-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 could 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.

Risks Related to Ownership of Our Securities

The market price of our common stock may be volatile, which could result in substantial losses for our securityholders.

The trading price of our common stock may be highly volatile and subject to wide fluctuations in response to various factors, some of which are beyond our control. These factors 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 o 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;

- commencement or termination of collaborations for our programs; for instance, without limitation, our collaboration with San
- 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;
- 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, crises or public health emergencies, such as the COVID-19 pandem
- period-to-period fluctuations in our financial condition and results of operations, including the timing of receipt of any milesto 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 control.

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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 stock often does not relate to the operating performance of the companies presented by the stock. 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 issuer of 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 trading market for our common stock may not continue to be sustained.

Prior developed or sustained, and as a result it may be difficult for you to the closing sell your shares of our IPO in September 2019, there was no public market for our common stock.

Although our common stock is listed on the Nasdaq Global Select Market (Nasdaq), the market for our shares has demonstrated varying levels of trading activity. Furthermore, activity and an active market trading market for our common stock may not be sustained in the future. sustained. The lack of an active trading market for our common stock may impair investors' ability to sell their shares at the time they wish to sell them or at a price that they consider reasonable, may reduce the market value of their shares, may 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 Topsøe Holding A/S and a concentrated group of stockholders, whose interests in our business may conflict with yours.

As of December 31, 2022 December 31, 2023, Topsøe Holding A/S, together with other holders of 5% or more of our outstanding capital stock and their respective affiliates, beneficially owned over 70% a majority of the shares of our outstanding capital stock.

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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) Topsøe Holding A/S, (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 our IPO, so long as Topsøe Holding A/S, 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 Topsøe Holding A/S, (ii) one individual designated by Baker Brothers and (iii) one individual designated by Redmile, subject to certain customary conditions and exceptions. Each of Topsøe Holding A/S, 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.

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 as currently in effect. Consequently, if holders of our non-voting common stock 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 Exchange Act, and may not be subject to the short-swing profit provisions of Section 16(b) of the Exchange Act.

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Sales of substantial amounts of our common stock in the public markets, or the perception that such sales could occur, could cause the market price of our common stock to decline significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock in the public market could occur at any time. If our stockholders sell, or the market perceives that our stockholders intend to sell, substantial amount of our common stock in the public market, the market price of our common stock could decline significantly.

We currently have on file with the SEC an effective shelf registration statement on Form S-3, which allows us to offer debt securities, preferred stock, common stock, non-voting common stock and certain other securities from time to time.

If in the future we issue shares of common stock or securities convertible into common stock, our stockholders would experience dilution and, as a result, the market price of our common stock may decline. We cannot predict the effect that future sales of our securities would have on the market price of our common stock. Additionally, our securityholders security holders may be further diluted by the exercise of the pre-funded warrants issued in December 2020 or by

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any issuance of our voting common stock issuable upon the conversion of issued and outstanding shares of our non-voting common stock currently outstanding. stock.

Certain holders of our 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. Registration of these shares under the Securities Act would result in the shares becoming freely tradeable in the public market, subject to the restrictions of Rule 144 in the case of our affiliates. In addition, we filed a registration statement on Form S-8 to register shares of our common stock reserved for future issuance under our equity compensation plans. As a result, plans; shares registered under this registration statement Form S-8 will be available for sale in the public market subject to the satisfaction of applicable vesting arrangements and the exercise of such options and, in the case of our affiliates, the restrictions of Rule 144. If any of these additional shares are sold, or if it is perceived that they will be sold, in the public market, the market price of our common stock could decline.

Raising additional capital may cause dilution to our stockholders, restrict our operations or require us to relinquish substantial rights.

We may from time to time raise additional capital through the sale of equity or convertible securities, including pursuant to an effective shelf registration statement. If we issue additional shares of common stock at a discount from the current trading price of our common stock, our stockholders would experience immediate dilution upon the purchase of any shares of our common stock sold at such discount. In addition, as opportunities present themselves, we may enter into financing or similar arrangements in the future, including the issuance of debt securities, preferred stock, common stock, or non-voting common stock.

If in the future we issue shares of common stock or securities convertible into common stock, our stockholders would experience dilution and, as a result, the market price of our common stock may decline. We cannot predict the effect that future sales of our common stock would have on the market price of our common stock. Additionally, our stockholders may be further diluted by the exercise of the pre-funded warrants issued in December 2020 in connection with a financing (see Note 8 – Stockholders' Equity to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K for additional information) and any issuance of our voting common stock issuable upon the conversion of shares of non-voting common stock currently outstanding.

Further, if we raise additional capital through the sale of equity or convertible securities, the terms of these new securities may include liquidation or other preferences that adversely affect your rights as a 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.

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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 depends 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. 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. In addition, 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.

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 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 consolidated 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.

During the year ended December 31, 2020, we began using a new enterprise resource planning (ERP) system for financial reporting. As a result, we updated our internal controls to accommodate changes to our business processes and accounting procedures. In connection with our ongoing evaluation evaluations of our internal controls over financial reporting, we have made, and may continue to make further upgrades to our finance and accounting systems. If we are unable to accomplish these objectives upgrades 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.

As a public company, we are required to disclose material changes made in our internal controls and procedures on a quarterly basis and our management is required to assess the effectiveness of these controls annually. Additionally, we are required to include a formal management assessment of the effectiveness of our internal control over financial reporting in our periodic reports, and once we cease to be an emerging growth company, unless another exemption is available, 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

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growth company" under 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 engage 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 maintain 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 continue to implement a continuous reporting and improvement process for internal control over financial reporting.

An independent assessment of the effectiveness of our internal controls could detect problems that our management's assessment might not. In addition, our independent registered public accounting firm did not perform an evaluation of our internal control over financial reporting as of December 31, 2022 December 31, 2023, 2021 2022 or 2020 2021 in accordance with the provisions of the Sarbanes-Oxley Act. Had 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 consolidated financial statement restatements and require us to incur the expense of remediation.

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We have incurred and will continue to incur significant increased costs as a result of operating as a public company, and our management has devoted and will continue to devote substantial time to corporate governance standards.

As a public company, we have incurred and will continue to 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 have devoted and will continue 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 adopted additional internal controls and disclosure controls and procedures, retained a transfer agent and adopted an insider trading policy. As a public company, we 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 Nasdaq, have and will continue to increase legal and financial compliance costs and make some compliance activities more time consuming. We cannot predict or estimate the amount of additional costs we may incur to respond to these requirements or the timing of such costs. We have invested and will continue to invest in 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. 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. 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 Nasdaq.

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We are an emerging growth company and a smaller reporting 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 will remain an emerging growth company until the earliest to occur of: the last day of the fiscal year in which we have more than $1.07 billion in annual gross revenue, the date we qualify as a “large accelerated filer,” with the market value of our common stock held by non-affiliates exceeding $700 million as of June 30, the issuance by us of more than $1.0 billion of non-convertible debt over a three-year period, and the last day of the fiscal year ending after the fifth anniversary of our IPO, or December 31, 2024. 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 consolidated financial statements may not be comparable to companies that comply with the new or revised accounting standards as of public company effective dates. We will cease to be an emerging growth company on December 31, 2024.

We are also currently a “smaller reporting company” as defined in the Exchange Act. Smaller reporting companies may take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not smaller reporting companies, including, among others, not being required to comply with the auditor attestation requirements of Section 404 and reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements. Additionally, as a smaller reporting company, we are only required to provide two years of audited financial statements in our SEC reports. We will remain a smaller reporting company until the last day of the fiscal year in which (1) the market value of our common stock held by non-affiliates equals or exceeds $250 million as of the prior June 30, or (2) our annual revenues equal or exceed $100 million during such completed fiscal year and the market value of our common stock held by non-affiliates equals or exceeds $700 million as of the prior June 30.

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If we take advantage of some or all of the reduced disclosure requirements available to emerging growth companies or smaller reporting companies, investors may find our common stock less attractive, which may result in a less active trading market for our common stock and greater stock price volatility.

We have never paid and do not anticipate paying cash dividends on our common stock, 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. As a result, capital appreciation, if any, of our common stock will be your the sole source of gain on your any investment in our common stock for the foreseeable future. Investors seeking cash dividends should not invest in our common stock.

Delaware law and provisions in our amended and restated certificate of incorporation and amended and restated bylaws 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 amended and restated bylaws 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:

- 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 tho 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) (the 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.

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Our amended and restated bylaws provide that the Court of Chancery of the State of Delaware and the federal district courts of the United States are the exclusive forums 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 provide that the Court of Chancery of the State of Delaware (or, if the Court of Chancery does not have jurisdiction, another state court in Delaware or the federal district court for the District of Delaware) is the exclusive forum for the following (except for certain claims as to which such court determines that there is an indispensable party not subject to the jurisdiction of such court):

- 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, stockholders, officers or other employe to us or our stockholders;

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- any action asserting a claim against us arising under the DGCL, our amended and restated certificate of incorporation or ou 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 Exchange Act or any other claim for which the federal courts have exclusive jurisdiction. successor thereto. Our amended and restated bylaws further provide that the federal district courts of the United States will be the sole and exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act. Act against any person in connection with any offering of our securities. These exclusive-forum provisions 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 these provisions. There is uncertainty as to whether a court would enforce such provisions, and the enforceability of similar choice of forum provisions in other companies' charter documents has been challenged in legal proceedings. It is possible that a court could find these types of provisions to be inapplicable or unenforceable, and if a court were to find either exclusive-forum provision in our amended and restated bylaws to be inapplicable or unenforceable in any action, we may incur additional costs associated with resolving the dispute in other jurisdictions, which could seriously harm our business.

Item 1B. Unresolved Staff Comments.

None.

Item 1C. Cybersecurity.

Risks Management and Strategy

We have established policies and processes for assessing, identifying, and managing material risk from cybersecurity threats, and have integrated these processes into our overall risk management systems and processes. We periodically assess material risks from cybersecurity threats, including any potential unauthorized occurrence on or conducted through our information systems that may result in adverse effects on the confidentiality, integrity, or availability of our information systems or any information residing therein.

We conduct annual risk assessments and perform as needed updates to our risk register to identify cybersecurity threats, as well as assessments in the event of a material change in our business practices that may affect information systems that are vulnerable to such cybersecurity threats. These risk assessments include identification of reasonably foreseeable internal and external risks, the likelihood and potential damage that could result from such risks, and the sufficiency of existing policies, procedures, systems, and safeguards in place to manage such risks.

Following these risk assessments, we re-design, implement, and maintain reasonable safeguards to minimize identified risks; reasonably address any identified gaps in existing safeguards; and regularly monitor the effectiveness of our safeguards. We devote significant resources and designate high-level personnel, including our Head of Information Technology (IT), who is also our Senior Vice President (SVP) of Group Operations and reports to our Chief Financial Officer (CFO), to manage the risk assessment and mitigation process.

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As part of our overall risk management system, we monitor and test our safeguards and train our employees on these safeguards, in collaboration with Legal, Human Resources and IT. Personnel at all levels and departments are made aware of our cybersecurity policies through periodic training and company-wide communications.

We engage an experienced cybersecurity consultant as our Interim Information Security Advisor who coordinates our risk assessment processes with our Cybersecurity Steering Committee. We engage an experienced service provider as our 24x7 network and security operations center, to assist us to design and implement our cybersecurity policies and procedures, and to monitor and test our safeguards.

We assess the ability of our key third-party service providers to implement and maintain appropriate security measures, consistent with all applicable laws, to implement and maintain reasonable security measures in connection with their work with us, and to promptly report any suspected breach of its security measures that may affect our company.

For additional information regarding whether any risks from cybersecurity threats, including as a result of any previous cybersecurity incidents, have materially affected or are reasonably likely to materially affect our company, including our business strategy, results of operations, or financial condition, please refer to Item 1A, “Risk Factors,” in this annual report on Form 10-K.

Governance

One of the key functions of the Audit Committee of our Board of Directors is informed oversight of our risk management process, including risks from cybersecurity threats. Our Audit Committee is responsible for monitoring and assessing strategic risk exposure, and our executive officers are responsible for the day-to-day management of the material risks we face.

Our SVP of Group Operations and our Cybersecurity Steering Committee, which includes our Chief Medical Officer, SVP-Corporate Controller, Executive Vice President of Process Development and Manufacturing, SVP of Preclinical Sciences, and our SVP of Legal Affairs, are primarily responsible for assessing and managing our material risks from cybersecurity threats. As part of our risk

identification, assessment, and mitigation activities, we leverage the experience of our external cybersecurity advisor/consultant (CISSP, CISA, CISM, CRISC, QSA) who has extensive cybersecurity expertise across various industries. Our SVP of Group Operations, who manages our cybersecurity program, has over 25 years of experience in the Life-Sciences IT space, with over 8 years in IT security and cybersecurity functions.

Our SVP of Group Operations, in collaboration with our Cybersecurity Steering Committee, oversees our cybersecurity policies and processes, including those described in “Risk Management and Strategy” above. Our SVP of Group Operations is informed about and monitors the prevention, detection, mitigation, and remediation of cybersecurity incidents through oversight of the external consultant and the IT department, which includes oversight of a combination of automated technologies and manual responses to detect, respond and recover from any cybersecurity incident, as well as oversight of the 24x7 network and security operations center. Our SVP of Group Operations is responsible for informing our executive leadership and our Audit Committee about confirmed cybersecurity incidents, and for providing regular updates to senior executive management, including our CFO, concerning our IT and cybersecurity posture.

Our SVP of Group Operations provides quarterly briefings to the audit committee and our executive management regarding our company’s cybersecurity risks and activities, including any recent cybersecurity incidents and related responses, cybersecurity systems testing, activities of third parties, and the like.

Item 2. Properties.

We lease approximately 114,100 square feet of office, laboratory and manufacturing space in Mountain View, California and office and laboratory space in Doylestown, PA. These leases have expiration dates ranging from September 2023 June 2024 through June 2032. We believe that our facilities are adequate to meet our needs for the immediate future, and that, should it be needed, suitable additional space will be available on commercially reasonable terms to accommodate any such expansion of our operations.

Item 3. 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.

Item 4. Mine Safety Disclosures. 75

None.

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Item 4. Mine Safety Disclosures.

None.

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PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

Market Information for Our Common Stock

Our common stock has been listed on the Nasdaq Global Select Market under the symbol "IGMS" since September 18, 2019. Prior to that date, there was no public trading market for our common stock.

Holders of Record

As of March 27, 2023 March 1, 2024, there were 8 7 holders of record of our common stock and 12 13 holders of record of our non-voting common stock. The actual number of stockholders is greater than this number of record holders, and includes stockholders who are beneficial owners, but whose shares are held in street name by brokers and other nominees.

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.

Stock Performance Graph

This performance graph shall not be deemed "soliciting material" or to be "filed" with the SEC for purposes of Section 18 of the Exchange Act or otherwise subject to the liabilities under that Section, and shall not be deemed to be incorporated by reference into any of our filings under the Securities Act, except to the extent that we specifically incorporate this information by reference therein, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.

The following graph compares the cumulative total return to stockholder return on our common stock relative to the cumulative total returns of the Nasdaq Composite Index and the Nasdaq Biotechnology Index. An investment of $100 is assumed to have been made in our common stock and each index on September 18, 2019 (the first day of trading of our common stock with a closing price on that date of $24.30) and its relative performance is tracked through December 31, 2022 December 31, 2023. Pursuant to applicable SEC rules, all values assume reinvestment of the full amount of all dividends; however no dividends have been declared on our common stock to date. The stockholder returns

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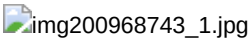
stockholder returns shown on the graph below are based on historical results and are not indicative of future performance, and we do not make or endorse any predictions as to future stockholder returns.



Unregistered Sales of Equity Securities

None. Other than as previously reported on our Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, there have been no unregistered sales of equity securities for the current reporting period.

Use of Proceeds from Public Offering of Common Stock

On September 17, 2019, our registration statement on Form S-1 (File No. 333-2233365) was declared effective by the SEC for our initial public offering of common stock. As of December 31, 2022, all of the proceeds from such initial public offering have been applied as described in our final prospectus filed with the SEC pursuant to Rule 424(b) of the Securities Act and in our other reports previously filed with the SEC. Not applicable.

Issuer Purchases of Equity Securities

None.

Item 6. [Reserved]

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Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations.

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and related notes appearing elsewhere in this Annual Report on Form 10-K. Some of the information contained in this discussion and analysis or set forth elsewhere in this Annual Report on Form 10-K, including information with respect to our plans and strategy for our business, includes forward looking statements that involve risks and uncertainties. As a result of many factors, including those factors set forth in the "Risk Factors" section of this Annual Report on Form 10-K, our actual results could differ materially from the results described in or implied by, these forward-looking statements.

Overview

We are a clinical-stage biotechnology company pioneering the development of IgM antibodies for the treatment of cancer and autoimmune and inflammatory diseases, and infectious diseases. IgM antibodies have inherent properties that we believe may enable them to bind more strongly to targets on the surface of cells than comparable IgG antibodies. We have created a proprietary IgM antibody technology platform that we believe is particularly well suited for developing receptor cross-linking agonists and T cell engagers, targeted cytokines, and target neutralizers. engagers. Our product candidates currently in or about planned to enter clinical testing include:

- IGM-8444: Aplitabart: An IgM antibody targeting Death Receptor 5 (DR5) proteins, currently being evaluated in multiple Phase combination studies in subjects with relapsed and/or refractory solid trials, including randomized and hematologic cancers and randomized single-arm combination trial trials for the treatment of colorectal cancer.
- Imvotamab: A bispecific T cell engaging IgM antibody targeting CD20 and CD3 proteins, planned for evaluation currently being evaluated in two Phase 1 clinical trials in autoimmune diseases, including one for severe systemic lupus erythematosus (SLE) a one for severe rheumatoid arthritis. We are also evaluating potential combination studies of imvotamab for the treatment of relapsed/refractory B cell non-Hodgkin's lymphoma (NHL) patients arthritis (RA) and plan planned to conclude development of imvotamab as a monotherapy for NHL.
- IGM-7354: An IgM antibody targeting the delivery of interleukin-15 (IL-15) to the area of PD-L1 expressing cells, currently be evaluated in a Phase 1 clinical trial for the treatment of patients with relapsed and/or refractory solid tumor cancers. myositis.
- IGM-2644: A bispecific T cell engaging IgM antibody targeting CD38 and CD3 proteins, currently planned for evaluation in a Ph 1 clinical trial for the treatment of patients with multiple myeloma and potentially in autoimmune diseases. disease.

Our pipeline also includes IGM-2537, a bispecific clinical development priorities are (i) treating colorectal cancer using IgM DR5 agonist antibodies and (ii) treating autoimmune diseases using IgM T cell engaging IgM antibody targeting CD123 and CD3 proteins for engager antibodies. In December 2023, we announced we are deprioritizing all hematologic oncology clinical development as well as the treatment clinical development of patients with Acute Myeloid Leukemia (AML), Myelodysplastic Syndromes (MDS) and Acute Lymphoblastic Leukemia (ALL) our targeted cytokine product candidate (Strategic Refocusing).

We believe that we have the most advanced research and development program focused on 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, other than those being developed in partnership with Sanofi (see Sanofi Collaboration and License Agreement) 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, preclinical studies and clinical trials, 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 primarily focused on 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

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current or future product candidates. Our net losses were $221.1 million $246.4 million, $165.2 million $221.1 million, and $81.4 million $165.2 million for the years ended December 31, 2022 December 31, 2023, 2021 2022 and 2020, 2021, respectively. As of December 31, 2022 December 31, 2023, we had an accumulated deficit of $574.8 million $821.2 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 our clinical-stage and other product candidates;
- expand our pipeline of IgM antibody product candidates;
- continue to invest in our IgM antibody technology platform;
- invest in our Autoimmunity and Inflammation and Infectious Diseases business units;
- build out and expand our in-house manufacturing capabilities;

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- 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.

We plan to continue to use third-party service providers, including contract research organizations (CROs) and contract manufacturing organizations (CMOs), to carry out our preclinical and clinical development and manufacture and supply of our preclinical and clinical

materials to be used during the development of our product candidates.

We do not have any products approved for sale and have not generated any product revenue since inception. We have funded our operations primarily from the sale of voting and non-voting common stock and pre-funded warrants in our public offerings and a private placement, the sale of convertible preferred stock and the issuance of unsecured promissory notes in private placements, and payments from our collaboration partners.

In March 2022, we entered into a global collaboration and license agreement with Genzyme Corporation (Sanofi Agreement), a wholly owned subsidiary of Sanofi (Sanofi), to generate, develop, manufacture and commercialize IgM antibodies directed to six primary targets, three of which are intended as oncology targets and three of which are intended as immunology targets. The Sanofi Agreement became effective in May 2022 upon satisfaction of the closing conditions. **Recent Developments**

Under On December 5, 2023, we announced the terms Strategic Refocusing and a reduction in our workforce of the Sanofi Agreement, we received a $150.0 million upfront payment from Sanofi in May 2022 and the Company is eligible to receive potentially over $6.0 billion in aggregate development, regulatory and commercial milestone payments. Following regulatory approval, for licensed products directed to oncology collaboration targets, the companies will equally share profits and losses from commercialization of those licensed products in certain major markets, subject to certain exceptions, and IGM will be eligible to receive tiered royalties on net sales of such licensed products in the rest of world that are in the low double-digit to mid-teen percentages. Following regulatory approval, for licensed products directed to immunology targets, IGM will be eligible to receive tiered royalties on global net sales of such licensed products in the high single-digit to low-teen percentages. approximately 22%.

Table In connection with the Strategic Refocusing, we recognized restructuring charges of Contents
Index $1.8 million during the year ended December 31, 2023. These restructuring charges were primarily related to Financial Statements
severance and one-time termination payments of $3.7 million, partially offset by a $1.9 million reversal of previously recognized non-cash incentive and stock-based compensation expense. As of December 31, 2023, severance costs of $2.4 million remained unpaid and were accrued on the balance sheet.

Components of Results of Operations

Revenue

We have recognized collaboration revenue pursuant to the Sanofi Agreement, a global collaboration and license agreement with Genzyme Corporation (Sanofi Agreement) and expect to continue to recognize revenue in the future to the extent we satisfy our performance obligations under the Sanofi Agreement, including the generation, development, manufacturing and commercialization of IgM antibodies. We may also be entitled to receive payments pursuant to the Sanofi Agreement upon achievement of specified development, regulatory and commercial milestones, which will cause us to recognize additional revenue. As the recognition of future collaboration revenue will be based on costs incurred to date relative to total estimated costs at completion and the uncertainty of when the events underlying various milestones are resolved, we expect our collaboration revenue will fluctuate from period to period.

To date, we have not generated any revenue from the sale of products 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 CROs, for conducting clinical trials, and other costs related to preclinical and clinical testing;
- Costs related to acquiring and manufacturing research and clinical trial materials, including under agreements with third parties such as CMOs and other vendors;

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- Costs related to the preparation of regulatory submissions;
- Expenses related to laboratory supplies and services; and
- Fees under license agreements where no alternative future use exists.

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 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 we initiate additional clinical development activities for our product candidates, 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

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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, recruiting costs, 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 and expanding research activities and development of product candidates in the areas of hematology cancer and oncology, autoimmunity autoimmune and inflammation, infectious inflammatory diseases, and as a result of operating as a public company, including compliance with the rules and regulations of the Securities and Exchange Commission (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.

Interest Income

Interest income includes interest income earned on our cash, cash equivalents, marketable securities, and restricted cash and non-cash interest income (expense) related to accretion (amortization) of the discount (premium) on marketable securities.

Results of Operations

A discussion and analysis of our financial condition and results of operations for the year ended December 31, 2020 December 31, 2021, is included in Item 7 of Part II, “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in our Annual Report on Form 10-K for the year ended December 31, 2021 December 31, 2022, filed with the SEC on March 29, 2022 March 30, 2023.

The following table summarizes our results of operations for the years ended December 31, 2022 December 31, 2023 and 2021, 2022, together with the changes in those items in dollars:

Comparison of the Years Ended December 31, 2022 and 2021 81

	Year Ended December 31,		
(in thousands)	**2022**	**2021**	**Change**
Collaboration revenue	$ 1,069	$ —	$ 1,069
Operating expenses:			
Research and development	179,289	127,026	52,263
General and administrative	49,736	38,297	11,439
Total operating expenses	229,025	165,323	63,702
Loss from operations	(227,956)	(165,323)	(62,633)
Other income (expense)			

Interest income	7,035	159	6,876
Other expense	(181)	—	(181)
Total other income (expense)	6,854	159	6,695
Net loss	$ (221,102)	$ (165,164)	$ (55,938)

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Comparison of the Years Ended December 31, 2023 and 2022

	Year Ended December 31,		
(in thousands)	**2023**	**2022**	**Change**
Collaboration revenue	$ 2,130	$ 1,069	$ 1,061
Operating expenses:			
Research and development	215,519	179,289	36,230
General and administrative	50,072	49,736	336
Total operating expenses	265,591	229,025	36,566
Loss from operations	(263,461)	(227,956)	(35,505)
Other income (expense)			
Interest income	17,743	7,035	10,708
Other expense	(20)	(181)	161
Total other income (expense)	17,723	6,854	10,869
Loss before income tax expense	(245,738)	(221,102)	(24,636)
Income tax expense	(678)	—	(678)
Net loss	$ (246,416)	$ (221,102)	$ (25,314)

Collaboration Revenue

Collaboration revenue was $2.1 million and $1.1 million for the year years ended December 31, 2022. December 31, 2023 and 2022, respectively. The increase of $1.0 million and total revenue recognized generated was in connection with the Sanofi Agreement and attributable to research activities to generate and develop oncology and immunology antibodies. The Sanofi Agreement was executed in May 2022 and therefore we did not recognize any revenue for the year ended December 31, 2021. Please refer to Note – 9 Sanofi

Agreement, to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K for additional disclosures around revenue recognition. recognition disclosures.

Research and Development Expenses

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

(in thousands)	Year Ended December 31, 2022	2021	Change	Year Ended December 31, 2023	2022	Change
Direct expenses						
Clinical stage programs (1)	$ 55,986	$ 47,866	$ 8,120	$ 65,672	$ 63,214	$ 2,458
Preclinical stage programs	37,743	28,008	9,735	38,052	30,515	7,537
Indirect expenses						
Personnel-related	67,905	39,573	28,332	87,553	67,905	19,648
Depreciation and facilities	17,655	11,579	6,076	24,242	17,655	6,587
Total research and development expenses	$ 179,289	$ 127,026	$ 52,263	$ 215,519	$ 179,289	$ 36,230

(1) For the year The years ended December 31, 2022, includes December 31, 2023 and 2022 include direct expenses related to: (i) imvotamab, which is being evaluated in a Phase 1/2 to our active and completed clinical programs and related preclinical costs prior to trial for the treatment of relapsed and/or refractory NHL; (ii) IGM-8444, which is being evaluated in a Phase 1 clinical trial for the treatment of solid and hematologic malignancies; and (iii) IGM-6268, which was being evaluated in two Phase 1 clinical trials for the treatment and prevention of COVID-19 before completing the studies in 2022. initiation.

Research and development expenses were $215.5 million and $179.3 million in for the years ended December 31, 2023 and 2022, compared to $127.0 million in 2021. respectively. The increase of $52.3 million $36.2 million was primarily driven by higher personnel-related expenses, preclinical stage program expenses, depreciation and the advancement of our facilities expense, and clinical product candidates, specifically IGM-8444 and imvotamab. stage program expenses.

Clinical stage direct program expenses increased by $8.1 million $2.5 million, primarily driven by an increase related to IGM-8444 the advancement or initiation of Phase 1 clinical trials for aplitabart, imvotamab in autoimmune diseases, IGM-2644 in multiple myeloma, and IGM-7354, partially offset by lower manufacturing and clinical expenses for imvotamab as a result in oncology and completion of conducting manufacturing activities and the timing of Phase 1 clinical trial activities driven by patient enrollment. trials evaluating IGM-6268.

Preclinical stage program expenses increased by $9.7 million $7.5 million, primarily driven by a $4.6 million an increase of manufacturing in research related activities and a $4.6 million increase of professional services.

Personnel-related expenses increased by $28.3 million, $19.6 million to support our research and clinical development capabilities of which $13.4 million related to non-cash stock-based compensation expense, and was driven by an increase in additional headcount.headcount prior to the Strategic Refocusing announced in December 2023.

Depreciation and facilities expenses increased by $6.1 million, primarily due to an increase in rent expense under new lease agreements

for additional space, depreciation expense of our cGMP manufacturing facility, and office infrastructure to support company growth. 82

General and Administrative Expenses

General and administrative expenses were $49.7 million in 2022 compared to $38.3 million in 2021. The increase of $11.4 million was primarily due to a $9.2 million increase in compensation expenses, of which $5.5 million related to non-cash stock-based compensation, primarily attributable to higher headcount, and a $1.4 million increase related to professional services.

Interest Income

Interest income was $7.0 million in 2022 compared to $0.2 million in 2021. The increase of $6.8 million was primarily due to increasing yield rates and interest earned on the investment of additional funds received as a result of our public offering in April 2022 and upfront payment under the Sanofi agreement.

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Depreciation and facilities expenses increased by $6.6 million, primarily due to additional research and development space, equipment, and infrastructure.

General and Administrative Expenses

General and administrative expenses were $50.1 million and $49.7 million for the years ended December 31, 2023 and 2022, respectively. The increase of $0.4 million was primarily due to an increase in compensation, facilities and infrastructure costs.

Interest Income

Interest income was $17.7 million and $7.0 million for the years ended December 31, 2023 and 2022, respectively. The increase of $10.7 million was primarily due to increasing yield rates.

Liquidity and Capital Resources

Sources of Liquidity

We are a clinical-stage biotechnology company with limited operating history, and due to our significant research and development expenditures, we have generated operating losses since our inception and have not generated any revenue from the sale of any products. We expect to continue incurring significant expenses and operating losses for the foreseeable future as we continue our research and development of our product candidates.

Since our inception and through December 31, 2022 December 31, 2023, we have funded our operations primarily through the sale of common stock and pre-funded warrants in our public offerings and private placement, the sale of convertible preferred stock and the issuance of unsecured promissory notes in private placements, and payments from our collaboration partners. In July 2023, we

completed a public offering as well as a concurrent private placement, in which we issued a total of 15,000,000 shares of common stock, including 11,812,500 shares of non-voting common stock and 3,187,500 shares of voting common stock, for gross proceeds of $120.0 million, resulting in net proceeds of $113.5 million after deducting discounts, commissions, and offering costs. We maintain a shelf registration statement with the SEC for the potential offering, issuance and sale by us of our common stock, non-voting common stock, debt securities, preferred stock, and certain other securities from time to time in one or more offerings.

As of December 31, 2022 December 31, 2023, we had cash, cash equivalents, and marketable securities of $427.2 million $337.7 million and an accumulated deficit of $574.8 million $821.2 million. Our material cash requirements include our operating expenses, which consist primarily of research and development expenditures related to our programs and related personnel costs, as well as our operating leases.

We believe that our cash, cash equivalents, and marketable securities will be sufficient to fund our planned operations for at least one year past the issuance date of the consolidated financial statements appearing elsewhere in this Annual Report on Form 10-K. Our assessment of the period of time through which our financial resources will be adequate to support our operations is a forward-looking statement and involves numerous risks and uncertainties.

In May 2022, we received a $150.0 million upfront payment from Sanofi under the terms of the Sanofi Agreement. Additionally, the Company is eligible to receive potentially over $6.0 billion in aggregate development, regulatory and commercial milestone payments pursuant to the Sanofi Agreement.

During the year ended December 31, 2022, we raised $230.0 million of gross proceeds from the sale of 10,000,000 shares of common stock, including 8,695,653 shares of non-voting common stock and 1,304,347 shares of voting common stock, in an underwritten public offering (2022 Public Offering). The net proceeds from the offering were approximately $218.0 million, after deducting underwriting discounts and commissions and offering costs of approximately $12.0 million.

The shares of common stock sold in the 2022 Public Offering were pursuant to a shelf registration statement on Form S-3, declared effective in August 2021 by the SEC for the potential offering, issuance and sale by us of up to $400.0 million of our common stock, non-voting common stock, debt securities, preferred stock, and certain other securities.

In November 2022, we filed a new shelf registration statement on Form S-3 that was declared effective by the SEC for the potential offering, issuance and sale by us of up to $400.0 million of our common stock, non-voting common stock, debt securities, preferred stock, and certain other securities.

Future Funding Requirements

We will continue to 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. 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 U.S. Food and Drug Administration (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 to which we are a party into which we may enter in the future, including the timing of receipt of any milestone or royalty payments under these agreemen
- the impact of macroeconomic conditions, including inflation, supply chain disruptions and volatility in the capital markets, on our business, financial condition and results of operations;
- 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.

If we require additional financing, we may not be able to obtain such financing on acceptable terms, or at all. If we raise additional capital by issuing equity or equity-linked securities, our stockholders may experience dilution, and the terms of these securities may include liquidation or other preferences that adversely affect our stockholders' rights. Debt financing, if available, may involve covenants restricting our operations or our ability to incur additional debt. If 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 or grant licenses on terms that may not be favorable to us. Failure to raise sufficient capital when needed or generate sufficient cash flow from operations, would impact our ability to pursue our business strategies and could require us to delay, scale back or discontinue one or more of our product development programs, or other aspects of our business objectives.

Cash Flows

A discussion and analysis of our financial condition and cash flows for the year ended December 31, 2020 December 31, 2021 is included in Item 7 of Part II, "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our Annual Report on Form 10-K for the year ended December 31, 2021 December 31, 2022 filed with the SEC on March 29, 2022 March 30, 2023.

The following table summarizes our cash flows for the periods indicated:

(in thousands)	Year Ended December 31, 2022	Year Ended December 31, 2021	Year Ended December 31, 2023	Year Ended December 31, 2022
Net cash, cash equivalents, and restricted cash (used in) provided by:				
Operating activities	$ (5,853)	$ (124,982)	$ (192,231)	$ (5,853)
Investing activities	(225,644)	15,461	68,355	(225,644)
Financing activities	219,382	2,476	115,068	219,382
Net decrease in cash, cash equivalents, and restricted cash	$ (12,115)	$ (107,045)	$ (8,808)	$ (12,115)

Cash Used in Operating Activities

For the year ended December 31, 2023, net cash used in operating activities was $192.2 million, which consisted primarily of a net loss of $246.4 million and a net change of $6.7 million in net operating assets and liabilities, partially offset by a net change of $60.9 million in non-cash charges. The net change in our operating assets and liabilities was primarily due to a decrease in net liabilities of $8.6 million due to payments related to clinical trials, manufacturing, and lease liabilities, and the recognition of deferred revenue. The non-cash charges primarily consisted of stock-based compensation expense of $46.5 million, depreciation expense of $8.3 million, lease expense of $5.4 million, and net discount purchased and accretion on marketable securities of $0.3 million.

For the year ended December 31, 2022, net cash used in operating activities was $5.9 million, which consisted primarily of a net loss of $221.1 million, partially offset by a net change of $155.2 million in our net operating assets

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and liabilities and $60.1 million in non-cash charges. The net change in our operating assets and liabilities was primarily due to an increase in deferred revenue of $148.9 million from receiving a $150.0 million upfront payment from Sanofi and an increase in other net liabilities of $6.8 million from manufacturing and clinical activity. The non-cash charges primarily consisted of stock-based compensation expense of $44.7 million,

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depreciation expense of $6.1 million, net discount purchase purchased and accretion on marketable securities of $4.7 million, and lease expense of $4.5 million.

Cash Provided by (Used in) Investing Activities

For the year ended December 31, 2021 December 31, 2023, net cash used in operating provided by investing activities was $125.0 million $68.4 million, which consisted primarily of a net loss $445.8 million in maturities and sales of $165.2 million, marketable securities, partially offset by $33.7 million $365.0 million in non-cash charges purchases of marketable securities and a net change $12.4 million in purchases of $6.4 million in our net operating assets property, plant, and liabilities. The net change in our operating assets and liabilities was primarily due to an increase in accrued liabilities of $12.6 million, partially offset by an increase in prepaid expenses and other current assets of $3.3 million, a decrease in lease liabilities, net of $3.0 million, an increase in other assets of $0.5 million, and a decrease in accounts payable of $0.7 million. The non-cash charges primarily consisted of stock-based compensation expense of $25.9 million, depreciation expense of $4.5 million, and lease expense of $3.2 million.

Cash (Used in) Provided by Investing Activities equipment.

For the year ended December 31, 2022, net cash used in investing activities was $225.6 million, which consisted of $540.0 million in purchases of marketable securities, and $10.2 million in purchases of property, plant, and equipment, primarily for research and development activities, partially offset by $324.6 million in maturities of marketable securities.

Cash Provided by Financing Activities

For the year ended December 31, 2021 December 31, 2023, net cash provided by investing financing activities was $15.5 million $115.1 million, which consisted of $154.4 million $113.6 million in maturities proceeds from the issuance of marketable securities, common stock in a public offering and sales concurrent private placement, net of marketable securities payments of $3.0 million, offset by $128.7 million offering costs, $1.4 million in proceeds from purchases under the employee stock purchase plan, and $0.1 million due to proceeds from the exercise of marketable securities, and $13.2 million in purchases of property, plant, and equipment for research and development activities.

Cash Provided by Financing Activities stock options.

For the year ended December 31, 2022, net cash provided by financing activities was $219.4 million, which consisted of $218.0 million in proceeds from issuance of common stock in the 2022 Public Offering, net of payments of offering costs, paid, $0.9 million in proceeds from purchases under the employee stock purchase plan, and $0.5 million in proceeds from the exercise of stock options.

For the year ended December 31, 2021, net cash provided by financing activities was $2.5 million, which consisted primarily of $3.1 million in proceeds from the exercise of stock options and $0.9 million in proceeds from purchases under our employee stock purchase plan offset by $1.6 million of payments for employee taxes and exercise costs of shares withheld in connection with the stock option exercises.

Contractual Obligations and Commitments

The following table summarizes our contractual obligations and other commitments as of December 31, 2022 December 31, 2023:

	Payments Due by Period					Payments Due by Period				
(in thousands)	Less than 1 Year	1 to 3 Years	3 to 5 Years	More than 5 Years	Total	Less than 1 Year	1 to 3 Years	3 to 5 Years	More than 5 Years	Total
Contractual obligations:										

Operating lease obligations [1]	6,905	$ 888	14,771	$ 34,802	$ 70,259	$ 8,194	$ 14,437	$ 14,937	$ 26,584	$ 64,152

[1] Payments due for our lease of office, laboratory and manufacturing facilities. The payments represent gross operating lease obligations included in the consolidated balance sheet, sheets, in addition to $9.0 million of future lease commitments for a laboratory lease signed in July 2022, which will not commence until September 2024, and was not included in the right-of-use assets and lease liabilities balance as of December 31, 2022 December 31, 2023.

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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 For product candidates that are currently in various research and development stages, we may be obligated to make up to $361.9 million of future development, regulatory, and commercial milestone and royalty payments associated with the optioned technologies in our license agreements. Payments under these agreements generally become due and payable upon achievement of certain milestones. The achievement of these milestones was not probable and payment was not required as of December 31, 2023, as such, contingencies have not included been recorded in our consolidated financial statements. Amounts related to contingent milestone or royalty payments or other are not yet considered contractual payment obligations in as they are contingent on the table above as the timing and amount successful achievement of such obligations are unknown or uncertain. certain milestones. See Note 7 – License Agreements to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Off-Balance Sheet Arrangements

We did not have during the periods presented, and we do not currently have, any off-balance sheet arrangements, as defined in the rules and regulations of the SEC.

Recently Issued and Adopted Accounting Pronouncements

None. Please refer to Note 2 – Summary of Significant Accounting Policies to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K for additional disclosures around recently issued and adopted accounting pronouncements.

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Critical Accounting Policies and Use of Estimates

Our consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles (GAAP). The preparation of these consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue, expenses, and related disclosures. 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, liabilities, and equity and the amount of revenues and expenses, which are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. We believe that the accounting policies discussed below are critical to understanding our historical and future performance, as these policies relate to the more significant areas involving management's judgments and estimates.

While our significant accounting policies are described in the notes to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K, we believe that the following critical accounting policies are most important to understanding and evaluating our reported financial results.

Revenue Recognition

We enter into license agreements related to our technologies that we have determined are within the scope of Accounting Standards Codification (ASC) 606. Based on the terms and conditions of our agreements, we identify the goods and services that we promise to transfer to the customer, which may consist of the licensing of technologies, the performance of research and development activities, and/or the supply of products related to our technologies. Based on the nature of the goods and services provided and the customer's intended benefit of the arrangement, we evaluate which of the promised goods and services are distinct and, therefore, represent a performance obligation, which may require us to combine certain promised goods and services that are determined to not be distinct from one another. We also evaluate whether an agreement provides the customer an option to purchase future goods or services at a discounted price, or a material right, which would also represent a performance obligation.

In exchange for the performance obligations, we estimate the amount of consideration promised by the customer, or the transaction price, which may include both fixed and variable consideration. Variable consideration may consist of various milestone payments based upon the achievement of certain events or conditions, sales-based royalties, or payments contingent on the performance of research and development services. If an arrangement includes development, regulatory, or commercial milestone payments, we evaluate whether the milestones are considered probable of being reached and estimate the amount to be included in the transaction price using the most likely amount method. We include the amount of estimated variable consideration, including milestones, in the transaction price to the extent that it is probable that a significant reversal of cumulative revenue recognized will not occur. Sales-based royalty and milestone payments that we determine are predominately related to the license or our intellectual property are excluded from the transaction price we expect to receive until the underlying sales occur.

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We allocate the estimated transaction price to the identified performance obligations based on the relative estimated Stand-alone Selling Price (SSP) of each performance obligation using objective evidence if it is available. If SSP is not directly observable, we estimate the SSP using other assumptions and methods such as the expected cost-plus margin approach with estimated inputs of forecasted costs, development timelines and scenarios, probability of target failures and selection of substitute targets, and program-specific factors.

We recognize revenue allocated to each performance obligation when, or as, we satisfy a performance obligation. Revenue is recognized over time by measuring the progress toward complete satisfaction of the relevant performance obligation using an appropriate input or output method, which may be based on factors such as internal personnel costs and third-party contract expenses, among other measures based on the nature of the good or service promised to the customer. The estimates made on an input or output method are subject to change and may result in material changes to revenue that could materially affect our results of operations.

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Accrued Research and Development Expenses

We record accruals for estimated costs associated with research, preclinical studies, clinical trials, and manufacturing, 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. We accrue for costs resulting from agreements with CROs, CMOs, and other outside service providers for which payment flows do not match the periods over which the materials or services are provided to us. The costs accrued are based on estimates of actual work completed. Estimates are determined 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. In the event we make advanced payments, the payments are recorded as a prepaid expense and recognized as the services are performed.

We make significant judgments and estimates in determining the accrual balance in each reporting period. As actual costs become known, we adjust our accruals. Variations in the assumptions used to estimate accruals including, but not limited to, the number of patients enrolled, the rate of patient enrollment and the actual services performed, may vary from our estimates, resulting in adjustments to clinical trial expenses in future periods. Changes in these estimates that result in material changes to our accruals could materially affect our financial condition and results of operations.

Leases

Under ASC 842, we determine if an arrangement is a lease at inception. In addition, we determine whether leases meet the classification criteria of a finance or operating lease at the lease commencement date considering: (1) whether the lease transfers ownership of the underlying asset to the lessee at the end of the lease term, (2) whether the lease grants the lessee an option to purchase the underlying asset that the lessee is reasonably certain to exercise, (3) whether the lease term is for a major part of the remaining economic life of the underlying asset, (4) whether the present value of the sum of the lease payments and residual value guaranteed by the lessee equals or exceeds substantially all of the fair value of the underlying asset, and (5) whether the underlying asset is of such a specialized nature that it is expected to have no alternative use to the lessor at the end of the lease term. Operating lease right-of-use (ROU) assets and liabilities are recognized at the lease commencement date based on the present value of lease payments over the lease term. In determining the present value of lease payments, we determine our incremental borrowing rate based on the information available at the lease commencement date if the rate implicit in the lease is not readily determinable. We determine the incremental borrowing rate base on an analysis of corporate bond yields with a credit rating similar to ours. The determination of our incremental borrowing rate requires

management judgment including the development of a synthetic credit rating and cost of debt as we currently do not carry any debt. We believe that the estimates used in determining the incremental borrowing rate are reasonable based upon current facts and circumstances. Applying different judgments to the same facts and circumstances could result in the estimated amounts to vary.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

As a "smaller reporting company," as defined by Rule 12b-2 of the Exchange Act, and pursuant to Item 305 of Regulation S-K we are not required to provide quantitative and qualitative disclosures about market risk.

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Item 8. Financial Statements and Supplementary Data.

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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 consolidated balance sheets of IGM Biosciences, Inc. (the "Company") as of December 31, 2022 December 31, 2023 and 2021, 2022, the related consolidated statements of operations, comprehensive loss, stockholders' equity, and cash flows, for each of the three years in the period ended, December 31, 2022 December 31, 2023, 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, 2022 December 31, 2023 and 2021, 2022, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022 December 31, 2023, 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
March 30, 2023 7, 2024

We have served as the Company's auditor since 2019.

IGM Biosciences, Inc.

Consolidated Balance Sheets

(in thousands, except share and per share data)

	December 31,		December 31,	
	2022	2021	2023	2022
Assets				
Current assets:				
Cash and cash equivalents	121,231	133,499	$ 112,520	$ 121,231
Restricted cash	689	701	592	689
Marketable securities	305,931	96,208	225,157	305,931
Prepaid expenses and other current assets	10,570	10,504	9,328	10,570
Total current assets	438,421	240,747	347,597	438,421
Property, plant and equipment, net	33,484	28,495	38,232	33,484
Operating lease right-of-use assets	39,591	27,849	35,773	39,591
Other non-current assets	2,003	1,036	1,809	2,003
Total assets	$ 513,499	$ 298,127	$ 423,411	$ 513,499
Liabilities and stockholders' equity				
Current liabilities:				
Accounts payable	$ 2,512	$ 5,584	$ 1,326	$ 2,512
Accrued liabilities	33,621	18,876	31,544	33,621
Lease liabilities	5,816	3,320	5,834	5,816
Deferred revenue	2,736	—	3,777	2,736

Total current liabilities	44,685	27,780	42,481	44,685
Lease liabilities, non-current	35,356	25,439	34,672	35,356
Deferred revenue, non-current	146,195	—	143,024	146,195
Total liabilities	226,236	53,219	220,177	226,236
Commitments and contingencies (Note 6)				
Commitments and contingencies (Note 7)				
Stockholders' equity:				
Preferred stock, $0.01 par value; 200,000,000 shares authorized as of December 31, 2022 and 2021; no shares issued and outstanding	—	—		
Common stock, $0.01 par value; 1,000,000,000 shares authorized as of December 31, 2022 and 2021; 29,394,436 and 26,066,818 shares issued and outstanding as of December 31, 2022 and 2021, respectively	294	261		
Non-voting common stock, $0.01 par value; 200,000,000 shares authorized as of December 31, 2022 and 2021; 13,687,883 and 6,431,205 shares issued and outstanding as of December 31, 2022 and 2021, respectively	137	64		
Preferred stock, $0.01 par value; 200,000,000 shares authorized as of December 31, 2023 and 2022; no shares issued and outstanding			—	—
Common stock, $0.01 par value; 1,000,000,000 shares authorized as of December 31, 2023 and 2022; 33,180,749 and 29,394,436 shares issued and outstanding as of December 31, 2023 and 2022, respectively			331	294
Non-voting common stock, $0.01 par value; 200,000,000 shares authorized as of December 31, 2023 and 2022; 25,500,383 and 13,687,883 shares issued and outstanding as of December 31, 2023 and 2022, respectively			255	137
Additional paid-in-capital	862,359	598,373	1,023,739	862,359
Accumulated other comprehensive loss	(701)	(66)		
Accumulated other comprehensive income (loss)			151	(701)

Accumulated deficit	(574,826)	(353,724)	(821,242)	(574,826)
Total stockholders' equity	287,263	244,908	203,234	287,263
Total liabilities and stockholders' equity	$ 513,499	$ 298,127	$ 423,411	$ 513,499

The accompanying notes are an integral part of these consolidated financial statements.

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IGM Biosciences, Inc.

Consolidated Statements of Operations

(in thousands, except share and per share data)

	Year Ended December 31,			Year Ended December 31,		
	2022	2021	2020	2023	2022	2021
Collaboration revenue	$ 1,069	$ —	$ —	$ 2,130	$ 1,069	$ —
Operating expenses:						
Research and development	179,289	127,026	65,030	215,519	179,289	127,026
General and administrative	49,736	38,297	18,250	50,072	49,736	38,297
Total operating expenses	229,025	165,323	83,280	265,591	229,025	165,323
Loss from operations	(227,956)	(165,323)	(83,280)	(263,461)	(227,956)	(165,323)
Other income (expense)						
Interest income	7,035	159	1,925	17,743	7,035	159
Other expense	(181)	—	—	(20)	(181)	—
Total other income (expense)	6,854	159	1,925	17,723	6,854	159

Loss before income tax expense				(245,738)	(221,102)	(165,164)
Income tax expense				(678)	—	—
Net loss	$ (221,102)	$ (165,164)	$ (81,355)	$ (246,416)	$ (221,102)	$ (165,164)
Net loss per share, basic and diluted	$ (5.32)	$ (4.93)	$ (2.65)	$ (4.71)	$ (5.32)	$ (4.93)
Weighted-average common shares outstanding, basic and diluted	41,543,954	33,479,782	30,748,280	52,311,958	41,543,954	33,479,782

The accompanying notes are an integral part of these consolidated financial statements.

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IGM Biosciences, Inc.

Consolidated Statements of Comprehensive Loss

(in thousands)

	Year Ended December 31,			Year Ended December 31,		
	2022	2021	2020	2023	2022	2021
Net loss	$ (221,102)	$ (165,164)	$ (81,355)	$ (246,416)	$ (221,102)	$ (165,164)
Other comprehensive loss:						
Unrealized loss on marketable securities	(635)	(92)	(17)			
Other comprehensive income (loss):						
Unrealized gain (loss) on marketable securities				852	(635)	(92)
Comprehensive loss	$ (221,737)	$ (165,256)	$ (81,372)	$ (245,564)	$ (221,737)	$ (165,256)

The accompanying notes are an integral part of these consolidated financial statements.

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IGM Biosciences, Inc.

Consolidated Statements of Stockholders' Equity

(in thousands, except share data)

	Common Stock		Non-Voting Common Stock		Additional Paid-In-	Accumulated Other Comprehensive	Accumulated	Total Stockholders'
	Shares	Amount	Shares	Amount	Capital	Income (Loss)	Deficit	Equity
Balance—December 31, 2019	24,053,921	$ 240	6,431,205	$ 64	$ 347,089	$ 43	$ (107,205)	$ 240,231

Issuance of common stock and pre-funded warrants in connection with public offering, net of offering costs	1,242	1	—	—	2,240	—	—	2,241
Exercise of stock options, net of shares withheld for taxes and exercise costs	70,537	2	—	—	(1,595)	—	—	(1,593)
Vest of restricted stock	58,225	1	—	—	(1)	—	—	—
Vest of restricted stock units	7,654	—	—	—	—	—	—	—
Purchases under employee stock purchase plan	31,346	—	—	—	3,668	—	—	3,668
Unrealized loss on marketable securities	—	—	—	—	—	(17)	—	(17)
Stock-based compensation expense	—	—	—	—	4,545	—	—	4,545

Net loss	—	—	—	—	—	—	(815)	(815)										
Balance—December 31, 2020	25,592,931	$ 255	6,431,205	$ 64	$ 570,030	$ (188,560)	$ 381,815											
Exercise of stock options, net of shares withheld for taxes and exercise costs	500,733	6	—	—	1,565	—	—	1,571										
Vest of restricted stock units	4,531	—	—	—	—	—	—	—										
Purchases under employee stock purchase plan	18,623	—	—	—	905	—	—	905										
Unrealized loss on marketable securities	—	—	—	—	—	(92)	—	(92)										
Stock-based compensation expense	—	—	—	—	25,873	—	—	25,873										

Net loss							(16,165,164)	(16,165,164)	—	—	—	—	—	—	(165,164)	(165,164)
Balance—December 31, 2021	26,066,818	$ 261	6,431,205	$ 64	$ 598,373	$ (66)	$ (353,724)	$ 244,908								
Issuance of common stock in connection with public offering, net of offering costs	1,304,347	28	8,695,653	73	217,886	—	—	217,987								
Conversion of non-voting common stock into voting common stock	1,438,975	—	(1,438,975)	—	—	—	—	—								
Exercise of stock options	233,459	2	—	—	498	—	—	500								

Vest of restricted stock units	2,963,683	3	—	—	(3)	—	—	—	279,683	3	—	—	(3)	—	—	—		
Purchases under employee stock purchase plan	1,154,895	—	—	—	5	—	—	5	71,154	—	—	—	895	—	—	895		
Unrealized loss on marketable securities	—	—	—	—	—	(635)	—	(635)	—	—	—	—	—	(635)	—	(635)		
Stock-based compensation expense	—	—	—	—	44,710	—	—	44,710	—	—	—	—	44,710	—	—	44,710		
Net loss	—	—	—	—	—	—	(221,102)	(221,102)	—	—	—	—	—	—	(221,102)	(221,102)		
Balance—December 31, 2022	29,394,436	$ 4	13,687,883	$ 137	$ 862,359	$ (701)	$ (574,826)	$ 287,263										

Issuance of common stock in connection with public offering and private placement, net of offering costs	3,187,500	32	11,812,500	118	113,334	—	—	113,484
Exercise of stock options	77,762	—	—	—	120	—	—	120
Vest of restricted stock units	358,184	4	—	—	(4)	—	—	—
Purchases under employee stock purchase plan	162,867	1	—	—	1,383	—	—	1,384
Unrealized gain on marketable securities	—	—	—	—	—	852	—	852
Stock-based compensation expense	—	—	—	—	46,547	—	—	46,547
Net loss	—	—	—	—	—	—	(246,416)	(246,416)
Balance—December 31, 2023	33,180,749	$ 331	25,500,383	$ 255	$ 1,023,739	$ 151	$ (821,242)	$ 203,234

The accompanying notes are an integral part of these consolidated financial statements.

IGM Biosciences, Inc.

Consolidated Statements of Cash Flows

(in thousands)

	Year Ended December 31,			Year Ended December 31,		
	2022	2021	2020	2023	2022	2021
Cash flows from operating activities:						
Net loss	$ (221,102)	$ (165,164)	$ (81,355)	$ (246,416)	$ (221,102)	$ (165,164)
Adjustments to reconcile net loss to net cash used in operating activities:						
Depreciation	6,075	4,484	1,025	8,277	6,075	4,484
Stock-based compensation expense	44,710	25,873	8,454	46,547	44,710	25,873
Purchase net discount (premium) on marketable securities	7,368	(643)	(578)			
Net (accretion of discount) amortization of premiums on marketable securities	(2,713)	624	(23)			
Purchase of net discount (premium) on marketable securities				9,481	7,368	(643)
Net (accretion of discounts) amortization of premiums on marketable securities				(9,140)	(2,713)	624
Non-cash lease expense	4,527	3,240	2,551	5,414	4,527	3,240
Loss on disposal of property, plant and equipment	112	157	—			
Other				299	112	157
Changes in assets and liabilities:						
Prepaid expenses and other current assets	359	(3,298)	(252)	1,711	359	(3,298)
Other non-current assets	(967)	(488)	(290)	194	(967)	(488)

Income tax receivable	—	—	35			
Accounts payable	(3,002)	652	2,198	(992)	(3,002)	652
Accrued liabilities	13,705	12,569	2,837	(3,214)	13,705	12,569
Lease liabilities, net	(3,856)	(2,988)	(2,483)	(2,262)	(3,856)	(2,988)
Deferred revenue	148,931	—	—	(2,130)	148,931	—
Net cash used in operating activities	(5,853)	(124,982)	(67,881)	(192,231)	(5,853)	(124,982)
Cash flows from investing activities:						
Purchases of property, plant and equipment	(10,206)	(13,244)	(17,502)	(12,381)	(10,206)	(13,244)
Purchases of marketable securities	(540,022)	(128,705)	(207,986)	(365,039)	(540,022)	(128,705)
Proceeds from maturities of marketable securities	324,584	154,413	283,777			
Proceeds from sales of marketable securities	—	2,997	—			
Net cash (used in) provided by investing activities	(225,644)	15,461	58,289			
Proceeds from maturities and sales of marketable securities				445,775	324,584	157,410
Net cash provided by (used in) investing activities				68,355	(225,644)	15,461
Cash flows from financing activities:						
Payment of employee taxes and exercise costs for shares withheld	—	(1,555)	(1,731)	—	—	(1,555)
Proceeds from exercise of stock options	500	3,126	138	120	500	3,126
Proceeds from purchases under the employee stock purchase plan	895	905	683	1,384	895	905

Proceeds from issuance of common stock and pre-funded warrants in public offerings, net of offering costs	217,987	—	215,691			
Proceeds from issuance of common stock in public offering and private placement, net of offering costs				113,564	—	—
Proceeds from issuance of common stock in public offerings, net of offering costs				—	217,987	—
Net cash provided by financing activities	219,382	2,476	214,781	115,068	219,382	2,476
Net (decrease) increase in cash, cash equivalents and restricted cash	(12,115)	(107,045)	205,189			
Net decrease in cash, cash equivalents and restricted cash				(8,808)	(12,115)	(107,045)
Cash, cash equivalents, and restricted cash						
Beginning of period	134,035	241,080	35,891	121,920	134,035	241,080
End of period	$ 121,920	$ 134,035	$ 241,080	$ 113,112	$ 121,920	$ 134,035
Reconciliation of cash, cash equivalents, and restricted cash						
Cash and cash equivalents	$ 121,231	$ 133,334	$ 241,080	$ 112,520	$ 121,231	$ 133,334
Restricted cash	689	701	—	592	689	701
Cash, cash equivalents, and restricted cash	$ 121,920	$ 134,035	$ 241,080	$ 113,112	$ 121,920	$ 134,035
Supplemental cash flow data:						
Income taxes paid				$ 625	$ —	$ —
Supplemental disclosure of non-cash investing and financing activities:	**Supplemental disclosure of non-cash investing and financing activities:**			**Supplemental disclosure of non-cash investing and financing activities:**		
Right-of-use assets recognized in exchange for lease obligations	$ 16,269	$ 19,503	$ —	$ 1,596	$ 16,269	$ 19,503

Unpaid amounts related to purchases of property, plant and equipment	$	1,465	$	495	$	3,829	$	2,408	$	1,465	$	495
Unpaid amounts related to offering costs for public offerings	$	—	$	—	$	279						

The accompanying notes are an integral part of these consolidated financial statements.

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IGM Biosciences, Inc.

Notes to Consolidated Financial Statements

Note 1. Organization

Description of the Business

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 and autoimmune and inflammatory diseases, and infectious diseases.

Basis of Presentation

These consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States (U.S. GAAP), as defined by the Financial Accounting Standards Board (FASB) and include the accounts of the Company and its wholly owned subsidiaries. All intercompany accounts and transactions have been eliminated in consolidation. All U.S. dollar (USD) amounts presented, except per share amounts, are stated in thousands, unless otherwise indicated.

Liquidity

The Company has incurred net operating losses and negative cash flows from operations since its inception and had an accumulated deficit of $574.8 821.2 million as of December 31, 2022 December 31, 2023. As of December 31, 2022 December 31, 2023, the Company had cash, cash equivalents, and marketable securities of $427.2 337.7 million. Management believes that the existing financial resources are sufficient to continue operating activities at least one year past the issuance date of these consolidated financial statements. The Company has historically financed its operations primarily through the sale of common stock and pre-funded warrants in its public offerings and private placement, the sale of convertible preferred stock and issuance of unsecured promissory notes in private placements, and funding received from our collaboration partners. To date, none of the Company's product candidates have been approved for sale, and the Company has not generated any product revenue since inception. Management expects operating losses to

continue and increase for the foreseeable future, as the Company progresses its planned research and development activities for its product candidates. The Company's prospects are subject to risks, expenses and uncertainties frequently encountered by companies in the biotechnology industry as discussed below. While the Company has been able to raise multiple rounds of financing, there can be no assurance that in the event the Company requires additional financing, such financing will be available on terms which are favorable or at all. Failure to raise sufficient capital when needed or generate sufficient cash flow from operations would impact the ability to pursue business strategies and could require the Company to delay, scale back or discontinue one or more product development programs, or other aspects of the Company's business objectives.

Note 2. Summary of Significant Accounting Policies

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. Such management estimates include, but are not limited to, those related to revenue recognition, marketable securities, manufacturing accruals, accrued research and development expenses, stock-based compensation, operating lease right-of-use (ROU) assets and liabilities, 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. The most significant estimates and assumptions that management considers in the preparation of our financial statements relate to revenue recognition, accrued research and development costs, and leases.

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 and autoimmune and inflammatory diseases, and infectious diseases. 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.

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, cash equivalents, and marketable securities. The Company invests in money market funds, U.S. Treasury treasury securities, corporate bonds, commercial paper, and U.S. Government government agency securities. 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 a default by the financial institutions holding its cash, cash equivalents, and restricted cash, and bond issuers to the extent recorded on the balance sheets. The Company's investment policy limits investments to high credit quality securities issued by the U.S. Government government and its agencies, highly rated banks, and corporate issuers, subject to certain concentration limits and restrictions on maturities. The Company has not experienced any material losses on its deposits of cash, cash equivalents, and marketable securities.

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, the Company's early stages of clinical drug development; uncertainties related to the use of engineered IgM antibodies, which is a novel and unproven therapeutic approach; the Company's ability to advance product candidates into, and successfully complete, clinical trials on the timelines it projects; the Company's ability to adequately demonstrate sufficient safety and efficacy of its product candidates; the Company's ability to enroll patients in its ongoing and future clinical trials; the Company's ability to successfully manufacture and supply its product candidates for clinical trials; the occurrence of any event or circumstance that could give rise to the termination of the Company's collaborations with third parties; the Company's ability to obtain additional capital to finance its operations; uncertainties related to the projections of the size of patient populations suffering from the diseases the Company is targeting; the Company's ability to obtain, maintain, and protect its intellectual property rights; developments relating to the Company's competitors and its industry, including competing product candidates and therapies; general economic and market conditions; and other risks and uncertainties, including those more fully described in the "Risk Factors" section of this Annual Report on Form 10-K.

The Company's product candidates will require approvals from the U.S. Food and Drug Administration (FDA) 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.

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 funds, commercial paper, U.S. treasury securities, and corporate bonds U.S. government agency securities and are stated at fair value. Restricted cash consists of the remaining unused portion of a grant received from a non-profit organization which the Company will continue to utilize as it incurs expenses for services performed under the grant agreement.

Marketable Securities

The Company's marketable securities have been classified and accounted for as available-for-sale securities. Fixed income securities consist of U.S. Treasury treasury securities, U.S. government agency securities, corporate bonds, and commercial paper, and U.S. Government

IGM Biosciences, Inc.
Notes to Consolidated Financial Statements — Continued

agency securities. paper. The specific identification method is used to determine the cost basis of fixed income securities sold. These securities are recorded on the consolidated balance sheets at fair value. Unrealized gains and losses on these securities are included as a separate component of accumulated other comprehensive loss. The cost of marketable securities is adjusted for amortization of premiums and accretion of discounts to maturity. Such amortization and accretion are included in other income (expense). Realized gains and losses and declines in fair value judged to be other-than-temporary, if any, are also included in other income (expense). The Company evaluates securities for other-than-temporary impairment at the balance sheet date. Declines in fair value determined to be other-than-temporary are also included in other income (expense). All available-for-sale securities are considered available to support current operations and are classified as current assets. The Company presents any credit losses identified as an allowance rather than as a reduction in the amortized cost of the available-for-sale securities.

For available-for-sale debt securities in an unrealized loss position, the Company first assesses whether it intends to sell, or it is more likely than not that it will be required to sell the security before recovery of its amortized cost basis. If either of the criteria regarding intent or requirement to sell is met, the security's amortized cost basis is written down to fair value and recognized in other income (expense) in the statements of operations. If neither criteria is met, the Company evaluates whether the decline in fair value is related

IGM Biosciences, Inc.
Notes to Consolidated Financial Statements — Continued

to credit-related factors or other factors. In making this assessment, management considers the extent to which fair value is less than amortized cost, any changes to the rating of the security by a rating agency, and adverse conditions specifically related to the security, among other factors. Credit-related impairment losses, limited by the amount that the fair value is less than the amortized cost basis, are recorded through an allowance for credit losses in other income (expense).

Any unrealized losses from declines in fair value below the amortized cost basis as a result of non-credit factors are recognized in accumulated other comprehensive income (loss), net of tax as a separate component of stockholders' equity, along with unrealized gains. Realized gains and losses and declines in fair value, if any, on available-for-sale securities are included in other income (expense) in the statement operations.

For purposes of identifying and measuring credit-related impairments, the Company's policy is to exclude applicable accrued interest from both the fair value and amortized cost basis of the related security. The Company has elected to write-off uncollectible accrued interest receivable balances in a timely manner, which is defined by the Company as when interest due becomes 90 days delinquent.

The accrued interest write-off will be recorded by reversing interest income. Accrued interest receivable is recorded to prepaid expenses and other current assets on the consolidated balance sheets.

Property, Plant and Equipment

Property, plant 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 depreciated using the straight-line method over the shorter of the lease term or the estimated useful economic lives of the related assets. Assets are held in construction in progress until placed in service, upon which date, we begin to depreciate these assets.

Upon retirement or sale of the assets, the cost and related accumulated depreciation and amortization are removed from the balance sheet sheets and the resulting gain or loss are recorded to the statements of operations. Repairs and maintenance are charged to the consolidated statements of operations as incurred.

Leases

The Company determines if an arrangement is a lease at inception. In addition, the Company determines whether leases meet the classification criteria of a finance or operating lease at the lease commencement date considering: (1) whether the lease transfers ownership of the underlying asset to the lessee at the end of the lease term, (2) whether the lease grants the lessee an option to purchase the underlying asset that the lessee is reasonably certain to exercise, (3) whether the lease term is for a major part of the remaining economic life of the underlying asset, (4) whether the present value of the sum of the lease payments and residual value guaranteed by the lessee equals or exceeds substantially all of the fair value of the underlying asset, and (5) whether the underlying asset is of such a specialized nature that it is expected to have no alternative use to the lessor at the end of the lease term. As of December 31, 2022 December 31, 2023, the Company's lease population consisted of real estate leases. As of December 31, 2022, leases and the Company did not have finance leases.

Operating leases are included in operating lease ROU assets and lease liabilities in the Company’s consolidated balance sheet. sheets. ROU assets represent the Company’s right to use an underlying asset for the lease term and lease liabilities represent the Company’s obligation to make lease payments arising from the lease. Operating lease ROU assets and liabilities are recognized at the lease commencement date based on the present value of lease payments over the lease term. In determining the present value of lease payments, the Company uses its incremental borrowing rate based on the information available at the lease commencement date if the rate implicit in the lease is not readily determinable. The Company determines the incremental borrowing rate based on an analysis of corporate bond yields with a credit rating similar to the Company.

The determination of the Company's incremental borrowing rate requires management judgment including the development of a synthetic credit rating and cost of debt as the Company currently does not carry any debt. The Company believes that the estimates used in determining the incremental borrowing rate are reasonable based upon current facts and circumstances. Applying different judgments to the same facts and circumstances could result in the estimated amounts to vary. The operating lease ROU assets also include adjustments for prepayments and accrued lease payments and exclude lease incentives. The Company's lease terms may include options to extend or terminate the lease when it is reasonably certain that the Company will exercise such options. Operating lease cost is recognized on a straight-line basis over the expected lease term. Variable lease costs represent payments that are dependent on usage, a rate or index. Variable lease cost primarily relates to common area maintenance charges. Lease agreements that include lease and non-lease components are accounted for as a single lease component. Lease agreements with a noncancelable term of less than 12 months are not recorded on the Company's consolidated balance sheet. sheets.

Impairment of Long-Lived Assets

The Company evaluates the carrying amount of its long-lived assets, such as property and equipment, 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. During the year ended December 31, 2023, there were impairments on long-lived assets of $0.3 million related to leasehold improvements. There was no impairment of long-lived assets in 2022, 2021 during the years ended December 31, 2022 and 2020. 2021.

Fair Value Measurement

The Company applies fair value accounting for all financial assets and liabilities and non-financial assets and liabilities that are recognized or disclosed at fair value in the consolidated financial statements on a recurring basis. Fair value is an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or liability. As a basis for considering such assumptions, a three-tier fair value hierarchy has been established, which prioritizes the inputs used in measuring fair value as follows:

Level 1—Observable inputs, such as quoted prices in active markets for identical assets or liabilities at the measurement date.

Level 2—Observable inputs other than Level 1 prices 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 assets or liabilities.

Level 3—Unobservable inputs which reflect management's best estimate of what market participants would use in pricing the asset or liability at the measurement date. Consideration is given to the risk inherent in the valuation technique and the risk inherent in the inputs to the model.

In determining fair value, the Company utilizes valuation techniques that maximize the use of observable inputs and minimize the use of unobservable inputs to the extent possible as well as considers counterparty credit risk in its assessment of fair value.

Financial instruments classified within Level 2 of the fair value hierarchy are valued based on other observable inputs, including broker or dealer quotations or alternative pricing sources. When quoted prices in active markets for identical assets or liabilities are not available, the Company relies on non-binding quotes from its investment managers, which are based on proprietary valuation models of independent pricing services. These models generally use inputs such as observable market data, quoted market prices for similar instruments, or historical pricing trends of a security relative to its peers.

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Notes to Consolidated Financial Statements — Continued

Revenue Recognition

For arrangements or transactions between participants determined to be within the scope of Accounting Standard Codification (ASC) Topic 606, "*Revenue from Contracts with Customers*" (Topic 606) the Company performs the following steps to determine the appropriate amount of revenue to be recognized as the Company fulfills its obligations: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price, including variable consideration, if any; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation.

The Company has entered into and may enter into additional collaboration agreements in the future under which it may obtain upfront payments, milestone payments, royalty payments, profit sharing, and other fees. Promises under these arrangements may include intellectual property licenses, research and development services, and the participation in joint committees.

At contract inception, the Company assesses the goods or services promised and enforceable in a contract with a customer and identifies those distinct goods and services that represent a performance obligation. In assessing whether a promised good or service is distinct, and therefore a performance obligation, the Company considers factors such as the nature of the research, stage of development of the targets, manufacturing and commercialization capabilities of the customer and the availability of the associated expertise in the general marketplace. The Company also considers the intended benefit of the contract in assessing whether a promised good or service is separately identifiable from other promises in the contract. If a promised good or service is not distinct, the Company combines that good or service with other promised goods or services until it identifies a bundle of goods or services that is distinct. Promised goods and services that are not material in the context of the contract are not considered performance obligations. Additional goods or services that are exercisable at a customer's discretion, including substitution rights, are assessed to determine if they provide a material right to the customer and if so, they are considered performance obligations.

The transaction price is the amount of consideration to which the Company expects to be entitled in exchange for transferring promised goods or services to a customer. The consideration promised in a contract with a customer may include fixed amounts, variable amounts, or both. Non-refundable upfront payments are considered fixed consideration and included in the transaction price.

If an arrangement includes development, regulatory or commercial milestone payments, the Company evaluates whether the milestones are considered probable of being reached and estimates the amount to be included in the transaction price using the most likely amount method. The Company includes the amount of estimated variable consideration, including milestones, in the transaction price to the extent that it is probable that a significant reversal of cumulative revenue recognized will not occur. Milestone payments that are not within the Company's control or the licensee's control, such as regulatory approvals, are generally not considered probable of being achieved until those approvals are received. For arrangements with licenses of intellectual property that include sales-based royalties, including milestone payments based on the level of sales, and if the license is deemed to be the predominant item to which the royalties relate, the Company recognizes royalty revenue and sales-based milestones at the later of (i) when the related sales occur, or (ii) when the performance obligation to which the royalty has been allocated has been satisfied.

IGM Biosciences, Inc.

Notes to Consolidated Financial Statements — Continued

If it is determined that multiple performance obligations exist, the transaction price is allocated at the inception of the agreement to all identified performance obligations based on the relative standalone selling prices (SSP), unless the consideration is variable and meets the criteria to be allocated entirely to one or more, but not all, performance obligations in the contract. The relative SSP for each deliverable is estimated using objective evidence if it is available. If SSP is not directly observable the Company estimates the SSP at an amount that would result in the allocation of the transaction price in an amount that depicts the amount of consideration to which the entity expects to be entitled in exchange for transferring the promised goods or services to the customer, using methods such as the expected cost plus margin approach. Once the transaction price has been allocated to a performance obligation using the applicable methodology, it is not subject to reassessment for subsequent changes in standalone selling prices.

Collaboration revenue is recognized when, or as, the Company satisfies a performance obligation. The Company recognizes revenue over time by measuring the progress toward complete satisfaction of the relevant performance obligation using an appropriate input method based on the nature of the good or service promised to the customer. After contract inception, the transaction price is reassessed at every period end and updated for changes such as resolution of uncertain events.

IGM Biosciences, Inc.

Notes to Consolidated Financial Statements — Continued

Management may be required to exercise considerable judgment in estimating revenue to be recognized. Judgment is required in identifying performance obligations, estimating the transaction price, including variable consideration, estimating the standalone selling prices of identified performance obligations, and applying the input method for revenue recognition, including the estimated budgets for each performance obligation.

Amounts received prior to satisfying the revenue recognition criteria are recorded as deferred revenue in the Company's consolidated balance sheet. sheets. If the related performance obligation is expected to be satisfied within the next twelve months this will be classified in current liabilities. Amounts recognized as revenue prior to receipt are recorded as contract assets in the Company's consolidated balance sheet. sheets. If the Company expects to have an unconditional right to receive consideration in the next twelve months, this will be classified in current assets. A net contract asset or liability is presented for each contract with a customer.

Collaborative Arrangements

The Company analyzes its agreements to assess whether such arrangements involve joint operating activities performed by parties that are both active participants in the activities and exposed to significant risks and rewards dependent on the commercial success of such activities and therefore within the scope of ASC Topic 808, *Collaborative Arrangements* (Topic 808). These assessments are performed throughout the life of the arrangements based on changes in the responsibilities of all parties in the arrangement.

Research and Development Expenses

The Company expenses research and development 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 conducting clinical trials, and other costs related to clinical and 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; (vi) fees under license agreements where no alternative future use exists; and (vii) depreciation of equipment and facilities expenses.

Accrued Research and Development Expenses

The Company records accruals for estimated costs of research, preclinical studies, clinical trials, and manufacturing, 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 CROs generally include pass-through fees such as laboratory supplies and services, regulatory expenses, investigator fees, travel costs and other miscellaneous costs, including shipping and printing fees. The Company's contracts with the CMOs generally include fees such as initiation fees, reservation fees, 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. In the event the Company makes advance payments, the payments are recorded as a prepaid expense and recognized as the services are performed.

As actual costs become known, the Company adjusts its accruals. Although the Company does not expect its estimates to be materially different from amounts actually incurred, such estimates for the status and timing of services performed relative to the actual status and timing of services performed may vary and could result in the Company reporting amounts that are too high or too low in any particular period. The Company's accrual is dependent, in part, upon the receipt of timely and accurate reporting from CROs and other third-party vendors. Variations in the assumptions used to estimate accruals including, but not limited to, the number of patients enrolled, the rate of patient enrollment and the actual services performed, may vary from the Company's estimates, resulting in adjustments to clinical trial expenses in future periods. Changes in these estimates that result in material changes to the Company's

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IGM Biosciences, Inc.
Notes to Consolidated Financial Statements — Continued

accruals could materially affect its financial condition and results of operations. Through December 31, 2022 December 31, 2023, there have been no material differences from the Company's estimated accrued research and development expenses to actual expenses.

Acquired In-Process Research and Development Expenses

The Company has entered into agreements (see Note 7 – License Agreements) with third parties to acquire the rights to develop and potentially commercialize certain products. Such agreements generally require an initial payment by the Company when the contract is executed. The purchase of license rights for use in research and development activities, including product development, are expensed as incurred and are classified as research and development expense. Additionally, the Company may be obligated to make future royalty payments in the event the Company commercializes the technology and achieves a certain sales volume. In accordance with ASC Topic 730, *Research and Development*, (Topic 730), expenditures for research and development, including upfront licensing fees and milestone payments associated with products not yet been approved by the FDA, are charged to research and development expense as incurred. Future contract milestone and/or royalty payments will be recognized as expense after the achievement of the milestone and the corresponding milestone payment is legally due.

Stock-Based Compensation

The Company accounts for stock-based compensation by measuring and recognizing compensation expense for all share-based awards made to employees, non-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. The

grant date fair value of restricted stock units is estimated based on the closing stock price of the Company's common stock on the date of grant. The grant date fair value of stock options granted to employees and directors is estimated using the Black-Scholes option-pricing model. The Company accounts for forfeitures as they occur. The fair value of each purchase right under the employee stock

IGM Biosciences, Inc.

Notes to Consolidated Financial Statements — Continued

purchase plan (ESPP) is estimated at the beginning of the offering period using the Black-Scholes option pricing model and recorded as expense over the service period using the straight-line method.

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 is subject to taxation in the United States federal jurisdiction, and various state jurisdictions. Due to the Company's net operating loss carryforwards, the Company's income tax returns remain subject to examination by federal and state tax authorities for all tax years. The Company's policy is to recognize interest expense and penalties related to income tax matters as a component of income tax expense. As of December 31, 2022 December 31, 2023, there were no significant accruals for interest related to unrecognized tax benefits or tax penalties.

Comprehensive Loss

Comprehensive loss represents the net loss for the period and other comprehensive loss. Other comprehensive loss reflects certain gains and losses that are recorded as a component of stockholders' equity and are not reflected in the consolidated statements of operations. The Company's other comprehensive loss consists of changes in unrealized gains and losses on available-for-sale securities.

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 (including non-voting common stock and pre-funded warrants) outstanding during the period, without consideration for all other common stock

IGM Biosciences, Inc.

Notes to Consolidated Financial Statements — Continued

equivalents. Shares of common stock into which the pre-funded warrants may be exercised are considered outstanding for the purposes of computing net loss per share because the shares may be issued for little or no consideration, are fully vested, and are exercisable after the original issuance date. 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.

Reclassification

Certain reclassifications have been made to prior period amounts to conform to current period presentation. These reclassifications did not have an impact on the Company's results of operations or financial position as of December 31, 2022 December 31, 2023, 2021, 2022, and 2020, 2021.

Recently Issued Accounting Pronouncements

In October 2023, the FASB issued ASU 2023-06, *Disclosure Improvements - Codification Amendments in Response to the SEC's Disclosure Update and Simplification Initiative,* which will impact various disclosure areas. The amendments in ASU 2023-06 will be effective on the date the related disclosures are removed from Regulation S-X or Regulation S-K by the SEC, and will no longer be effective if the SEC has not removed the applicable disclosure requirement by June 30, 2027. The Company is currently evaluating the impacts of this standard on its related disclosures.

In November 2023, the FASB issued ASU 2023-07, *Segment Reporting (Topic 280),* which improves reportable segment disclosure requirements, primarily through enhanced disclosures about significant segment expenses. This ASU is effective for fiscal years beginning after December 15, 2023 and is applicable to public entities, including those that have a single reportable segment. Early adoption is permitted. The Company is currently evaluating the impacts of this standard on its consolidated financial statements and related disclosures.

In December 2023, the FASB issued ASU 2023-09, *Improvements to Income Tax Disclosures*, which amends the guidance in ASC 740, *Income Taxes*. The ASU is intended to improve the transparency of income tax disclosures by requiring (1) consistent categories and greater disaggregation of information in the rate reconciliation and (2) income taxes paid disaggregated by jurisdiction. It also includes certain other amendments to improve the effectiveness of income tax disclosures. The ASU's amendments are effective for public business entities for annual periods beginning after December 15, 2024. Entities are permitted to early adopt the standard for annual financial statements that have not yet been issued or made available for issuance. Adoption is permitted either prospectively or retrospectively. The Company will adopt this ASU on a prospective basis. The Company is currently evaluating the impact of this standard but does not expect any material impacts on its consolidated financial statements and related disclosures.

Recently Adopted Accounting Pronouncements

In June 2016, the FASB issued ASU 2016-13,*Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*, which requires that financial assets measured at amortized cost be presented at the net amount expected to be collected. The measurement of expected credit losses is based on historical experience, current conditions, and reasonable and

supportable forecasts that affect collectability. This ASU also eliminates the concept of “other-than-temporary” impairment when evaluating available-for-sale debt securities and

IGM Biosciences, Inc.

Notes to Consolidated Financial Statements — Continued

instead focuses on determining whether any impairment is a result of a credit loss or other factors. An entity will recognize an allowance for credit losses on available-for-sale debt securities rather than an other-than-temporary impairment that reduces the cost basis of the investment. This ASU is effective for fiscal years beginning after December 15, 2022 and interim periods within those fiscal years. Early adoption is permitted. The Company plans adopted ASU 2016-13 on January 1, 2023, using the modified retrospective approach, and no cumulative effect adjustment to adopt this standard and related updates effective January 1, 2023, and does accumulated deficit was needed as of the adoption date. Additionally, no prior period amounts were adjusted. The adoption of ASU 2016-13 did not anticipate it will have a material impact on its the Company’s consolidated financial statements and related disclosures upon adoption.all current period amounts are reported under the Available-for-Sale Debt Securities Impairment Model (ASC 326-30).

IGM Biosciences, Inc.

Notes to Consolidated Financial Statements — Continued

Note 3. Fair Value Measurement

The Company measures and reports certain financial instruments as assets and liabilities at fair value on a recurring basis. The following tables set forth the fair value of the Company’s financial assets, which consist of cash equivalents and marketable securities measured and recognized at fair value (in thousands):

December 31, 2022					December 31, 2023				
Fair Value Hierarchy Level	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value	Fair Value Hierarchy Level	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value

Cash equivalents:										
Money market funds	Level 1	26,71			26,71	Level 1	$ 21,458	$ —	$ —	$ 21,458
		$ 8	$ —	$ —	$ 8					
U.S. treasury securities						Level 1	25,896	2	—	25,898
Commercial paper	Level 2	66,73		(1	66,71	Level 2				
		2	—	6)	6		54,427	—	(27)	54,400
U.S. Government agency securities	Level 2	20,47			20,48					
		7	7	—	4					
U.S. government agency securities						Level 2	4,951	1	—	4,952
Marketable securities:										
U.S. Treasury securities	Level 1	12			12					
		7,2		(3	6,9					
		34	6	18)	22					
U.S. treasury securities						Level 1	182,289	214	(14)	182,489
Corporate bonds	Level 2	12,53			12,53	Level 2				
		1	2	(3)	0		13,986	—	(8)	13,978
Commercial paper	Level 2	14			14	Level 2				
		2,7		(1	2,5					
		26	—	95)	31		20,216	—	(17)	20,199
U.S. Government agency securities	Level 2	24,13			23,94					
		2	—	(1 84)	8					
U.S. government agency securities						Level 2	8,491	11	(11)	8,491

Total		42 0,5 $ 50	1 $ 5	(7 $ 16)	41 9,8 $ 49		$ 331,714	$ 228	$ (77)	$ 331,865

	December 31, 2021					December 31, 2022				
	Fair Value Hierarchy Level	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value	Fair Value Hierarchy Level	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Cash equivalents:										
Money market funds	Level 1	99, 32 $ 6	$ —	$ —	99, 32 $ 6	Level 1	$ 26,718	$ —	$ —	$ 26,718
Commercial paper	Level 2	25, 99 6	—	(1)	25, 99 5	Level 2	66,732	—	(16)	66,716
U.S. government agency securities						Level 2	20,477	7	—	20,484
Marketable securities:										
U.S. treasury securities						Level 1	127,234	6	(318)	126,922
Corporate bonds	Level 2	1,8 02	—	(1)	1,8 01	Level 2	12,531	2	(3)	12,530
Marketable securities:										
U.S. Treasury securities	Level 1	2,4 99	—	—	2,4 99					
U.S. Government agency securities	Level 2	24, 26 0	—	(2 4)	24, 23 6					
Commercial paper	Level 2	51, 37 6	—	(1 1)	51, 36 5	Level 2	142,726	—	(195)	142,531

Corporate bonds	Level 2	18,137	—	(29)	18,108			
U.S. government agency securities	Level 2					24,132	—	(184)	23,948
Total		22,337	—	(6)	22,331			
		$ 96	$ —	$ 6)	$ 30	$ 420,550	$ 15	$ (716)	$ 419,849

The Company evaluates transfers between levels at the end of each reporting period. There were no transfers between Levels 1, 2 and 3 during the years ended December 31, 2022 December 31, 2023 and 2021. 2022. As of December 31, 2022 December 31, 2023 and 2021, 2022, there were no financial instruments classified as Level 3.

As of December 31, 2022 and 2021, all debt securities with an unrealized loss position have been in a loss position for less than one year. The aggregate fair value of debt following table summarizes the available-for-sale securities in an unrealized loss position for which an allowance for credit losses has not been recorded as of December 31, December 31, 2023 and 2022, aggregated by major security type and length of time in a continuous unrealized loss position:

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	December 31, 2023					
	Less than 12 months		Greater than 12 months		Total	
	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses
U.S. treasury securities	$ 28,137	$ (14)	$ —	$ —	$ 28,137	$ (14)
Corporate bonds	13,978	(8)	—	—	13,978	(8)
Commercial paper	74,599	(44)	—	—	74,599	(44)
U.S. government agency securities	4,771	(11)	—	—	4,771	(11)
Total	$ 121,485	$ (77)	$ —	$ —	$ 121,485	$ (77)

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	December 31, 2022					
	Less than 12 months		Greater than 12 months		Total	
	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses
U.S. treasury securities	$ 99,870	$ (318)	$ —	$ —	$ 99,870	$ (318)
Corporate bonds	2,848	(3)	—	—	2,848	(3)
Commercial paper	127,163	(211)	—	—	127,163	(211)
U.S. government agency securities	23,948	(184)	—	—	23,948	(184)
Total	$ 253,829	$ (716)	$ —	$ —	$ 253,829	$ (716)

As of December 31, 2023 and 2022, and 2021 were $ the Company held 253.8 35 million and $105.5 69 million, debt securities, respectively, with no individual securities in a significant an unrealized loss position. The Company evaluated its securities for other-than-temporary impairment credit losses and considered the decline in market value to be primarily attributable to current economic and market conditions and would not to a credit loss or other factors. Additionally, the Company does not intend to sell the securities in an unrealized loss position and does not expect it will be required to sell the securities before recovery of the amortized unamortized cost basis. Based on this analysis, As of December 31, 2023 and 2022, an allowance for credit losses has not been recognized. Given the Company's intent and ability to hold such securities until recovery, and the lack of significant change in credit risk of these investments, it does not consider these marketable securities were not considered to be other-than-temporarily impaired as of December 31, 2022 December 31, 2023 and 2021. 2022.

There were no realized gains or losses on marketable securities for years ended December 31, 2023 and 2022. Interest on marketable securities is included in interest income. As of December 31, 2023 and 2022, the Company had accrued interest receivable of $0.8 million and $0.5 million, respectively, which was included in prepaid expenses and other current assets on the consolidated balance sheets.

The following table summarizes the contractual maturities of the Company’s cash equivalents and marketable securities as of December 31, 2023 and 2022 at estimated fair value (in thousands):

	December 31,		December 31,	
	2022	2021	2023	2022
Due in less than one year	$ 419,849	$ 223,330	$ 312,554	$ 419,849
Due in more than one year	—	—	19,311	—
Total	$ 419,849	$ 223,330	$ 331,865	$ 419,849

Note 4. Property, Plant and Equipment, Net

Property, plant and equipment, net consists of the following (in thousands):

	December 31,		December 31,	
	2022	2021	2023	2022
Manufacturing and laboratory equipment	$ 25,631	$ 17,827	$ 32,712	$ 25,631
Office equipment	631	518	2,409	631

Leasehold improvements	14,433	14,172	17,912	14,433
Construction in progress	5,114	2,531	5,798	5,114
Total property, plant and equipment, gross	45,809	35,048	58,831	45,809
Less: Accumulated depreciation	(12,325)	(6,553)	(20,599)	(12,325)
Total property, plant and equipment, net	$ 33,484	$ 28,495	$ 38,232	$ 33,484

Depreciation expense was approximately $6.1 8.3 million, $4.5 6.1 million and $1.0 4.5 million for the years ended December 31, 2022 December 31, 2023, 2022 and 2021, and 2020, respectively.

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IGM Biosciences, Inc.

Notes to Consolidated Financial Statements — Continued

Note 5. Accrued Liabilities

Accrued liabilities consisted of the following (in thousands):

	December 31,		December 31,	
	2022	2021	2023	2022
Accrued research and development materials and services	$ 20,747	$ 10,829	$ 14,625	$ 20,747
Accrued professional services	1,759	1,019	3,147	1,759
Accrued compensation	10,920	6,748	13,527	10,920
Other	195	280	245	195
Total accrued liabilities	$ 33,621	$ 18,876	$ 31,544	$ 33,621

Note 6. Leases

Operating Leases

The Company leases its headquarters with its main offices and laboratory and manufacturing facilities in Mountain View, California. Additionally, the Company has a lease for office and laboratory space in Doylestown, Pennsylvania. These leases require monthly lease payments that may be subject to annual increases throughout the

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IGM Biosciences, Inc.

Notes to Consolidated Financial Statements — Continued

lease term. Certain of these leases also include renewal options at the election of the Company. These optional periods have not been considered in the determination of the right-of-use assets or lease liabilities associated with these leases as the Company did not consider it reasonably certain it would exercise the options. The Company performed evaluations of its contracts and determined it has only operating leases. Variable lease expense for these leases primarily consists of common area maintenance and other operating costs.

During the year ended December 31, 2022, the Company entered into three new lease agreements for office and laboratory space in Mountain View, California. As of December 31, 2022, December 31, 2023 and 2022, two of the three new leases had commenced and were included in the right-of-use assets and lease liabilities balances at the respective year end. ends. The remaining lease with rent payments totaling $9.0 million is expected to commence in September 2024 after the expiration of the existing sublease and therefore has not been included in the right-of-use assets and lease liabilities balances as of December 31, 2022.

During the year ended December 31, 2021, the Company entered into a new lease agreement for office December 31, 2023 and laboratory space in Mountain View, California, and extended the duration of an existing office and laboratory space through June 2032. The Company accounted for the extension as a lease modification and remeasured the lease, which resulted in an increase of $17.5 million to the right-of-use asset and lease liability. The new lease was included in the right-of-use assets and lease liabilities balances as of December 31, 2022 and 2021. 2022.

The following table summarizes the lease costs and cash paid for the Company's leases (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Cash paid for operating lease liabilities	$ 5,548	$ 3,819	$ 3,002
Operating lease cost	6,217	4,137	3,069
Variable lease cost	592	307	216

	Year Ended December 31,		
	2023	2022	2021
Cash paid for operating lease liabilities	$ 8,100	$ 5,548	$ 3,819
Operating lease cost	8,250	6,217	4,137
Variable lease cost	1,084	592	307

The following table summarizes the weighted-average remaining lease term and discount rates for the Company's leases:

	December 31,	
	2022	2021
Lease term (in years)	8.8	9.3
Discount rate	6.3%	4.5%

	December 31,	
	2023	2022
Lease term (in years)	8.1	8.8

Discount rate	6.5%	6.3%

IGM Biosciences, Inc.

Notes to Consolidated Financial Statements — Continued

The maturities of the Company's lease liabilities as of December 31, 2022 December 31, 2023 were as follows (in thousands):

Years Ending December 31,	Operating Lease Commitments
2023	$ 6,905
2024	7,436
2025	6,103
2026	6,207
2027	6,375
Thereafter	28,604
Total	61,630
Less: imputed interest	(15,103)
Less: tenant allowances	(5,355)
Total lease liabilities(1)	$ 41,172

Years Ending December 31,	Operating Lease Commitments
2024	$ 7,892
2025	6,104
2026	6,208
2027	6,377
2028	6,306
Thereafter	22,303
Total	55,190
Less: imputed interest	(12,333)
Less: tenant allowances	(2,351)
Total lease liabilities(1)	$ 40,506

(1) The $9.0 million of future lease commitments for the laboratory lease that will not commence until September 2024 was not included in the lease liabilities balance as of December 31, 2022 December 31, 2023.

IGM Biosciences, Inc.
Notes to Consolidated Financial Statements — Continued

Note 7. License Agreements

The Company enters into arrangements to in-license research and development technology rights with third parties relating to its clinical and pre-clinical programs and product candidates. These arrangements may include non-refundable, upfront payments, payments for options to acquire additional rights relating to its product candidates, as well as contingent obligations for potential development, regulatory and commercial performance milestone payments, and royalty payments. The Company's obligation to make payments for contingent obligations is contingent upon the respective milestones being achieved as well as its continued involvement in the programs and/or the lack of any adverse events which could cause the discontinuance of the programs. The activities under these license agreements are performed with no guarantee of either technological or commercial success.

During the years ended December 31, 2022 December 31, 2023, 2021, 2022, and 2020 2021 the Company recorded $3.3 1.9 million, $5.3 3.3 million and $1.7 5.3 million, respectively, as research and development expense in our consolidated statements of operations related to license agreements.

As of December 31, 2022 December 31, 2023, the Company's license agreements for technologies optioned by the Company, including the Medivir agreement described below, included potential future payments for development, regulatory, and sales milestones totaling approximately $365.9 361.9 million plus royalties on net sales that range from single digits to mid-teens.No milestones were achieved or deemed probable as of December 31, 2023.

Medivir Agreement

In January 2021, the Company entered into an exclusive license agreement with Medivir AB (Medivir) through which the Company received global, exclusive development and commercialization rights for birinapant, a clinical-stage Second Mitochondrial-derived Activator of Caspases (SMAC) mimetic. Under the terms of the agreement, the Company made an upfront payment of $1.0 million upon signing the agreement, and made an additional $1.5 million payment in November 2021 due to the Company's initiation of a Phase 1 clinical trial of IGM-8444 aplitabart in combination with birinapant. Under the terms of the agreement, should birinapant be successfully developed and approved, the Company is would be obligated to make additional milestone payments up to a total of approximately $348.5 million, plus tiered royalties from the mid-single digits up to mid-teens on net sales.No milestones were achieved or deemed probable as of December 31, 2023.

IGM Biosciences, Inc.

Notes to Consolidated Financial Statements — Continued

Note 8. Stockholder's Stockholders' Equity

Common Stock and Non-Voting Common Stock

As of December 31, 2022 December 31, 2023 and 2021, 2022, the Company's certificate of incorporation authorized the Company to issue 1,200,000,000 shares of common stock (including 200,000,000 shares of non-voting common stock) and 200,000,000 shares of preferred stock, at a par value of $0.01 per share. Each share of common stock (excluding non-voting common stock) is entitled to one vote. The holders of common stock are also entitled to receive dividends whenever funds are legally available and when declared by the Company's Board of Directors, subject to prior rights of the preferred stockholders. As of December 31, 2022 December 31, 2023 and 2021, 2022, no dividends have been declared.

The Company had reserved common stock, on an as-converted basis, for future issuance as follows:

	December 31,		December 31,	
	2022	2021	2023	2022
Stock options, issued and outstanding	5,802,317	3,764,001	6,766,340	5,802,317
Restricted stock units	401,180	358,535	658,792	401,180
Stock options and restricted stock units, future issuance	1,310,601	2,618,117	3,536,312	1,310,601
Employee stock purchase plan, available for future grants	1,109,032	855,206	1,376,988	1,109,032
Pre-funded warrants	1,334,332	1,334,332	1,334,332	1,334,332
Total	9,957,462	8,930,191	13,672,764	9,957,462

Stock Offerings

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Table On July 3, 2023, the Company completed an underwritten public offering for the issuance of Contents
3,187,500 shares of voting common stock and
Index 9,000,000 shares of non-voting common stock at a public offering price of $8.00 per share pursuant to Financial Statements a shelf registration statement on Form S-3 (2023 Public Offering). This includes the full exercise by the underwriters of their option to purchase up to
1,589,673 shares of voting common stock. Of the shares sold in the 2023 Public Offering, 3,187,500 shares of voting common stock and 3,375,000 shares of non-voting common stock were issued on June 26, 2023, and the remaining 5,625,000 shares of non-voting common stock were issued on July 3, 2023.

IGM Biosciences, Inc. On June 26, 2023, the Company also issued and sold 2,812,500 shares of its non-voting common stock in a concurrent private placement exempt from the registration requirements of the Securities Act at a sale price of $8.00 per share.

Notes to Consolidated Financial Statements — Continued The total net proceeds received by the Company from the 2023 Public Offering and concurrent private placement were $

113.5

Public Offerings million, after deducting underwriting discounts and Pre-Funded Warrants commissions and offering costs of $6.5 million.

In April 2022, the Company issued and sold 10,000,000 shares of common stock, including 8,695,653 shares of non-voting common stock and the full exercise of the underwriters' option to purchase 1,304,347 shares of voting common stock, each at a public offering price of $23.00 per share in an underwritten public offering pursuant to a shelf registration statement on Form S-3. The net proceeds to the Company from the offering were $218.0 million, after deducting underwriting discounts and commissions and offering costs of $12.0 million.

Pre-Funded Warrants

In December 2020, the Company issued and sold 1,221,224 shares of voting common stock at a public offering price of $90.00 per share and pre-funded warrants to purchase up to 1,334,332 shares of common stock at a public offering price of $89.99 per warrant in an underwritten public offering pursuant to a shelf registration statement on Form S-3. This includes at the full exercise by the underwriters of their option to purchase up to 333,333 additional shares of common stock. The pre-funded warrants were issued to two separate related party affiliates. The net proceeds to the Company from the offering were $215.4 million, after deducting underwriting discounts and commissions and offering costs of $14.6 million.

The public offering price of the pre-funded warrants was equal to the public offering price of the common stock, less the $0.01 per share exercise price of each warrant. warrant and were issued to two separate related party affiliates. The pre-funded warrants were recorded as a component of stockholders' equity within additional paid-in-capital and will expire on the date any such warrant is exercised in full.

Subject to applicable law, upon exercise of a pre-funded warrant, a holder may elect to receive the same number of shares of non-voting common stock as the shares of common stock for which the pre-funded warrant is exercisable, provided that (i) at the time of such election there is a sufficient number of authorized but unissued and otherwise unreserved shares of non-voting common stock and (ii) the Company consents to such election.

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The outstanding pre-funded warrants to purchase shares of common stock are exercisable at any time after their original issuance. However, the Company may not effect affect the exercise of any pre-funded warrants, and a holder will not be entitled to exercise any portion of any pre-funded warrants that, upon giving effect to such exercise, would cause: (i) the aggregate number of shares of the Company's common stock beneficially owned by such holder (together with its affiliates) to exceed 9.99% of the number of shares of the

Company's common stock outstanding immediately after giving effect to the exercise; or (ii) the combined voting power of the Company's securities beneficially owned by such holder (together with its affiliates) to exceed 9.99% of the combined voting power of all of the Company's securities outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the pre-funded warrants. However, any holder of a pre-funded warrant may increase or decrease such percentage to any other percentage not in excess of 19.99% upon at least 61days' prior notice from the holder to the Company. As of December 31, 2022 December 31, 2023, no shares underlying the pre-funded warrants had been exercised. All of the outstanding pre-funded warrants are included in the weighted-average number of shares of common stock used to calculate basic net loss per share attributable to common stockholders (see Note 13 14 – Net Loss Per Share Attributable to Common Stockholders).

Note 9. Sanofi Agreement

In March 2022, the Company entered into a global collaboration and license agreement (the Sanofi Agreement) with Genzyme Corporation, a wholly owned subsidiary of Sanofi (Sanofi), which became effective in May 2022 upon satisfaction of the closing conditions. Under the terms of the Sanofi Agreement, the Company will generate, develop, manufacture and commercialize IgM antibodies directed to six primary targets, three of which are intended as oncology targets and three of which are intended as immunology targets.

For each oncology target collaboration program, the Company will lead research and development activities, and assume related costs, through receipt of the first marketing approval for a licensed product directed to that oncology target by the Food and Drug Administration (FDA) or European Medicines Agency (EMA) in exchange for up to $940 million in development and regulatory milestones per oncology target. After receipt of the first marketing approval for a licensed product directed to an oncology target, Sanofi will lead all subsequent development and

commercialization activities for that oncology target. For each licensed product directed to an oncology target, the companies will share profits 50:50 in certain major markets, subject to certain exceptions, and the Company will be eligible to receive tiered low double-digit to mid-teen royalties on net sales of licensed products in the rest of world, subject to certain reductions and offsets. However, the Company has the right to opt-out of any future research and development responsibilities for each oncology target collaboration program at any time after completion of a Phase 1 clinical trial for an oncology target collaboration program. As a result of exercising this opt-out right, the Company would no longer share profits 50:50 but would instead be eligible for certain sales milestones and tiered royalties on net sales.

For each immunology target collaboration program, the Company will lead research and development activities, and assume related costs, through the completion of the first Phase 1 clinical trials for up to two candidates directed to each immunology target, after which Sanofi will be responsible for all future development and commercialization activities and related costs, in exchange for up to $1.065 billion in aggregate development, regulatory and commercial milestones per immunology target. Following the completion of the first Phase 1 clinical trials for each immunology target, Sanofi will be responsible for subsequent development activities, commercialization efforts, and related costs. The Company is eligible to receive tiered high single-digit to low-teen royalties on global net sales for licensed products related to immunology targets, subject to certain reductions and offsets.

Subject to earlier expiration in certain circumstances, the Sanofi Agreement expires on a licensed product-by-licensed product and country-by-country basis until the expiration of the applicable profit and loss share term or royalty term, as the case may be. Sanofi has the right to terminate the Sanofi Agreement on a collaboration target-by-collaboration target basis or country-by-country basis with or without cause, upon specified prior notice.

After considering the level of involvement and participation in the joint activities and the related exposure to the risks and rewards of the collaboration, the Company determined that at inception, the Sanofi Agreement does not fall within the collaborative arrangement guidance in Topic 808, and that Sanofi is a customer of the Company for all initial promised goods and services and therefore the agreement is directly within the scope of Topic 606.

The Company identified promised goods and services in the Sanofi Agreement related to the grant of intellectual property license, performance of specified research, development and other various activities. The Company determined that for each of the six targets,

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IGM Biosciences, Inc.

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the identified promised goods and services are not distinct from each other on a target-by-target basis. The licenses, considered to be functional intellectual property, were determined to not be capable of being distinct due to the specialized nature of the research, development, and other activities to be provided by the Company. Accordingly, the promised goods and services, which consist of the granting of intellectual property licenses and the performance of specified research, development and other various activities, were combined together as one single performance obligation, on a target-by-target basis. The Company determined that the underlying promised goods and services for each of the six targets are both capable of being distinct and distinct within the context of the contract from each of the other targets. Therefore, the Company concluded that there are six performance obligations in the Sanofi Agreement, one for each target, that are comprised of the underlying promised goods and services. Other components and options within the Sanofi Agreement were determined to not provide Sanofi with free or discounted goods or services and therefore did not constitute a material right or were deemed immaterial in the context of the contract.

To determine the transaction price, the Company evaluated all the payments to be received during the duration of the contract. In May 2022, the Company received a $150.0 million upfront payment as part of the Sanofi Agreement. Additionally, in April 2022, Sanofi purchased non-voting common stock in connection with the Company's public common stock offering (see Note 8 – Stockholders' Equity). The Company concluded that at inception and as of December 31, 2022 December 31, 2023, the transaction price was $150.0 million and was comprised solely of the fixed non-refundable upfront payment. No consideration received from Sanofi as part of the April 2022 offering was deemed necessary to include in the transaction price as Sanofi purchased the shares at the same offering price as the other participating investors.

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The potential development and regulatory milestone payments that the Company is eligible to receive were excluded from the transaction price, as the milestone amounts were fully constrained, since the milestones relate to successful achievement of certain development results and regulatory approvals, which might not be achieved. The Company determined that the royalties and commercial milestone payments relate predominantly to the license of intellectual property and are therefore excluded from the transaction price under the sales- or usage-based royalty exception of ASC 606. The Company will reevaluate the transaction price, including all constrained amounts, at the end of each reporting period and as uncertain events are resolved or other changes in circumstances occur, and the Company will adjust its estimate of the transaction price as necessary. The Company will recognize the royalties and commercial milestone payments as revenue when the associated sales occur, and relevant sales-based thresholds are met.

The Company allocated the transaction price based on the estimated SSP of each of the six performance obligations. The Company determined the SSP for each of the six performance obligations based on the estimated costs to complete the underlying activities of each performance obligation and included factors such as forecasted internal costs, estimated third-party expenditures, development timelines and scenarios, probability of target failures and selection of substitute targets, and program-specific factors. These estimated cost forecasts were based on observable data for both market and entity specific factors, such as considering the actual and expected costs of the Company's existing research and development programs and adjusting for factors specific to the targets identified.

The Company recognizes revenue using an input method of costs incurred as a percentage of total estimated costs for each of the performance obligations under the contract. Costs consist primarily of internal personnel costs and third-party contract expenses related to the programs of the Sanofi Agreement. The cumulative effect of revisions to estimated costs to complete the Company's performance obligations is recorded in the period in which changes are identified and amounts can be reasonably estimated.

For the year ended December 31, 2022, December 31, 2023 and 2022, the Company recognized collaboration revenue from a customer related to the Sanofi Agreement of $2.1 million and $1.1 million. As of December 31, 2022, December 31, 2023 and 2022, $146.8 million and $148.9 million was recorded as deferred revenue related to the Sanofi Agreement, respectively, of which $3.8 million and $2.7 million was current, on the consolidated balance sheet related to the Sanofi Agreement. sheets. The deferred revenue is expected to be recognized over the research and development period of the programs through the completion of Phase 1 clinical trials.

Contract Balances from Customer Contract

The timing of revenue recognition, billings and cash collections results in contract assets and contract liabilities on the consolidated balance sheets. The Company recognizes license and development receivables based on billed services, which are derecognized settled upon reimbursement. When consideration is received, or such consideration is unconditionally due, from a customer prior to transferring goods or services to the customer under the terms of a contract, a contract liability is recorded. Contract liabilities are recognized as revenue after control of the goods or services is transferred to the customer and all revenue recognition criteria have been met.

The following table presents changes in the Company's customer contract liabilities for the periods presented (in thousands):

Year Ended December 31, 2022	December 31, 2021	Additions	Deductions	December 31, 2022
Contract liabilities:				
Deferred revenue	$ —	$ 150,000	$ (1,069)	$ 148,931

The Company had no customer contract assets during the years ended December 31, 2022 and 2021. 109

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The following tables present changes in the Company's customer contract liabilities for the periods presented (in thousands):

Year Ended December 31, 2023	December 31, 2022	Additions	Deductions	December 31, 2023
Contract liabilities:				
Deferred revenue	$ 148,931	$ —	$ (2,130)	$ 146,801

Year Ended December 31, 2022	December 31, 2021	Additions	Deductions	December 31, 2022
Contract liabilities:				
Deferred revenue	$ —	$ 150,000	$ (1,069)	$ 148,931

The Company had no customer contract assets during the years ended December 31, 2023 and 2022.

Note 10. Stock-Based Compensation

2010 Stock Plan (as Amended and Restated)

The 2010 Stock Plan (the 2010 Plan) was originally adopted by the Company's Board of Directors and approved by the Company's stockholders in November 2010. The 2010 Plan was amended and restated in December 2017 and April 2019. The 2010 Plan allowed the Company 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 and any parent or subsidiary of the Company. The 2010 Plan was terminated in 2019 and the Company will not grant any additional awards under the 2010 Plan. However, the 2010 Plan will continue to govern the terms and conditions of the outstanding awards previously granted under the 2010 Plan.

2018 Omnibus Incentive Plan (as Amended and Restated)

In September 2019, the Company adopted an amendment and restatement of the 2018 Omnibus Incentive Plan (the 2018 Plan) which provides for the grant of incentive stock options, within the meaning of Section 422 of the Code to employees, and for the grant of nonstatutory stock options, restricted stock, restricted stock units (RSUs), stock appreciation rights, performance units, and performance shares to employees, directors, and consultants of the Company.

Options granted under the 2018 Plan expire no later than 10 years from the date of grant. The exercise price of options granted under the 2018 Plan must at least be equal to the fair market value of the Company's common stock on the date of grant. With respect to any

participant who owns more than 10% of the voting power of all classes of the Company's 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. Employee stock options generally vest over a four year period.

Awards granted under the 2018 Plan expire no later than 10 years from the date of the grant. Awards outstanding as of December 31, 2022 December 31, 2023 vest over two to four years.

Subject to an annual evergreen increase and adjustment in the case of certain capitalization events, the Company initially reserved 4,384,000 shares of the Company's common stock for issuance pursuant to awards under the 2018 Plan. The 2018 Plan is administered by the Compensation Committee of the Company's Board of Directors. The number of shares of the Company's common stock available for issuance under the 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 (i) 8,768,800 shares, (ii) 4% of the Company's common stock and non-voting common stock outstanding at December 31 of the immediately preceding year, or (iii) such number of shares as determined by the Company's Board of Directors. On June 23, 2023, the Company's stockholders approved an amendment and restatement to the 2018 Plan, which provided for an increase in the number of shares of common stock reserved for issuance thereunder by 2,160,000 shares.

As of December 31, 2022 December 31, 2023, 1,310,601 3,536,312 shares of common stock remained available for issuance under the 2018 Plan. Effective January 1, 2023 January 1, 2024, the number of shares of common stock available under the 2018 Plan increased by 1,723,292 2,347,245 shares to 3,033,893 5,883,557 shares pursuant to the evergreen provision of the 2018 Plan.

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2019 Employee Stock Purchase Plan

The 2019 Employee Stock Purchase Plan (the ESPP) became effective in September 2019. 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 qualify (the Non-423 Component). The ESPP allows eligible employees to purchase shares of the Company's common stock at a discount through payroll deductions of up to 15% of their eligible compensation. At the end of each offering period, employees are able to purchase shares at 85% of the lower of the fair market value of the Company's common stock at the beginning of the offering period or at the end of each applicable purchase period.

Subject to adjustment in the case of certain capitalization events, a total of 280,000 common shares of the Company were available for purchase at adoption of the ESPP. Pursuant to the ESPP, the annual share increase pursuant to the

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evergreen provision is determined based on the least of (i) 560,000 shares, (ii) 1% of the Company's common stock and non-voting common stock outstanding at December 31 of the immediately preceding year, or (iii) such number of shares as determined by the Company's Board of Directors.

As of December 31, 2022 December 31, 2023, 1,109,032 1,376,988 shares of common stock remained available for issuance under the ESPP. Effective January 1, 2023 January 1, 2024, the number of shares of common stock available under the ESPP increased by 430,823 560,000 shares to 1,539,855 1,936,988 shares pursuant to the evergreen provision of the ESPP.

Stock Options

The following table summarizes stock option activity:

	Shares Issuable Under Options	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in thousands)	Shares Issuable Under Options	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in thousands)
Outstanding as of December 31, 2021	3,764,001	$ 40.41	7.8	$ 39,862				
Outstanding as of December 31, 2022					5,802,317	$ 31.59	7.9	$ 17,428
Granted	2,580,327	$ 18.18			1,835,018	$ 13.83		
Exercised	(236,140)	$ 2.34			(77,762)	$ 1.56		
Forfeited	(305,871)	$ 49.51			(793,233)	$ 25.73		
Outstanding as of December 31, 2022	5,802,317	$ 31.59	7.9	$ 17,428				
Options exercisable as of December 31, 2022	2,662,124	$ 28.78	6.8	$ 16,745				
Outstanding as of December 31, 2023					6,766,340	$ 27.81	7.0	$ 6,823

Options exercisable as of December 31, 2023	4,055,579	$ 30.14	5.9	$ 6,697

Stock-Based Compensation Expense

Stock-based compensation expense recorded related to the 2010 Plan, 2018 Plan, and ESPP was recorded in the statements of operations and allocated as follows (in thousands):

	Year Ended December 31,			Year Ended December 31,		
	2022	2021	2020	2023	2022	2021
Research and development	$ 25,620	$ 12,264	$ 4,160	$ 27,499	$ 25,620	$ 12,264
General and administrative	19,090	13,609	4,294	19,048	19,090	13,609
Total stock-based compensation expense	$ 44,710	$ 25,873	$ 8,454	$ 46,547	$ 44,710	$ 25,873

As of December 31, 2022 December 31, 2023, the Company had a total of $73.9 45.7 million of unrecognized stock-based compensation expense for options outstanding, which is expected to be recognized over a weighted-average period of 2.8 2.4 years.

The aggregate intrinsic value of options exercised for the years ended December 31, 2022 December 31, 2023, 2022, and 2021 and 2020 was $0.9 million, $4.6 million, $32.3 million, and $12.5 32.3 million, respectively. Intrinsic values of options exercised are calculated as the difference between the exercise price of the underlying options and the fair value of the common stock on the date of exercise. Intrinsic values of options outstanding are calculated as the difference between the exercise price of the underlying options and the fair value of the common stock as of the reporting date.

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For the years ended December 31, 2022 December 31, 2023, 2021, 2022, and 2022, 2021, the weighted-average grant date fair value of options granted was $13.31 10.62, $56.44 13.31, and $31.70 56.44, respectively.

In determining the fair value of the stock-based awards, the Company uses the Black-Scholes option-pricing model and assumptions discussed below. Each of these inputs is subjective and generally requires judgment to determine.

Expected Term

The Company's expected term represents the period that the Company's stock-based awards are expected to be outstanding and is determined using the simplified method (based on the mid-point between the vesting date and the end of the contractual term). The Company utilizes this method due to lack of historical exercise data and the plain-vanilla nature of the Company's stock-based awards.

Expected Volatility

Since the Company was privately held through September 2019, it alone does not have the relevant company-specific historical data to support its expected volatility. As such, the Company has used an average of expected volatilities based on the volatilities of a representative group of publicly traded biopharmaceutical companies over a period equal to the expected term of the stock option grants. Subsequent to the Company's initial public offering, it began to consider the Company's own historic volatility. However, due to its limited history as a public company, the Company still uses peer company data to assist in this analysis. For purposes of identifying comparable companies, the Company selected companies with comparable characteristics to it, including enterprise value, risk profiles, position within the industry, and with historical share price information sufficient to meet the expected life of the stock-based awards. The historical volatility data was computed using the daily closing prices for the selected companies' shares during the equivalent period of the calculated expected term of the stock-based awards. The Company intends to consistently apply this process using the same or similar comparable entities until a sufficient amount of historical information regarding the volatility of the Company's own share price becomes available.

Risk-Free Interest Rate

The risk-free interest rate is based on the Treasury Constant Maturities as provided by the Federal Reserve in effect at the time of grant for periods corresponding with the expected term of option.

Expected Dividend

The Company has never paid dividends on its common stock and has no plans to pay dividends on its common stock. Therefore, the Company used an expected dividend yield of zero.

The fair value of employee stock options granted under the 2018 Plan and 2010 Plan and the shares available for purchase under the ESPP were determined using the Black-Scholes option-pricing model. The following summarizes the weighted-average assumptions used in calculating the fair value of the awards:

	Year Ended December 31,			Year Ended December 31,		
	2022	2021	2020	2023	2022	2021
2018 Plan						
Expected term (in years)	6.0	6.0	6.0	6.0	6.0	6.0
Expected volatility	87.1%	87.5%	84.3%	92.3%	87.1%	87.5%
Risk-free interest rate	2.3%	0.9%	1.0%	3.5%	2.3%	0.9%
Expected dividend yield	—	—	—	—	—	—

ESPP						
Expected term (in years)	0.5	0.5	0.5	0.5	0.5	0.5
Expected volatility	54.4%	60.0%	85.5%	46.7%	54.4%	60.0%
Risk-free interest rate	3.5%	0.1%	0.1%	5.4%	3.5%	0.1%
Expected dividend yield	—	—	—	—	—	—

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Restricted Stock Units (RSUs)

The following table summarizes restricted stock unit activity:

	Shares	Weighted-Average Grant Date Fair Value	Shares	Weighted-Average Grant Date Fair Value
Unvested restricted stock units as of December 31, 2021	358,535	$ 59.99		
Unvested restricted stock units as of December 31, 2022			401,180	$ 33.85
Granted	383,969	$ 16.14	761,517	$ 12.36
Vested	(279,683)	$ 40.49	(358,184)	$ 32.32
Forfeited	(61,641)	$ 45.48	(145,721)	$ 16.07
Unvested restricted stock units as of December 31, 2022	401,180	$ 33.85		
Unvested restricted stock units as of December 31, 2023			658,792	$ 13.77

As of December 31, 2022 December 31, 2023, the Company had a total of $11.7 7.1 million of unrecognized stock-based compensation expense for restricted stock unit awards, which is expected to be recognized over a weighted-average period of 2.3 3.0 years.

Note 11. Defined Contribution Plan

The Company sponsors a 401(k) retirement 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. As of December 31, 2022 During the year ended December 31, 2023, the Company did not make provided $1.8 million in matching contributions under its to the 401(k) plan. There were no matching contributions in the years ended December 31, 2022 and 2021.

Note 12. Income Taxes Restructuring Charges

Income Taxes On December 5, 2023, the Company committed to a strategic refocusing (Strategic Refocusing) and suspended clinical development activities for certain product candidates in several indications and reduced its workforce by approximately 22%, with headcount reductions substantially complete by December 31, 2023. The Company is undertaking the effort to focus its resources on the development of IgM Death Receptor 5 agonist antibodies for the treatment of colorectal cancer and IgM T cell engager antibodies for the treatment of autoimmune diseases, while further extending its cash runway. The Company will also continue to focus on the development of oncology and immunology product candidates under its collaboration with Sanofi.

In connection with the Strategic Refocusing, the Company recognized restructuring charges of $1.8 million during the year ended December 31, 2023. These restructuring charges were primarily related to severance and one-time termination payments of $3.7 million, partially offset by a $1.9 million reversal of previously recognized non-cash incentive and stock-based compensation expense. As of December 31, 2023, accrued severance of $2.4 million remained unpaid and is expected to be paid within one year. The Company had immaterial income tax recorded these restructuring charges to the respective research and development and general and administrative operating expense for the years ended December 31, 2022, 2021 categories on its consolidated statements of operations and 2020. comprehensive loss.

The following is a reconciliation of table summarizes the statutory federal income tax rate to changes in the Company’s effective tax rate:Company's accrued restructuring balance (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Federal tax at statutory rate	21.0%	21.0%	21.0%
State tax, net of federal benefit	5.3	7.3	9.4
Research and development credits	4.4	2.7	4.8
Stock-based compensation	(1.1)	2.6	1.7
Change in valuation allowance	(29.6)	(33.6)	(36.9)
Effective income tax rate	—%	—%	—%

	Beginning Balance December 31, 2022	Charges	Payments	Ending Balance December 31, 2023
Severance liability	$ —	$ 3,732	$ (1,335)	$ 2,397

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A summary of the charges related to the restructuring activities as of December 31, 2023 is as follows (in thousands):

	Severance and Related Compensation	Incentive and Stock-Based Compensation	Total Restructuring Costs
Research and development	$ 3,260	$ (1,531)	$ 1,729
General and administrative	472	(375)	97
Total	$ 3,732	$ (1,906)	$ 1,826

Note 13. Income Taxes

Income Taxes

The Company's income tax provision was $0.7 million for the year ended December 31, 2023, representing an effective tax rate of (0.3)%. There was no tax provision for the years ended December 31, 2022 and 2021. The increase in the income tax provision for the year ended December 31, 2023, as compared to the same period in 2022 was primarily due to recognizing deferred income in 2023 from the $150.0 million Sanofi upfront payment received in 2022 (See Note 9 – Sanofi Agreement).

The following is a reconciliation of the statutory federal income tax rate to the Company's effective tax rate:

	Year Ended December 31,		
	2023	2022	2021
Federal tax at statutory rate	21.0%	21.0%	21.0%
State tax, net of federal benefit	5.8	5.3	7.3
Research and development credits	4.9	4.4	2.7
Stock-based compensation	(1.5)	(1.1)	2.6
Other	(0.2)	—	—
Change in valuation allowance	(30.3)	(29.6)	(33.6)
Effective income tax rate	(0.3)%	—%	—%

Deferred tax assets and liabilities consist of the following (in thousands):

	December 31,		December 31,	
	2022	2021	2023	2022
Deferred tax assets:				
Net operating loss carryforwards	$ 80,507	$ 82,356	$ 73,437	$ 80,507

Accrued liabilities and reserves	6,691	4,564	5,993	6,691
Stock-based compensation	12,312	6,398	19,111	12,312
Intangible assets	8,132	9,623	7,102	8,132
Lease liabilities	12,682	8,581	11,692	12,682
Research and development credits	30,208	17,426	44,201	30,208
Capitalized research and development expenses	49,985	—	77,914	49,985
Deferred revenue			40,061	—
Total deferred tax assets	200,517	128,948	279,511	200,517
Deferred tax liabilities:				
Property and equipment	(532)	(236)	(2,290)	(532)
Right-of-use assets	(10,791)	(8,310)	(9,759)	(10,791)
Total deferred tax liabilities	(11,323)	(8,546)	(12,049)	(11,323)
Valuation allowance	(189,194)	(120,402)	(267,462)	(189,194)
Net deferred tax assets	$ —	$ —	$ —	$ —

The provisions of ASC Topic 740, *Accounting for Income Taxes* (Topic 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, 2022 December 31, 2023 and 2021, 2022, based on all available objective evidence, including the existence of cumulative losses, the Company

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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, 2022 December 31, 2023 and 2021, 2022, the valuation allowance increased by $68.8 78.3 million, and $58.4 68.8 million, respectively.

At December 31, 2022 December 31, 2023, the Company had net operating loss carryforwards available to reduce future taxable income, if any, for federal and state income tax purposes of approximately $261.1 207.6 million and $365.2 423.8 million, respectively. Of the The federal net operating loss carryforwards at December 31, 2022, $4.3 million is subject to expiration beginning in 2030 and the remaining net operating losses can be carried forward indefinitely, subject to an annual limitation of 80% of taxable income. The state net operating loss carryforwards are subject to expire in various years, with the first expiration beginning in 2036.

At December 31, 2022 December 31, 2023, the Company also had federal and California research and development tax credit carryforwards of $25.1 37.7 million and $14.0 20.1 million, respectively, available to offset future income tax, if any. The federal credit carryforwards begins to expire begin expiring in 2030 2038, and the California credits can be carried forward indefinitely.

Under Section 382 and 383 of the Internal Revenue Code of 1986, as amended, if a corporation undergoes an “ownership change,” the corporation's 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 has completed a Section 382 study and believes it has experienced two changes in ownership. As a result, some of the federal and state NOL carryforwards and tax credit carryforwards may expire before being applied to reduce future income tax liabilities.

IGM Biosciences, Inc.
Notes to Consolidated Financial Statements — Continued

Uncertain Tax Positions

The Company adopted the provisions of Topic 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 consolidated 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 (in thousands):

	December 31,			December 31,		
	2022	2021	2020	2023	2022	2021
Beginning balance	$ 4,075	$ 2,429	$ 1,820	$ 6,916	$ 4,075	$ 2,429
Increases for tax positions related to prior years	—	7	—	1	—	7
Decreases for tax positions related to prior years	(47)	(94)	(495)	—	(47)	(94)
Additions for tax positions related to current year	2,888	1,733	1,104	3,652	2,888	1,733
Ending balance	$ 6,916	$ 4,075	$ 2,429	$ 10,569	$ 6,916	$ 4,075

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. No interest or penalties were accrued as of December 31, 2022 December 31, 2023. The Company does not

expect the unrecognized tax benefits to change significantly over the next twelve months.

The Company files U.S. federal and various state income tax returns with varying statutes returns. For U.S. federal and state income tax purposes, the statute of limitations. Due limitations currently remains open for the years ending December 31, 2020 to its present and December 31, 2019 to present, respectively. In addition, all of the net operating loss losses and research and development credit carryforwards the Company's income tax returns that may be utilized in future years remain subject to examination by federal and state authorities for all tax years. examination. The Company is not currently under examination by income tax authorities in any jurisdiction.

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IGM Biosciences, Inc.
Notes to Consolidated Financial Statements — Continued

Note 13. 14. Net Loss Per Share Attributable to Common Stockholders

Basic and diluted net loss per share is computed by dividing net loss by the weighted-average number of common stock and pre-funded warrants outstanding for the period. Shares of common stock into which the pre-funded warrants may be exercised are considered outstanding for the purposes of computing net loss per share because the shares may be issued for little or no consideration, are fully vested, and are exercisable after the original issuance date. For periods in which the Company generated a net loss, the Company does not include the potential impact of dilutive securities in diluted net loss per share, as the impact of these items is anti-dilutive.

The following equity instruments were excluded from the calculation of diluted net loss per share because their effect would have been anti-dilutive for the periods presented:

	December 31,		December 31,	
	2022	2021	2023	2022
Stock options	5,802,317	3,764,001	6,766,340	5,802,317
Estimated shares issuable under the employee stock purchase plan	54,102	16,138	127,658	54,102
Unvested restricted stock units	401,180	358,535	658,792	401,180
Total	6,257,599	4,138,674	7,552,790	6,257,599

Note 14. Subsequent Events

The Company has transferred all uninsured deposits in excess of the Federal Deposit Insurance Corporation limit from Silicon Valley

Bank subsequent to year-end and has not incurred any losses on deposit balances. 116

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Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

Our management, under the supervision and with the participation of our Chief Executive Officer and our Chief Financial Officer, our principal executive officer and principal financial officer, respectively, conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act as of the end of the period covered by this Annual Report on Form 10-K. Based on this evaluation, our Chief Executive Officer and our Chief Financial Officer have concluded that as of such date our disclosure controls and procedures were effective at a reasonable assurance level (a) to ensure that information that we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms and (b) to ensure that information required to be disclosed by us in reports filed or submitted under the Exchange Act is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of consolidated financial statements for external purposes in accordance with generally accepted accounting principles.

Our management, under the supervision and with the participation of our Chief Executive Officer and Chief Financial Officer, conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework established in "Internal Control-Integrated Framework (2013)", issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, management concluded that our internal control over financial reporting was effective as of December 31, 2022 December 31, 2023.

This Annual Report on Form 10-K does not include an attestation report of our independent registered public accounting firm on our internal control over financial reporting due to an exemption established by the JOBS Act for "emerging growth companies."

Changes in Internal Control over Financial Reporting

There was no change in our internal controls over financial reporting during the quarter ended December 31, 2022 December 31, 2023, identified in connection with the evaluation required by Rules 13a-15(d) and 15d-15(d) of the Exchange Act that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Limitations on Effectiveness of Controls and Procedures

In designing and evaluating our disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply judgment in evaluating the benefits of possible controls and procedures relative to their costs.

Item 9B. Other Information.

None. During our last fiscal quarter, no director or officer, as defined in Rule 16a-1(f), adopted or terminated a "Rule 10b5-1 trading arrangement" or a "non-Rule 10b5-1 trading arrangement," each as defined in Regulation S-K Item 408.

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Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections.

Not applicable.

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PART III

Item 10. Directors, Executive Officers and Corporate Governance.

Information responsive to this item is incorporated herein by reference to our definitive proxy statement with respect to our 2023 2024 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

Item 11. Executive Compensation.

Information responsive to this item is incorporated herein by reference to our definitive proxy statement with respect to our 2023 2024 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

Information responsive to this item is incorporated herein by reference to our definitive proxy statement with respect to our 2023 2024 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

Information responsive to this item is incorporated herein by reference to our definitive proxy statement with respect to our 2023 2024 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

Item 14. Principal Accounting Fees and Services.

Information responsive to this item is incorporated herein by reference to our definitive proxy statement with respect to our 2023 2024 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

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PART IV

Item 15. Exhibits, Exhibit and Financial Statement Schedules.

(a) The following documents are filed as a part of this Annual Report on Form 10-K:

(1) Financial Statements

The consolidated financial statements filed as part of this Annual Report on Form 10-K are listed in the “Index to Financial Statements” under Part II, Item 8 of this Annual Report on Form 10-K.

(2) Financial Statement Schedules

Financial statement schedules have been omitted in this Annual Report on Form 10-K because they are not applicable, not required under the instructions, or the information requested is set forth in the consolidated financial statements or related notes thereto.

(3) Exhibits

The list of exhibits filed with this Annual Report on Form 10-K is set forth in the Exhibit Index preceding the signature page and is incorporated herein by reference or filed with this Annual Report on Form 10-K, in each case as indicated therein (numbered in accordance with Item 601 of Regulation S-K).

Item 16. Form 10-K Summary.

None.

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Exhibit Number	Exhibit Description	Incorporated by Reference			
		Form	File No.	Exhibit	Filing Date
3.1	Amended and Restated Certificate of Incorporation of the Registrant.	10-Q	001-39045	3.1	August 9, 2021
3.2	Amended and Restated Bylaws of the Registrant.	8-K	001-39045	3.1	March 21, 2023
4.1	Specimen common stock certificate of the Registrant.	S-1/A	333-233365	4.1	September 3, 2019
4.2	Amended and Restated Investor Rights Agreement, by and among the Registrant and certain of its stockholders, dated as of June 28, 2019.	S-1	333-233365	4.2	August 19, 2019

4.3	Description of Securities	10-K	001-39045	4.3	March 29, 2022
4.4	Form of Pre-Funded Warrant	8-K	001-39045	4.1	December 9, 2020
4.5	Form of Registration Rights Agreement, by and between the Registrant and certain securityholders.	8-K	001-39045	10.1	December 7, 2020
10.1+	Amended and Restated 2010 Stock Plan and forms of agreements thereunder.	S-1	333-233365	10.1	August 19, 2019
10.2+	2018 Omnibus Incentive Plan and forms of agreements thereunder.	S-1/A	333-233365	10.2	September 3, 2019
10.3+	Amended and Restated 2018 Omnibus Incentive Plan, amended July 30, 2020, and forms of agreements thereunder.	10-Q	001-39045	10.2	November 5, 2020
10.4+	Amended and Restated 2019 Employee Stock Purchase Plan, amended May 1, 2022, and forms of agreements thereunder.				
10.5+	Form of Indemnification Agreement, by and between the Registrant and each of its directors and executive officers.	S-1/A	333-233365	10.5	September 3, 2019
10.6+	Confirmatory Employment Letter, by and between Fred Schwarzer and the Registrant, effective as of August 19, 2019.	S-1	333-233365	10.6	August 19, 2019
10.7+	Confirmatory Employment Letter, by and between Bruce Keyt and the Registrant, effective as of August 19, 2019.	S-1	333-233365	10.9	August 19, 2019
10.8+	Confirmatory Employment Letter, by and between Misbah Tahir and the Registrant, effective as of August 19, 2019.	S-1	333-233365	10.10	August 19, 2019
10.9+	Employment Agreement, by and between Lisa Decker and the Registrant, dated as of February 25, 2021.	10-Q	001-39045	10.1	May 6, 2021
10.10+	Employment Agreement by and between George Gauthier and the Registrant, dated as of February 10, 2021.	10-Q	001-39045	10.2	May 6, 2021
10.11+	Employment Agreement by and between Chris Takimoto and the Registrant, dated as of July 29, 2021	10-Q	001-39045	10.2	August 9, 2021
10.12+	Change in Control and Severance Policy.	S-1	333-233365	10.11	August 19, 2019

10.13+	Outside Director Compensation Policy (as amended and restated on March 16, 2023).				
10.14+	Executive Incentive Compensation Plan.	S-1	333-233365	10.13	August 19, 2019
10.15	Lease by and between Real Property Investments, LLC and the Registrant, dated February 27, 2019.	S-1	333-233365	10.14	August 19, 2019
10.16	Nominating Agreement, by and among 667, L.P., Baker Brothers Life Sciences, L.P. and the Registrant, dated as of June 28, 2019.	S-1	333-233365	10.15	August 19, 2019

Exhibit Number	Exhibit Description	Incorporated by Reference			
		Form	File No.	Exhibit	Filing Date
3.1	Amended and Restated Certificate of Incorporation of the Registrant.	10-Q	001-39045	3.1	August 9, 2021
3.2	Amended and Restated Bylaws of the Registrant.	8-K	001-39045	3.1	March 21, 2023
4.1	Specimen common stock certificate of the Registrant.	S-1/A	333-233365	4.1	September 3, 2019
4.2	Amended and Restated Investor Rights Agreement, by and among the Registrant and certain of its stockholders, dated as of June 28, 2019.	S-1	333-233365	4.2	August 19, 2019
4.3	Description of Securities	10-K	001-39045	4.3	March 29, 2022
4.4	Form of Pre-Funded Warrant	8-K	001-39045	4.1	December 9, 2020
4.5	Form of Registration Rights Agreement, by and between the Registrant and certain securityholders.	8-K	001-39045	10.1	December 7, 2020
10.1+	Amended and Restated 2010 Stock Plan and forms of agreements thereunder.	S-1	333-233365	10.1	August 19, 2019
10.2+	2018 Omnibus Incentive Plan and forms of agreements thereunder.	S-1/A	333-233365	10.2	September 3, 2019

10.3+	Amended and Restated 2018 Omnibus Incentive Plan, amended June 23, 2023, and forms of agreements thereunder.	8-K	001-39045	10.1	June 27, 2023
10.4+	Amended and Restated 2019 Employee Stock Purchase Plan, amended October 30, 2023, and forms of agreements thereunder.				
10.5+	Form of Indemnification Agreement, by and between the Registrant and each of its directors and executive officers.	S-1/A	333-233365	10.5	September 3, 2019
10.6+	Confirmatory Employment Letter, by and between Fred Schwarzer and the Registrant, effective as of August 19, 2019.	S-1	333-233365	10.6	August 19, 2019
10.7+	Confirmatory Employment Letter, by and between Bruce Keyt and the Registrant, effective as of August 19, 2019.	S-1	333-233365	10.9	August 19, 2019
10.8+	Confirmatory Employment Letter, by and between Misbah Tahir and the Registrant, effective as of August 19, 2019.	S-1	333-233365	10.10	August 19, 2019
10.9+	Employment Agreement, by and between Lisa Decker and the Registrant, dated as of February 25, 2021.	10-Q	001-39045	10.1	May 6, 2021
10.10+	Employment Agreement by and between Chris Takimoto and the Registrant, dated as of July 29, 2021	10-Q	001-39045	10.2	August 9, 2021
10.11+	Amended and Restated Change in Control and Severance Policy.	10-Q	001-39045	10.3	August 3, 2023
10.12+	Outside Director Compensation Policy (as amended and restated on February 26, 2024).				
10.13+	Executive Incentive Compensation Plan.	S-1	333-233365	10.13	August 19, 2019
10.14	Lease by and between Real Property Investments, LLC and the Registrant, dated February 27, 2019.	S-1	333-233365	10.14	August 19, 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.	S-1	333-233365	10.15	August 19, 2019
10.16	Nominating Agreement, by and between Haldor Topsøe Holding A/S and the Registrant, dated as of June 28, 2019.	S-1	333-233365	10.16	August 19, 2019

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.	S-1	333-233365	10.17	August 19, 2019
10.18	First Amendment to Lease between IGM Biosciences, Inc. and Real Property Investments, LLC effective July 1, 2021.	10-Q	001-39045	10.1	August 9, 2021
10.19*	Collaboration and License Agreement by and between the Registrant and Genzyme Corporation, dated March 28, 2022	8-K	001-39045	10.1	March 29, 2022
10.20	Common Stock Purchase Agreement, dated as of June 22, 2023, between the Registrant and RedCo II Master Fund, L.P.	8-K	001-39045	10.1	June 23, 2023

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10.17	Nominating Agreement, by and between Haldor Topsøe Holding A/S and the Registrant, dated as of June 28, 2019.	S-1	333-233365	10.16	August 19, 2019
10.18	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.	S-1	333-233365	10.17	August 19, 2019
10.19	First Amendment to Lease between IGM Biosciences, Inc. and Real Property Investments, LLC effective July 1, 2021.	10-Q	001-39045	10.1	August 9, 2021
10.20*	Collaboration and License Agreement by and between the Registrant and Genzyme Corporation, dated March 28, 2022	8-K	001-39045	10.1	March 29, 2022
21.1	Subsidiaries of the Registrant				
23.1	Consent of Independent Registered Public Accounting Firm.				

24.1	Power of Attorney (reference is made to the signature page hereto).
31.1	Certification of Principal Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Principal Financial Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1†	Certification of Principal Executive Officer pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2†	Certification of Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	Inline XBRL Instance Document
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101)
21.1	Subsidiaries of the Registrant
23.1	Consent of Independent Registered Public Accounting Firm.
24.1	Power of Attorney (reference is made to the signature page hereto).

31.1	Certification of Principal Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Principal Financial Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1†	Certification of Principal Executive Officer pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2†	Certification of Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
97.1	Compensation Recovery Policy.
101.INS	Inline XBRL Instance Document
101.SCH	Inline XBRL Taxonomy Extension Schema with Embedded Linkbase Documents
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101)

+ Indicates management contract or compensatory plan.

* Portions of this exhibit have been redacted in compliance with Regulation S-K Item 601(b)(10).

† The certifications attached as Exhibit 32.1 and Exhibit 32.2 that accompany this Annual Report on Form 10-K are not deemed filed with the SEC and are not to be incorporated by reference into any filing of the Registrant under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Form 10-K, irrespective of any general incorporation language contained in such filing.

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the Registrant has duly caused this Report to be signed on its behalf by the undersigned, thereunto duly authorized.

IGM Biosciences, Inc.

Date: March 30, 2023 March 7, 2024

By: /s/ Fred Schwarzer

Fred Schwarzer

Chief Executive Officer and President

(Principal Executive Officer)

Date: March 30, 2023 March 7, 2024

By: /s/ Misbah Tahir

Misbah Tahir

Chief Financial Officer

(Principal Financial Officer)

Date: March 30, 2023 March 7, 2024

By: /s/ Steven Weber

Steven Weber

Senior Vice President, Corporate Controller

(Principal Accounting Officer)

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POWER OF ATTORNEY

KNOW ALL BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Fred Schwarzer, Misbah Tahir, and Steven Weber, each of them as his true and lawful attorneys-in-fact and agents, each with the full power of substitution, for him in his name, place or stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming that said attorneys-in-fact and agents, or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this Report has been signed below by the following persons on behalf of the Registrant in the capacities and on the dates indicated.

Name	Title	Date

/s/ Fred Schwarzer Fred Schwarzer	Chief Executive Officer, President and Director (Principal Executive Officer)	March 30, 2023 7, 2024
/s/ Misbah Tahir Misbah Tahir	Chief Financial Officer (Principal Financial Officer)	March 30, 2023 7, 2024
/s/ Steven Weber Steven Weber	Senior Vice President, Corporate Controller (Principal Accounting Officer)	March 30, 2023 7, 2024
/s/ Michael Loberg, Ph.D. Michael Loberg, Ph.D.	Chair of the Board of Directors	March 30, 2023
/s/ Felix Baker, Ph.D. Felix Baker, Ph.D.	Director	March 30, 2023 7, 2024
/s/ M. Kathleen Behrens, Ph.D. M. Kathleen Behrens, Ph.D.	Director	March 30, 2023 7, 2024
/s/ Julie Hambleton, M.D. Julie Hambleton, M.D.	Director	March 30, 2023 7, 2024
/s/ Michael Lee Michael Lee	Director	March 30, 2023 7, 2024
/s/ William Strohl, Ph.D. William Strohl, Ph.D.	Director	March 7, 2024
/s/ Elizabeth H.Z. Thompson, Ph.D. William Strohl, Elizabeth H.Z. Thompson, Ph.D.	Director	March 30, 2023 7, 2024
/s/ Christina Teng Topsøe Christina Teng Topsøe	Director	March 30, 2023 7, 2024
/s/ Jakob Haldor Topsøe Jakob Haldor Topsøe	Director	March 30, 2023 7, 2024

Exhibit 10.4

Exhibit 10.4

IGM BIOSCIENCES, INC.

2019 EMPLOYEE STOCK PURCHASE PLAN

(as amended and restated effective May 1, 2022 October 30, 2023)

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.

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(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 with the requirement to employed on such date interpreted as an eligibility criteria that will be applied only if it complies with the conditions in the definition of Eligible Employee.

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. 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. Unless otherwise determined by the Administrator, Contributions with respect to a pay day that occurs on an Exercise Date will be applied to the Purchase Period containing such Exercise Date.

(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 on a given Exercise Date will be retained in returned to 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. Participant. 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 585,433 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 2021 Fiscal Year, in an amount equal to the least of (i) 560,000 shares of Common Stock, (ii) 1% of the outstanding shares of common stock of the Company (including for this purpose both voting common stock and non-voting 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

1. The employee (“Employee”) enrolling in the IGM Biosciences, Inc. 2019 Employee Stock Purchase Plan (the “Plan”) through this online platform (the “Platform”), by his or her online enrollment, hereby elects to participate in 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, by his or her online enrollment, hereby authorizes payroll deductions from each paycheck in the percentage of his or her Compensation as designated on the Platform 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 Employee (or if permitted by and so designated on the Platform, Employee and Spouse).

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, by his or her online enrollment, 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 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.

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8. Employee, by his or her online enrollment, 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 UNDERSTANDS THAT THIS SUBSCRIPTION AGREEMENT WILL REMAIN IN EFFECT THROUGHOUT SUCCESSIVE OFFERING PERIODS UNLESS TERMINATED BY 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:

Exhibit 10.13 10.12

IGM BIOSCIENCES, INC.

OUTSIDE DIRECTOR COMPENSATION POLICY

(as Amended and Restated Effective March 16, 2023 February 26, 2024)

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 was originally adopted and approved August 7, 2019 and was 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**"). This Policy, as amended and restated, is effective as of March 16, 2023 February 26, 2024.

1. CASH COMPENSATION

Annual Cash Retainer

Each Outside Director will be paid an annual cash retainer of $40,000. 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:	$30,000 35,000
Audit Committee Chair:	
Audit Committee Chair:	$15,000 20,000
Audit Committee Member:	$7,500 10,000

Compensation Committee Chair:	$10,000 12,000
Compensation Committee Member:	$5,000 6,000
Corporate Governance and Nominating Committee Chair:	$10,000
Corporate Governance and Nominating Committee Member Member:	$5,000

Research and Clinical Development Committee Chair:	$10,000 12,000
Research and Clinical Development Committee Member:	$5,000 6,000

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.

Subsidiary Boards

Each Outside Director who serves on the board of directors of a majority owned subsidiary of the Company will be eligible to earn an additional $40,000 in annual fees for each subsidiary board on which he or she serves (paid quarterly in arrears on a prorated basis, provided that the fees for the first quarter during which the Outside Director serves on a subsidiary board will not be prorated).

Payment

Except as specified above with respect to subsidiary boards or in Section 2, 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 fiscal quarter, and such payment shall be made on the last business day of such fiscal quarter (or as soon thereafter as practical, but in no event later than 30 days following the end of such fiscal quarter). For purposes of clarification, and except as specified above with respect to subsidiary boards or in Section 2, an Outside Director who has served in a relevant capacity 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 such capacity. In any event, an Outside Director who serves in a relevant capacity through the last business day of a quarter shall be deemed to have served in such capacity through to the end of such quarter for purposes of determining the fees or equity payable to him or her under this Policy.

2. Elections to Receive Restricted Stock Units in Lieu of Cash Compensation

Following the Effective Date, subject to complying with the *Retainer Award Election Mechanics* below, each Outside Director may elect to convert 0%, 50% or 100% of his or her cash compensation with respect to services performed in a future quarter and otherwise scheduled to be paid under Section 1 of this Policy (the "**Retainer Cash Payments**") into a number of Restricted Stock Units ("**Retainer Award**") having a Grant Value equal to the aggregate amount of the elected percentage of the Retainer Cash Payments payable to such Outside Director under this Policy for the applicable quarter (as determined on the applicable date of grant of such Retainer Award), provided that the number of Shares covered by such Retainer Award shall be rounded to the nearest whole Share (such election, a "**Retainer Award Election**"). Quarterly Retainer Awards will be automatic and nondiscretionary and will be granted on the last business day of each quarter with respect to Retainer Cash Payments that would have been paid for such quarter. All Restricted Stock Units underlying such quarterly Retainer Awards will be fully vested upon grant and will be settled in Shares as soon as administratively practicable following each date of grant. grant, subject to any applicable Deferral Election (as defined below). For purposes of this Policy, "**Grant Value**" is calculated based on the volume weighted average price of one Share over the Company's fourth quarter of the year immediately preceding the year of the date of grant. For purposes of clarity, the amount of Retainer Cash Payments considered with respect to each quarterly Retainer Award will reflect any changes in committee assignments and any appointment or removal as the chair of committee based on the applicable fees earned during the prior quarter pursuant to Section 1 of this Policy.

Retainer Award Election Mechanics

Each Retainer Award Election must be submitted in the form and manner specified by the Board or Compensation Committee. An individual who fails to make a timely Retainer Award Election shall not receive a Retainer Award for the next calendar year, and instead shall receive the applicable Retainer Cash Payments for such calendar year. Once a Retainer Award Election is validly submitted and becomes effective, it will remain in effect with respect to all subsequent Retainer Cash Payments related to future calendar years unless the applicable Outside Director revokes such election as provided in (ii) below.

Retainer Award Elections must comply with the following timing requirements:

i. Annual Election. Each Outside Director may make a Retainer Award Election with respect to Annual Retainer Cash Payments payable to such Outside Director in the following calendar year (the "**Annual Election**"). The Annual Election must be submitted to the Company's Chief Financial Officer within the Company's fourth quarter open trading window (the "**Fourth Quarter Trading Window**") of the calendar year immediately preceding the

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calendar year to which the Retainer Cash Payments relate (the last day of such trading window, the "**Annual Election Deadline**"), and, except as provided in (ii) below, the Annual Election shall become irrevocable effective as of the Annual Election Deadline, provided that if such calendar year does not contain a Fourth Quarter Trading Window, Outside Directors will not be eligible to make an Annual Election in such calendar year.

ii. Revocation/Revision. An Outside Director may revoke or revise his or her existing Retainer Award Election during a Fourth Quarter Trading Window by such calendar year's Annual Election Deadline with respect to Retainer Cash Payments related to future calendar years. If a calendar year does not contain a Fourth Quarter Trading Window, Outside Directors will not be eligible to revoke or revise a Retainer Award Election in such calendar year.

Deferral of Retainer Awards

Unless and until otherwise determined by the Board or the Compensation Committee of the Board (the "**Compensation Committee**"), as applicable, each Outside Director may elect to defer the delivery of the Shares subject to any Restricted Stock Units granted under this Policy pursuant to a Retainer Award that would otherwise be delivered to such Outside Director on or following the date such Retainer Award vests pursuant to the terms of this Section 2 (the "**Deferral Election**"). Any Deferral Election will be irrevocable, and will be subject to such rules, conditions and procedures as shall be determined by the Board or the Compensation Committee, in its sole discretion, which rules, conditions and procedures shall at all times comply with the requirements of Section 409A (as defined below), unless otherwise specifically determined by the Board or the Compensation Committee. Deferral Elections shall be made pursuant to a form of deferral election as approved by the Board or the Compensation Committee.

3. 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 3 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 31,000 58,800 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

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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 15,500 29,400 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.

4. 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.

5. 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 its Fair Value. 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 5. For purposes of this Policy, "Fair Value" means the grant date fair value of an Award determined in accordance with U.S. generally accepted accounting principles.

6. 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.

7. Additional Provisions

All provisions of the Plan not inconsistent with this Policy will apply to Awards granted to Outside Directors thereunder.

8. 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.

9. 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.

10. 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 11 hereof.

11. 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 21.1

SUBSIDIARIES OF IGM BIOSCIENCES, INC.

Name of Subsidiary	Jurisdiction

IGM Infectious Diseases, Inc.	Delaware
IGM Autoimmunity and Inflammation, Inc.	Delaware

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement Nos. 333-275519, 333-268136, 333-258644, 333-258641, and 333-249863 on Form S-3 and Registration Statement Nos. 333-248111, 333-245877, 333-263927, 333-270991, 333-237411, 333-233826, 333-254877, and 333-263927 333-233826 on Form S-8 of our report dated March 30, 2023 March 7, 2024, relating to the financial statements of IGM Biosciences, Inc. appearing in this Annual Report on Form 10-K for the year ended December 31, 2022 December 31, 2023.

/s/ Deloitte & Touche

San Francisco, California
March 30, 2023 7, 2024

Exhibit 31.1

CERTIFICATION PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Fred Schwarzer, certify that:

1. I have reviewed this Annual Report on Form 10-K of IGM Biosciences, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessar

make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this repo

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Ru 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under o supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on s evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivale functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

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   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 30, 2023 March 7, 2024

By: /s/ Fred Schwarzer

Fred Schwarzer

Chief Executive Officer and President

(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Misbah Tahir, certify that:

1. I have reviewed this Annual Report on Form 10-K of IGM Biosciences, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessar make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this repc

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Ru 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under c supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on s evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivale functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 30, 2023 March 7, 2024

By: /s/ Misbah Tahir

Misbah Tahir

Chief Financial Officer

(Principal Financial Officer)

Exhibit 32.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of IGM Biosciences, Inc. (the "Company") on Form 10-K for the year ended December 31, 2022 December 31, 2023 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Fred Schwarzer, hereby certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; as amended and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations the Company.

Date: March 30, 2023 March 7, 2024

By: /s/ Fred Schwarzer

Fred Schwarzer

Chief Executive Officer and President

(Principal Executive Officer)

Exhibit 32.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER PURSUANT TO
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of IGM Biosciences, Inc. (the "Company") on Form 10-K for the year ended December 31, 2022 December 31, 2023 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Misbah Tahir, hereby certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations the Company.

Date: March 30, 2023 March 7, 2024

By: /s/ Misbah Tahir

Misbah Tahir

Chief Financial Officer

(Principal Financial Officer)

Exhibit 97.1

IGM BIOSCIENCES, INC.

COMPENSATION RECOVERY POLICY

As adopted on August 30, 2023

IGM Biosciences, Inc. (the "**Company**") is committed to strong corporate governance. As part of this commitment, the Compensation Committee of the Company's Board of Directors (the "**Board**") has adopted this clawback policy called the Compensation Recovery Policy (the "**Policy**"). The Policy is intended to further the Company's pay-for-performance philosophy and to comply with applicable law by providing for the reasonably prompt recovery of certain executive compensation in the event of an Accounting Restatement.

Capitalized terms used in the Policy are defined below, and the definitions have substantive impact on its application so reviewing them carefully is important to your understanding.

The Policy, which was approved as set forth above, is intended to comply with Section 10D of the Securities Exchange Act of 1934 (the "**Exchange Act**"), with Exchange Act Rule 10D-1 and with the listing standards of the national securities exchange (the "**Exchange**") on which the securities of the Company are listed. The Policy will be interpreted in a manner that is consistent with the requirements of Section 10D of the Exchange Act, Exchange Act Rule 10D-1 and with the listing standards of the Exchange, including any interpretive guidance provided by the Exchange.

In summary, the Policy provides rules related to the reasonably prompt recovery of certain incentive-based compensation received by Covered Executives. The application of the Policy to Covered Executives is not discretionary, except to the limited extent provided below, and applies without regard to whether a Covered Executive was at fault.

Persons Covered by the Policy

The Policy is binding and enforceable against all "**Covered Executives**," which means each individual who is or was ever designated as an "officer" by the Board in accordance with Exchange Act Rule 16a-1(f) (a "**Section 16 Officer**"). Each Covered Executive will be required to sign and return to the Company an acknowledgement that such Covered Executive will be bound by the terms and comply with the Policy. The failure to obtain such acknowledgement will have no impact on the applicability or enforceability of the Policy.

Administration of the Policy

The Compensation Committee (the "**Committee**") of the Board has full delegated authority to administer the Policy. The Committee is authorized to interpret and construe the Policy and to make all determinations necessary, appropriate, or advisable for the administration of the Policy. In addition, if determined in the discretion of the Board, the Policy may be administered by the independent members of the Board or another committee of the Board made up of independent members of the Board, in which case all references to the Committee will be deemed to refer to the independent members of the Board or the other Board committee. All determinations of the Committee will be final and binding and will be given the maximum deference permitted by law.

Accounting Restatements Requiring Application of the Policy

If the Company is required to prepare an accounting restatement due to the material noncompliance of the Company with any financial reporting requirement under the securities laws, including any required accounting restatement to correct an error in previously issued financial statements that is material to the previously issued financial statements, or that would result in a material misstatement if the error were corrected in the current period or left uncorrected in the current period (an "**Accounting Restatement**"), then the Committee must determine what compensation, if any, must be recovered.

Compensation Covered by the Policy

The Policy applies to certain **Incentive-Based Compensation** (certain terms used in this Section are defined below) that is **Received** on or after October 2, 2023 (the "**Effective Date**"), during the **Covered Period** while the Company has a class of securities listed on a national securities exchange. Such Incentive-Based Compensation is considered "**Clawback Eligible Incentive-Based Compensation**" if the Incentive-Based Compensation is Received by a person after such person became a Covered Executive and the person served as a Section 16 Officer at any time during the performance period for the Incentive-Based Compensation. The Incentive-Based Compensation that must be recovered is the amount of Clawback Eligible Incentive-Based Compensation that exceeds the amount of Clawback Eligible Incentive-Based Compensation that otherwise would have been Received had such Clawback Eligible Incentive-Based Compensation been determined based on the restated amounts (such compensation, as computed without regard to any taxes paid, the "**Excess Compensation**," is referred to in the listings standards as "erroneously awarded incentive-based compensation").

To determine the amount of Excess Compensation for Incentive-Based Compensation based on stock price or total shareholder return, where it is not subject to mathematical recalculation directly from the information in an Accounting Restatement, the amount must be based on a reasonable estimate of the effect of the Accounting Restatement on the stock price or total shareholder return upon which the Incentive-Based Compensation was Received and the Company must maintain documentation of the determination of that reasonable estimate and provide the documentation to the Exchange.

"**Incentive-Based Compensation**" means any compensation that is granted, earned, or vested based wholly or in part upon the attainment of a Financial Reporting Measure. For the avoidance of doubt, no compensation that is potentially subject to recovery under the Policy will be earned until the Company's right to recover under the Policy has lapsed.

The following items of compensation are not Incentive-Based Compensation under the Policy: salaries, bonuses paid solely at the discretion of the Compensation Committee or Board that are not paid from a bonus pool that is determined by satisfying a Financial Reporting Measure, bonuses paid solely upon satisfying one or more subjective standards and/or completion of a specified employment period, non-equity incentive plan awards earned solely upon satisfying one or more strategic measures or operational measures, and equity awards for which the grant is not contingent upon achieving any Financial Reporting Measure performance goal and vesting is contingent solely upon completion of a specified employment period (e.g., time-based vesting equity awards) and/or attaining one or more non-Financial Reporting Measures

"**Financial Reporting Measures**" are measures that are determined and presented in accordance with the accounting principles used in preparing the Company's financial statements, and any measures that are derived wholly or in part from such measures. Stock price and total shareholder return are also Financial Reporting Measures. A Financial Reporting Measure need not be presented within the financial statements or included in a filing with the Securities and Exchange Commission.

Incentive-Based Compensation is "**Received**" under the Policy in the Company's fiscal period during which the Financial Reporting Measure specified in the Incentive-Based Compensation award is attained, even if the payment, vesting, settlement or grant of the Incentive-Based Compensation occurs after the end of that period. For the avoidance of doubt, the Policy does not apply to Incentive-Based Compensation for which the Financial Reporting Measure is attained prior to the Effective Date.

"**Covered Period**" means the three completed fiscal years immediately preceding the Accounting Restatement Determination Date. In addition, Covered Period can include certain transition periods resulting from a change in the Company's fiscal year. The Company's obligation to recover Excess Compensation is not dependent on if or when the restated financial statements are filed.

"**Accounting Restatement Determination Date**" means the earliest to occur of: (a) the date the Board, a committee of the Board, or one or more of the officers of the Company authorized to take such action if Board

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action is not required, concludes, or reasonably should have concluded, that the Company is required to prepare an Accounting Restatement; and (b) the date a court, regulator, or other legally authorized body directs the Company to prepare an Accounting Restatement.

Repayment of Excess Compensation

The Company must recover Excess Compensation reasonably promptly and Covered Executives are required to repay Excess Compensation to the Company. Subject to applicable law, the Company may recover Excess Compensation by requiring the Covered Executive to repay such amount to the Company by direct payment to the Company or such other means or combination of means as the Committee determines to be appropriate (these determinations do not need to be identical as to each Covered Executive). These means may include:

(a) requiring reimbursement of cash Incentive-Based Compensation previously paid;

(b) seeking recovery of any gain realized on the vesting, exercise, settlement, sale, transfer, or other disposition equity-based awards;

(c) offsetting the amount to be recovered from any unpaid or future compensation to be paid by the Company affiliate of the Company to the Covered Executive;

(d) cancelling outstanding vested or unvested equity awards; and/or

(e) taking any other remedial and recovery action permitted by law, as determined by the Committee.

The repayment of Excess Compensation must be made by a Covered Executive notwithstanding any Covered Executive's belief (whether or not legitimate) that the Excess Compensation had been previously earned under applicable law and therefore is not subject to clawback.

In addition to its rights to recovery under the Policy, the Company or any affiliate of the Company may take any legal actions it determines appropriate to enforce a Covered Executive's obligations to the Company or to discipline a Covered Executive, including (without limitation) termination of employment, institution of civil proceedings, reporting of misconduct to appropriate governmental authorities, reduction of future compensation opportunities or change in role. The decision to take any actions described in the preceding sentence will not be subject to the approval of the Committee and can be made by the Board, any committee of the Board, or any duly authorized officer of the Company or of any applicable affiliate of the Company.

Limited Exceptions to the Policy

The Company must recover the Excess Compensation in accordance with the Policy except to the limited extent that the conditions set forth below are met, and the Committee determines that recovery of the Excess Compensation would be impracticable:

(a) The direct expense paid to a third party to assist in enforcing the Policy would exceed the amount to be reco Before reaching this conclusion, the Company must make a reasonable attempt to recover such Compensation, document such reasonable attempt(s) to recover, and provide that documentation to the Exc or

(b) Recovery would likely cause an otherwise tax-qualified retirement plan, under which benefits are broadly avail employees of the Company, to fail to meet the legal requirements as such.

Other Important Information in the Policy

The Policy is in addition to the requirements of Section 304 of the Sarbanes-Oxley Act of 2002 that are applicable to the Company's Chief Executive Officer and Chief Financial Officer, as well as any other applicable

laws, regulatory requirements, rules, or pursuant to the terms of any existing Company policy or agreement providing for the recovery of compensation.

Notwithstanding the terms of any of the Company's organizational documents (including, but not limited to, the Company's bylaws), any corporate policy or any contract (including, but not limited to, any indemnification agreement),

neither the Company nor any affiliate of the Company will indemnify or provide advancement for any Covered Executive against any loss of Excess Compensation. Neither the Company nor any affiliate of the Company will pay for or reimburse insurance premiums for an insurance policy that covers potential recovery obligations. In the event that pursuant to this Policy the Company is required to recover Excess Compensation from a Covered Executive who is no longer an employee, the Company will be entitled to seek recovery in order to comply with applicable law, regardless of the terms of any release of claims or separation agreement such individual may have signed.

The Committee or Board may review and modify the Policy from time to time.

If any provision of the Policy or the application of any such provision to any Covered Executive is adjudicated to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability will not affect any other provisions of the Policy or the application of such provision to another Covered Executive, and the invalid, illegal or unenforceable provisions will be deemed amended to the minimum extent necessary to render any such provision or application enforceable.

The Policy will terminate and no longer be enforceable when the Company ceases to be listed issuer within the meaning of Section 10D of the Exchange Act.

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