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

FORM 10-K

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

For the fiscal year ended December 31, 2019

Commission file number 001-36177

GlycoMimetics, Inc.

(Exact name of Registrant as specified in its charter)

Delaware	**06-1686563**
(State or other jurisdiction of incorporation or organization)	**(IRS Employer Identification No.)**
9708 Medical Center Drive Rockville, Maryland	**20850**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (240) 243-1201

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

Title of Each Class:	Trading Symbol:	Name of Each Exchange on which Registered
Common Stock, $0.001 par value	GLYC	The Nasdaq Stock 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 Section 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, a smaller reporting company or emerging growth company. See 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 is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of June 28, 2019, the last business day of the registrant's last completed second quarter, the aggregate market value of the Common Stock held by non-affiliates of the registrant was approximately $399.5 million based on the closing price of the registrant's Common Stock, as reported by the Nasdaq Global Market, on such date.

At February 26, 2020, 43,582,979 shares of GlycoMimetics, Inc.'s Common Stock, $0.001 par value per share, were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of GlycoMimetics, Inc.'s definitive proxy statement, to be filed pursuant to Regulation 14A under the Securities Exchange Act of 1934, for its 2020 Annual Meeting of Stockholders are incorporated by reference in Part III of this Form 10-K.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K, or this Annual Report, contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act, that involve substantial risks and uncertainties. The forward-looking statements are contained principally in Part I, Item 1. “Business,” Part I, Item 1A. “Risk Factors,” and Part II, Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” but are also contained elsewhere in this Annual Report. In some cases, you can identify forward-looking statements by the words “may,” “might,” “will,” “could,” “would,” “should,” “expect,” “intend,” “plan,” “objective,” “anticipate,” “believe,” “estimate,” “predict,” “project,” “potential,” “continue” and “ongoing,” or the negative of these terms, or other comparable terminology intended to identify statements about the future. These statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from the information expressed or implied by these forward-looking statements. Although we believe that we have a reasonable basis for each forward-looking statement contained in this Annual Report, we caution you that these statements are based on a combination of facts and factors currently known by us and our expectations of the future, about which we cannot be certain. Forward-looking statements include statements about:

- our plans to develop and commercialize our glycomimetic drug candidates;
- our and our collaborators’ ongoing and planned clinical trials for our drug candidates uproleselan and GMI-1359, including the timing of initiation of and enrollment in the trials, the timing of availability of data from the trials and the anticipated results of the trials;
- the timing of and our ability to obtain and maintain regulatory approvals for our drug candidates;
- the clinical utility of our drug candidates;
- our plans with respect to the development of our drug candidate, rivipansel;
- our commercialization, marketing and manufacturing capabilities and strategy;
- our intellectual property position;
- our ability to identify additional drug candidates with significant commercial potential that are consistent with our commercial objectives;
- our estimates regarding future revenues, expenses and needs for additional financing;
- our beliefs about our capital expenditure requirements and that our capital resources will be sufficient to meet our anticipated cash requirements into 2022; and
- the timing of completion of enrollment in our Phase 3 clinical trial of uproleselan in individuals with relapsed/refractory AML.

You should refer to Item 1A. “Risk Factors” section of this Annual Report for a discussion of important factors that may cause our actual results to differ materially from those expressed or implied by our forward-looking statements. As a result of these factors, we cannot assure you that the forward-looking statements in this Annual Report will prove to be accurate. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame, or at all. We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law. You should, therefore, not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this Annual Report.

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PART I

ITEM 1. BUSINESS

Company Overview

We are a clinical-stage biotechnology company focused on the discovery and development of novel glycomimetic drugs to address unmet medical needs resulting from diseases in which carbohydrate biology plays a key role. We are developing a pipeline of proprietary glycomimetics, which are small molecules that mimic the structure of carbohydrates involved in important biological processes, to inhibit disease-related functions of carbohydrates such as the roles they play in inflammation, cancer and infection. We believe this represents an innovative approach to drug discovery to treat a wide range of diseases. We are focusing our efforts on drug candidates for rare diseases that we believe will qualify for orphan drug designation.

Our proprietary glycomimetics platform is based on our expertise in carbohydrate chemistry and our understanding of the role carbohydrates play in key biological processes. Most human proteins are modified by the addition of complex carbohydrate structures to the surface of such proteins, which affects the functions of the proteins and their interactions with other molecules. Our initial research and development efforts have focused on drug candidates targeting selectins, which are proteins that serve as adhesion molecules and bind to carbohydrates that are involved in the inflammatory component and progression of a wide range of diseases, including hematologic disorders, cancer and cardiovascular disease. For example, we believe that members of the selectin family play a key role in tumor metastasis and resistance to chemotherapy. Inhibiting specific carbohydrates from binding to selectins has long been viewed as a potentially attractive approach for therapeutic intervention. The ability to successfully develop drug-like compounds that inhibit binding with selectins, known as selectin antagonists, has been limited by the complexities of carbohydrate chemistry. We believe our expertise in carbohydrate chemistry and our understanding of carbohydrate-protein binding interactions enables us to design selectin antagonists and other glycomimetics that may inhibit the disease-related functions of certain carbohydrates in order to develop novel drug candidates to address orphan diseases with high unmet medical need.

Overview of Our Drug Candidates

Uproleselan

We are developing uproleselan, a specific E-selectin inhibitor, to be used in combination with chemotherapy to treat patients with acute myeloid leukemia, or AML, a life-threatening hematologic cancer, and potentially other hematologic cancers. Uproleselan has been granted breakthrough therapy designation by the U.S. Food and Drug Administration, or FDA, for the treatment of adults with relapsed or refractory AML. In addition, uproleselan has received orphan drug designation from the FDA and the European Commission for the treatment of AML.

E-selectin plays a critical role in binding cancer cells within vascular niches in the bone marrow, which prevents the cells from entering circulation where they can be more readily killed by chemotherapy. In animal studies, uproleselan mobilized AML cancer cells out of the bone marrow, making them more sensitive to chemotherapy. In these studies, tumor burden was significantly reduced in the animals treated with a combination of chemotherapy and uproleselan as compared to animals treated with chemotherapy alone. In addition, the combination of uproleselan with chemotherapy resulted in improved survival rates for the treated animals compared to chemotherapy alone. In other animal studies, uproleselan appeared to also protect normal cells from some of the side effects of chemotherapy. Common side effects of chemotherapy include bone marrow toxicity resulting in neutropenia, which is an abnormally low number of neutrophils, the white blood cells that serve as the primary defense against infection, and mucositis, which is the inflammation and sloughing of the mucous membranes lining the digestive tract. Animals treated with uproleselan and chemotherapy had less severe neutropenia and mucositis and lower bone marrow toxicity as compared to animals treated with chemotherapy alone. We believe that treatment with uproleselan results in lower bone marrow toxicity due to its inhibition of E-selectin, which inhibition makes stem cells in the bone marrow divide less frequently, thereby protecting them from chemotherapy agents that target rapidly dividing cells.

We completed an initial Phase 1 trial in healthy volunteers for uproleselan and in May 2017 we completed enrollment in a Phase 1/2 clinical trial in patients with either relapsed/refractory or de novo/secondary AML. In December 2018, at the annual meeting of the American Society of Hematology, or ASH, we presented final clinical data from the Phase 1/2 trial that showed high remission rates, improved overall survival and improved event-free survival,

all compared to historical controls derived from third-party clinical trials evaluating treatment with standard chemotherapy. In November 2018, we dosed the first patient in a Phase 3 clinical trial to evaluate uproleselan in adults with relapsed/refractory AML. In 2018, we entered into an agreement with the National Cancer Institute, or NCI, to further evaluate uproleselan in a separate clinical trial for the treatment of AML in older adults who are eligible for intensive chemotherapy. The first patient in this NCI-sponsored trial was dosed in April 2019.

GMI-1687

As a potential life-cycle extension to uproleselan, our scientists have rationally designed an innovative antagonist of E-selectin, GMI-1687, that could be suitable for subcutaneous administration. When given by subcutaneous injection in animal models, GMI-1687 has been observed to have equivalent activity to uproleselan, but at an approximately 1,000-fold lower dose. We believe that GMI-1687 could be developed to broaden the clinical usefulness of an E-selectin antagonist to conditions where outpatient treatment is preferred or required. We are currently conducting studies with GMI-1687 to support our planned submission of an investigational new drug application, or IND, to the FDA.

GMI-1359

We are developing an additional clinical drug candidate, GMI-1359, that simultaneously targets both E-selectin and a chemokine receptor known as CXCR4. Since E-selectin and CXCR4 are implicated in the retention of cancer cells in the bone and bone marrow, we believe that targeting both E-selectin and CXCR4 with a single compound could improve efficacy in the treatment of solid tumors that have a propensity to metastasize to bone, such as breast and prostate cancer. We completed a Phase 1 randomized, double-blind, placebo-controlled, single-dose escalation trial of GMI-1359 in healthy volunteers. In this trial, volunteer participants received a single injection of either GMI-1359 or placebo, after which they were evaluated for safety, tolerability and pharmacokinetics, or PK. This trial was conducted at a single site in the United States. GMI-1359 was generally well tolerated in this trial, with no participants experiencing serious adverse events. We initiated a Phase 1b trial of GMI-1359 in hormone receptor positive, or HR+, breast cancer patients whose tumors have spread to bone in the fourth quarter of 2019, and the first patient was dosed in January 2020. The trial is being conducted at Duke University and will evaluate dose escalation as well as safety, PK and pharmacodynamics, or PD, markers of biologic activity in these patients. In January 2020, the FDA granted GMI-1359 orphan drug designation and rare pediatric disease designation for the treatment of osteosarcoma, a rare cancer affecting approximately 900 adolescents each year in the United States. These designations are expected to make GMI-1359 eligible for priority review by the FDA.

Galectin Antagonists

Galectin-3 is a carbohydrate-binding protein whose expression has been shown to play a central role in fibrosis and cancer. Galectin-3 has been linked to a number of biologic processes including inflammation, aberrant cell activation and proliferation (macrophages, neutrophils, and mast cells), fibrogenesis and ultimately, organ dysfunction. Experimental data have implicated galectin-3 in a variety of diseases across a number of organ systems, including liver, kidney, lung, eye and heart. In our preclinical studies, blockage of galectin-3 has been shown to prevent fibrosis following organ damage, which we believe makes it a promising target for further evaluation and development.

Current research also indicates that galectins have important roles in modulating the immune and inflammatory response to cancer that contributes to neoplastic transformation, tumor cell survival, angiogenesis and metastasis. Applying our understanding of carbohydrate biology and chemistry, we have rationally designed several high-potency, selective, small-molecule glycomimetic antagonists of galectin-3. These novel compounds have been observed to have anti-fibrotic activity in our animal models of disease.

Rivipansel

We previously developed rivipansel, a glycomimetic drug that acts as a pan-selectin antagonist that binds to all three members of the selectin family, E-, P- and L-selectin, for the treatment of vaso-occlusive crisis, or VOC, a debilitating and painful condition that occurs periodically throughout the life of a person with sickle cell disease, or SCD. We exclusively licensed rivipansel to Pfizer Inc., or Pfizer, in 2011 for clinical development and worldwide commercialization. Pfizer conducted a pivotal Phase 3 clinical trial to evaluate the efficacy and safety of rivipansel in patients aged six and older with SCD who were hospitalized for VOC and required treatment with intravenous opioids.

On August 2, 2019, Pfizer announced that the clinical trial did not meet its primary or key secondary efficacy endpoints. On February 5, 2020, Pfizer delivered notice to us of its termination of the license agreement, effective as of April 5, 2020. We will work with Pfizer to effectuate any necessary transition activities in connection with the termination of the license agreement, and will be determining what, if any, next steps to take with respect to the rivipansel program after reviewing the Phase 3 data more completely.

Following the termination of the license agreement with Pfizer, the worldwide development and commercialization rights to rivipansel will revert to us. We have retained such rights to all of our other drug candidates, except that with respect to uproleselan and GMI-1687, we have exclusively licensed development and commercialization rights to these drug candidates to Apollomics (Hong Kong) Limited, or Apollomics, for Mainland China, Hong Kong, Macau and Taiwan, or collectively, Greater China.

"GlycoMimetics," the GlycoMimetics logo and other trademarks or service marks of GlycoMimetics, Inc. appearing in this Annual Report are the property of GlycoMimetics, Inc. This Annual Report contains additional trade names, trademarks and service marks of others, which are the property of their respective owners.

Our Strategy

Our goal is to be the leader in the discovery, development and commercialization of novel glycomimetic drugs to address unmet medical needs resulting from diseases in which carbohydrate biology plays a key role. Leveraging the potentially broad applicability of our proprietary glycomimetics platform, our initial focus is to internally develop and advance orphan drug candidates targeted at hematologic cancers and other diseases, and to out-license any drug candidates we may develop that are targeted at larger market opportunities. The key elements of our strategy are to:

- ***Complete clinical development of and obtain regulatory approvals for uproleselan for the treatment of adults with relapsed/refractory AML.*** Based on the positive Phase 1/2 clinical trial results presented at ASH in 2018, we are currently conducting a randomized, double-blind, placebo-controlled Phase 3 clinical trial to evaluate uproleselan in adults with relapsed/refractory AML, with the design of the trial aligned with guidance we received from the FDA. In this single pivotal trial, we plan to enroll approximately 380 adult patients with relapsed or refractory AML at centers in the United States, Canada, Europe and Australia. Enrollment began in the fourth quarter of 2018, and we expect to complete enrollment in the second half of 2021. If the results from this Phase 3 clinical trial are positive, we plan to apply for regulatory approval from the FDA and the European Medicines Agency, or EMA.
- ***Explore the potential use of uproleselan in other AML patient populations through third-party collaborations.*** In May 2018, we signed a Cooperative Research and Development Agreement, or CRADA, with the NCI, part of the National Institutes of Health. Under the terms of the CRADA, we will collaborate with both the NCI and the Alliance for Clinical Trials in Oncology to conduct a randomized, controlled clinical trial evaluating the addition of uproleselan to a standard Cytarabine/Daunorubicin chemotherapy regimen (7&3) in older adults with previously untreated AML who are eligible for intensive chemotherapy. The primary endpoint will be overall survival, with a planned interim analysis based on event-free survival after the first 250 patients have been enrolled in the trial. Under the terms of the CRADA, the NCI may fund additional research, including clinical trials of pediatric patients with AML as well as preclinical experiments and clinical trials evaluating alternative chemotherapy regimens.
- ***Expand the potential use of E-selectin inhibition (uproleselan and GMI-1687) in other select territories through out-licensing arrangements.*** In January 2020, we entered into an exclusive collaboration and license agreement with Apollomics for the development and commercialization of uproleselan and GMI-1687 in Greater China. Apollomics will be responsible at its cost for clinical development and commercialization of uproleselan in Greater China, and will work with us to advance the preclinical and clinical development of GMI-1687. We expect to enter into separate agreements to provide clinical and commercial supplies of uproleselan and GMI-1687 to Apollomics, and we retain all rights for both compounds in the rest of the world.
- ***Advance the clinical development of GMI-1359 for the treatment of cancers that affect the bone and bone marrow.*** Following completion of a Phase 1 single-dose escalation trial in healthy volunteers in 2018, in the fourth quarter of 2019 we initiated a Phase 1b trial of GMI-1359 in HR+ breast cancer patients

whose tumors have spread to bone, and the first patient was dosed in January 2020. The trial is being conducted at Duke University and will evaluate dose escalation as well as safety, PK and PD markers of biologic activity in these patients.

- ***Identify and develop additional novel selectin antagonists to address unmet medical needs with significant market potential***. We believe our glycomimetics platform will enable us to develop a broad pipeline of potential drug candidates that may be orphan products or may address larger market opportunities. We have identified a highly potent E-selectin / galectin-3 antagonist which we believe could be of value in potential major market opportunities, such as the treatment of certain fibrotic conditions and inflammatory diseases.
- ***Apply our insights and our glycomimetics platform to other carbohydrate targets beyond selectins***. We have identified additional opportunities where carbohydrates play critical roles in disease processes and where we believe we can apply our platform to create targeted glycomimetic drugs. We have designed inhibitors that specifically block the binding of galectin-3 to carbohydrate structures. We plan to optimize these compounds and conduct additional preclinical studies to further characterize the effects of galectin-3 inhibitors on inflammation and fibrosis, as well as immune processes. We are also designing other galectin inhibitors with dual functional inhibition of E-selectin that we believe could be used to treat various diseases.

Our Platform

Our proprietary glycomimetics platform is based on our expertise in carbohydrate chemistry and our understanding of the role carbohydrates play in key biological processes. Carbohydrate structures on cell surfaces are responsible for complex carbohydrate-protein binding interactions. Inhibiting these binding interactions affects the functions of these proteins and their interactions with other molecules. We believe our expertise enables us to design specific glycomimetic molecules that can mimic carbohydrate structures and thereby inhibit their disease-related functions.

Our initial focus is on selectin antagonists, which we believe have the potential to address unmet medical needs in a number of orphan and large market opportunities. Selectins have been shown to play a key role in a wide range of diseases, including hematologic disorders, inflammatory diseases, infection, cancer and cardiovascular disease.

Our initial drug design efforts are focused on a naturally occurring, three-dimensional complex carbohydrate core structure known as the Lewis structure. This core structure is naturally modified in a variety of ways to form many different functional carbohydrates. These variations determine the biological functions of the carbohydrates, including functions related to conditions defined above. Accordingly, we believe that this structure provides the foundation for the design of glycomimetic drug candidates that could be used to address a variety of diseases.

Once we identify a carbohydrate structure involved in a disease pathway, we design molecules that mimic that carbohydrate structure and inhibit its disease-related functions by binding to the carbohydrate's target receptor, thereby blocking the binding by the native carbohydrate itself. For example, one of the naturally modified Lewis structures binds to selectins, which play a key role in adhesion of AML blasts to the vasculature of the bone marrow. Uproleselan mimics that carbohydrate structure and accordingly binds to selectins, which we believe thereby inhibits the adhesion of AML blasts and renders them more susceptible to killing with cytotoxic chemotherapies. In addition, our glycomimetic molecules are designed to have greater affinity to the carbohydrate's target receptor than does the native carbohydrate. This means that the glycomimetic molecules possess stronger intermolecular forces between themselves and the target receptors, and thus "outcompete" the native carbohydrates in binding to the relevant target receptors, thereby inhibiting their disease-related functions. Using our glycomimetics platform, we have designed and synthesized a proprietary library of these structures targeting different biological processes.

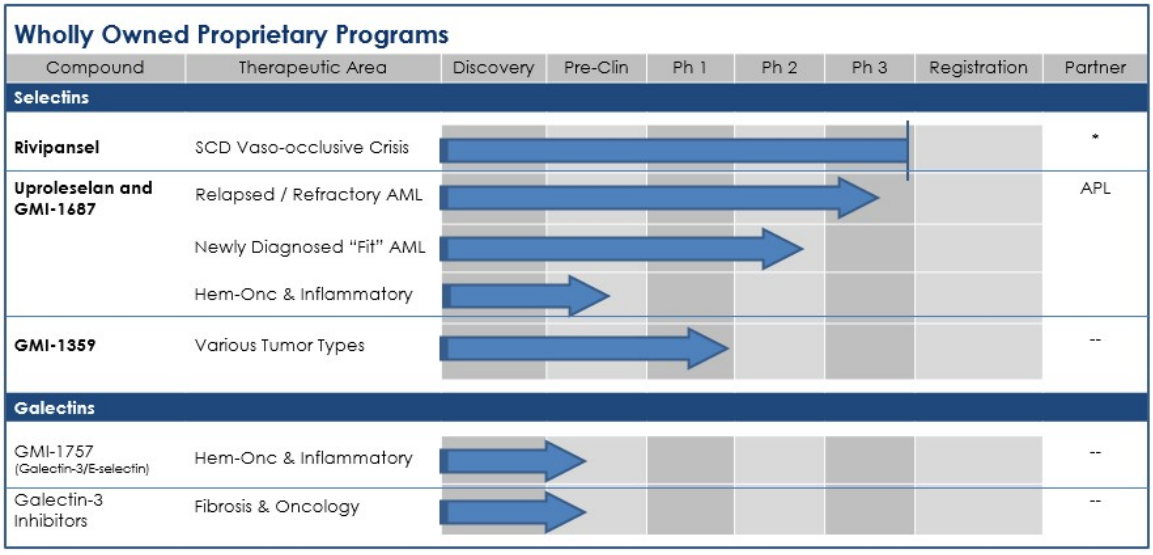
Our glycomimetics platform includes intellectual property, know-how, expertise, proprietary biological information and biochemical assays, all of which support the rational design of potent glycomimetic compounds. These include:

- Know-how to successfully mimic the Lewis structure, which is common to a number of functional carbohydrates.

- Use of empirical methods to determine critical interactions between variations of a particular functional carbohydrate and its target molecule.
- Application of the empirically determined bioactive structure of the functional carbohydrate for docking into the binding area of the crystal structure of the target molecule.
- Expertise in stabilizing the bioactive core of glycomimetic compounds and increasing the number of interaction contact points to improve affinity.
- Experience and technology in synthetic organic chemistry required for the specialized synthesis of carbohydrates and their modifications.
- Proprietary assays to determine the binding characteristics, inhibitory activity and biological activity of glycomimetic compounds.

Our Pipeline

We have discovered our drug candidates internally through a rational drug design approach that couples our expertise in carbohydrate chemistry with our knowledge of carbohydrate biology. We are actively developing glycomimetic drug candidates based on this expertise. Our drug candidates and their target indications and development status are summarized in the chart below.



APL = Apollomics (Greater China)

* Previously exclusively licensed to Pfizer Inc.; worldwide development and commercialization rights to revert to GMI in April 2020.

Uproleselan —Targeting the Bone Marrow Microenvironment to Treat Hematologic Cancers

We are developing uproleselan, a specific E-selectin antagonist, to be used adjunctively with standard chemotherapy to treat AML and other hematologic cancers. We believe that uproleselan may be used as first-line treatment for elderly patients with AML or for patients with relapsed or refractory AML. Uproleselan targets interactions between cancer cells and the bone marrow microenvironment. In preclinical studies, combining uproleselan with chemotherapy made cancer cells more sensitive to chemotherapy. In other preclinical studies, uproleselan also reduced some of the toxic effects of chemotherapy, including neutropenia and mucositis, on normal cells.

Uproleselan received orphan drug designation from the FDA in May 2015 for the treatment of patients with AML. In June 2016, uproleselan received fast track designation from the FDA for the treatment of adult patients with relapsed or refractory AML and elderly patients aged 60 years or older with AML. In May 2017, uproleselan received

breakthrough therapy designation from the FDA for the treatment of adult patients with relapsed or refractory AML. In May 2017, the European Commission, based on a favorable recommendation from the EMA Committee for Orphan Medicinal Products, granted orphan designation for uproleselan for the treatment of patients with AML.

Acute Myeloid Leukemia

AML, a hematologic cancer that is characterized by the rapid growth of abnormal white blood cells that accumulate in the bone marrow and interfere with the production of normal blood cells, is a relatively rare disease, but one that accounts for the largest number of annual deaths from leukemia in the United States. According to the Surveillance, Epidemiology, and End Results Program managed by the NCI, there were an estimated 21,450 new cases of AML diagnosed in 2019 in the United States. AML caused an estimated 10,920 deaths in 2019 in the United States.

AML is more commonly present in elderly patients, with a median age at diagnosis of 68 years old according to the NCI. In a review published in the *Journal of Clinical Oncology*, the median overall survival of patients 60 years old or older was nine months. The overall five-year relative survival rate for all AML patients from 2009 to 2015 was 28.3%. Relative survival is a statistical measure of net survival that is calculated by comparing observed survival with expected survival from a comparable set of people who do not have AML, in order to measure the excess mortality that is associated with the AML diagnosis.

A number of published studies indicate that only some AML patients who receive chemotherapy achieve a complete response, which is defined as the disappearance of all signs of AML, and that most patients with a complete response will eventually relapse. Patients who do not enter remission are referred to as refractory, meaning that they are resistant to the chemotherapy treatment.

We believe there is a need for new treatment options for elderly patients with AML, as well as those AML patients who relapse or develop refractory disease. Most AML patients with relapsed or refractory disease have no established treatment options and, accordingly, may be referred for participation in clinical studies of potential new therapies. For patients who elect not to participate or are unable to participate, treatment options typically include chemotherapy regimens, hypomethylating agents and supportive care. Further, many elderly patients with AML are too frail to undergo chemotherapy as a result of other medical conditions, and may only be able to tolerate pain comfort or control measures. Without treatment, however, AML is uniformly fatal.

Role of E-selectin in AML

E-selectin has been shown to play important roles in the progression of AML. This has been observed in several studies, which have shown that levels of E-selectin correlate with tumor infiltration and relapse in AML. We therefore believe that our E-selectin antagonist, uproleselan, has the potential to improve the current treatment of patients with AML.

Uproleselan Preclinical Development

Leukemia cells can bind to E-selectin in the bone marrow where they are relatively protected from the effects of chemotherapy. This phenomenon is now known as environment-mediated drug resistance, or EMDR. We believe that E-selectin inhibition disrupts the cell adhesion involved in EMDR and mobilizes blasts out of the bone marrow and into the bloodstream, making them more susceptible to chemotherapy. We believe that this mechanism of action may allow uproleselan to improve chemotherapy response rates, duration of remission and, ultimately, survival in patients with hematologic cancers such as AML.

In one in vivo study in a mouse model of AML, combining uproleselan with chemotherapy, mobilized AML blast cells and significantly reduced tumor burden as compared to treatment with chemotherapy alone. In an in vitro study, AML cells once bound to E-selectin were more resistant to chemotherapy. In a related study, when treated with uproleselan, the resistance of such cells to chemotherapy was reduced. Tumor cells of patients who have relapsed AML, when tested in the laboratory, bound significantly higher levels of E-selectin than tumor cells of patients at initial diagnosis. Additional preclinical studies in mouse models of AML, in which E-selectin was observed to be upregulated, suggest that AML cells binding to E-selectin have increased chemo-resistance. This is due to the induction of tumor cell survival signaling pathways as a consequence of E-selectin binding. This effect within the bone marrow microenvironment is unique to E-selectin as compared to other vascular adhesion molecules and can be blocked by

uproleselan. The results of this preclinical study were presented in an oral presentation at the 59th annual ASH meeting in December 2017, and we believe the findings provide important information about how treatment with uproleselan may improve sensitivity to chemotherapy.

As uproleselan disrupts the interactions between cancer cells and bone marrow microenvironment, its mechanism of action is not limited to a single tumor type. In addition to our studies in AML, we have also tested the drug candidate in other cancer models. In in vivo studies involving animal models of multiple myeloma, chronic myelogenous leukemia and acute lymphoblastic leukemia, uproleselan, as an adjunct to standard-of-care chemotherapy, decreased tumor burden and improved survival over chemotherapy alone.

In addition to its anti-tumor effects, uproleselan, in animal models, has shown protection against some of the toxicities of chemotherapy. In particular, animals treated with uproleselan in combination with chemotherapy had less severe neutropenia and mucositis and lower bone marrow toxicity as compared to animals treated with chemotherapy alone. We believe that treatment with uproleselan results in lower bone marrow toxicity due to its inhibition of E-selectin, thereby making hematopoietic stem cells divide less frequently and protecting them from chemotherapy agents that target rapidly dividing cells. Hematopoietic stem cells are blood cells that give rise to all other types of blood cells and are heavily concentrated in the bone marrow. Similar effects have been demonstrated with rivipansel and were published in the journal Nature Medicine in December 2012. Based on these reductions in some of the toxicities of chemotherapy, we are evaluating these effects as secondary efficacy endpoints in our clinical trials.

Expanding the Utility of E-selectin antagonists

During the 2018 annual ASH meeting, we reported on the preclinical development of a highly potent antagonist of E-selectin, GMI-1687, which demonstrated significant activity in animal models previously reported for uproleselan but at an approximately 1,000-fold lower dose. This level of activity was obtained following injections under the skin and could alleviate the need for intravenous infusions. Based on these compound characteristics, we believe GMI-1687 could potentially be used in outpatient settings where an E-selectin antagonist has therapeutic relevance. We are currently conducting IND-enabling studies of GMI-1687.

Uproleselan Clinical Trials

In 2014, we completed a Phase 1 trial of uproleselan in healthy volunteers. The single-site Phase 1 trial was a randomized, double-blind, placebo-controlled, single ascending intravenous dose trial. In the trial, we evaluated the safety, tolerability and PK of uproleselan. Twenty-eight healthy adult subjects were enrolled in cohorts to receive study drug at three dose levels. In the trial, we observed that the subjects tolerated uproleselan well, and that the PK for uproleselan were consistent with what was predicted based on preclinical data.

In 2015, we commenced a multinational, Phase 1/2, open-label trial of uproleselan as an adjunct to standard chemotherapy in patients with AML. This trial in males and females with AML was conducted at a number of academic institutions in the United States, Ireland and Australia. The trial consisted of two parts. In the Phase 1 portion, escalation testing was performed to determine a recommended uproleselan dose in combination with standard chemotherapy to be used in the Phase 2 portion. In the Phase 2 portion of the trial, dose expansion was performed at the recommended dose of 10 mg/kg uproleselan in combination with standard chemotherapy. The primary objective of the trial was to evaluate the safety of uproleselan in combination with chemotherapy. Secondary objectives were to characterize PK and PD and to observe anti-leukemic activity. A total of 19 patients with relapsed or refractory AML were enrolled and dosed with a single cycle of treatment with uproleselan and chemotherapy in the Phase 1 portion of the trial. In the Phase 2 portion, one cohort of 25 patients over 60 years of age with newly diagnosed AML and a second cohort of 47 patients with relapsed or refractory AML were enrolled. Unlike in the Phase 1 portion, some of the patients in the Phase 2 portion were eligible to receive multiple cycles of uproleselan with chemotherapy.

In December 2018, we presented final efficacy and correlative results from the Phase 1/2 trial at the annual ASH meeting. Key highlights from the Phase 1/2 clinical data include the following:

- Relapsed/Refractory (R/R) AML Cohort: At the recommended Phase 2 dose (RP2D), CR (complete remission)/CRi (complete remission with incomplete blood count recovery) rate was 41%, median overall survival, or OS, was 8.8 months (95% CI 5.7-11.4) and 69% of evaluable patients (11/16) achieved measurable residual disease negativity as assessed by either flow and/or DNA-based methods such as

reverse transcription polymerase chain reaction (RT-PCR). OS will be the primary outcome measure in our ongoing Phase 3 trial in relapsed/refractory AML patients. In historical controls, OS of approximately 5.2-5.4 months has been observed in this population with this treatment approach. If in the Phase 3 trial we are able to achieve OS results in the Phase 3 trial comparable to those observed in the Phase 1/2 clinical trial, it could be a significant improvement over the results observed in these historical controls.

- Newly Diagnosed AML Cohort: At the RP2D, CR/CRi rate was 72%, median overall survival was 12.6 months (95% CI 9.9-not reached), EFS was 9.2 months (95% CI 3.0-12.6) and 56% of evaluable patients (5 out of 9) achieved measurable residual disease negativity as assessed by either flow and/or DNA-based methods such as RT-PCR. Of note, the EFS data (primary outcome measure for the interim analysis in the NCI-sponsored clinical trial in newly diagnosed AML patients) compares favorably to a range of 2.0-6.5 months for EFS in historical controls, which generally included lower risk patient populations than those treated in our Phase 1/2 trial.

- An analysis of E-selectin ligand expression on leukemic cells demonstrated that detectable levels were present on leukemic blasts for every patient tested, providing clinical evidence of biological relevance of the E-selectin ligand in this disease setting. In bone marrow samples, leukemic stem cell expression of E-selectin ligand correlated with leukemic blast E-selectin ligand expression ($p<0.0001$), consistent with the hypothesis that E-selectin-mediated interactions are a mechanism of chemoresistance. Additionally, investigators assessed the association between baseline E-selectin ligand expression on leukemic blasts and clinical outcomes using a log-rank test. In the R/R cohort of patients evaluated, this analysis demonstrated that ≥10% E-selectin ligand expression at baseline was correlated with prolonged survival ($p<0.01$) for patients treated with uproleselan. We believe this observation is important because in patients not treated with uproleselan the scientific literature has instead observed that high levels of E-selectin ligand correlated with a worse clinical prognosis. The addition of uproleselan in our study appears to have reversed this trend toward worsened prognosis, and we believe this result may be achieved through the restoration of chemosensitivity.

Based on these positive results, we are conducting a randomized, double-blind, placebo-controlled Phase 3 clinical trial to evaluate uproleselan in individuals with relapsed/refractory AML, with a trial design aligned with guidance received from the FDA. Based on consultations with the FDA, this single pivotal trial is planned to enroll approximately 380 adult patients with relapsed or refractory AML at centers in the United States, Canada, Europe and Australia. To best capture the full benefits of uproleselan, the primary efficacy endpoint will be overall survival; importantly, the FDA has advised us that data on overall survival will not need to be censored for transplant in the primary efficacy analysis, meaning that patients who proceed to transplant will continue to be included as part of the survival analysis.

All patients will be treated with standard chemotherapy of either MEC (mitoxantrone, etoposide and cytarabine) or FAI (fludarabine, cytarabine and idarubicin), with approximately half of the patients randomized to receive uproleselan in addition to chemotherapy. Patients receiving uproleselan will be dosed for one day prior to initiation of chemotherapy, twice a day through the chemotherapy regimen, and then for two days after the end of chemotherapy, which was the same regimen as in the Phase 2 portion of the Phase 1/2 trial. The dose regimen will be fixed, rather than weight-based, which we believe will simplify administration and we will offer up to three cycles of consolidation therapy in both arms of the trial for patients who achieve remission. We believe that multiple cycles of treatment in patients who respond may drive an even deeper response in patients treated with uproleselan. If this is the case, it could lengthen the duration of remission with potential for additional benefit on survival. Key secondary endpoints of the Phase 3 trial will include the incidence of severe mucositis and remission rate, which will be assessed in a hierarchical fashion to provide supportive data. Enrollment in this pivotal trial began in the fourth quarter of 2018, and we expect to complete enrollment of the trial in the second half of 2021.

In May 2018, we signed a CRADA with the NCI. Under the terms of the CRADA, we will collaborate with both the NCI and the Alliance for Clinical Trials in Oncology to conduct a Phase 2/3 randomized, controlled clinical trial testing the addition of uproleselan to a standard cytarabine/daunorubicin chemotherapy regimen (7&3) in older adults with previously untreated AML who are suitable for intensive chemotherapy. The primary endpoint will be overall survival, which is defined as the time from the date of randomization to death from any cause, with a planned interim analysis based on event-free survival after the first 250 patients have been enrolled in the trial. The full trial is expected to enroll approximately 670 patients. Under the terms of the CRADA, the NCI may also fund additional research,

including clinical trials involving pediatric patients with AML as well as preclinical experiments and clinical trials evaluating alternative chemotherapy regimens. We will supply uproleselan as well as provide financial support to augment data analysis and monitoring for the Phase 3 program. Enrollment in this trial began in April 2019.

GMI-1359 - Drug Candidate Targeting E-selectin and CXCR4

The chemokine CXCR4 has emerged as an important pro-inflammatory cytokine that is involved in cell migration throughout the body. Like E-selectin, tumor cells may also use the CXCR4 cellular pathway, contributing to chemoresistance, metastatic disease and ultimately decreased survival. We have an additional drug candidate, GMI-1359, that simultaneously targets both E-selectin and CXCR4. Since E-selectin and CXCR4 are implicated in keeping cancer cells in the bone marrow, we believe that targeting both E-selectin and CXCR4 with a single compound could improve efficacy in the treatment of cancers that affect the bone marrow, such as hematologic cancers, including AML and multiple myeloma, metastases of certain solid tumors, such as breast and prostate cancer, and primary tumors of the bone such as osteosarcoma, a rare cancer affecting about 900 adolescents a year in the United States, as compared to targeting CXCR4 alone.

Leukemic cells and circulating tumor cells derived from adenocarcinomas home to and are retained in the bone marrow via defined sinusoidal vascular gateways that express E-selectin and soluble mediators such as C-X-C motif chemokine 12 (CXCL12, also known as stem cell-derived factor 1). This homing and retention occurs through an interaction with E-selectin ligands and the chemokine receptor for CXCL12, CXCR4, which is expressed on tumor cells. Interrupting E-selectin-mediated cell activation, adhesion and homing and CXCR4-mediated homing and cell migration and retention may be synergistic and could have therapeutic benefit in many malignancies with unmet medical need. We believe the use of an E-selectin/CXCR4 dual antagonist as an adjunct to chemotherapy and possibly immunotherapy could improve response and remission rates, remission duration, and, ultimately, survival, particularly in malignancies where bone involvement is a primary hallmark of cancer growth and metastasis.

In one in vivo mouse model of bone metastatic prostate carcinoma, combining GMI-1359 with docetaxel significantly reduced tumor burden and attenuated bone destruction compared to docetaxel alone. In two mouse models of primary osteosarcoma, administration of GMI-1359 resulted in inhibition of both tumor growth and spread to the lung. These results were presented during the 2015 and 2018 meetings of the American Association of Cancer Research, respectively. In both mouse models, GMI-1359 showed single agent activity.

GMI-1359 has completed a Phase 1 single-dose escalation trial in healthy volunteers. In this trial, volunteer participants received a single injection of GMI-1359, after which they were evaluated for safety, tolerability, PK and PD. This randomized, double-blind, placebo-controlled, dose-escalation trial was conducted at a single site in the United States. GMI-1359 was generally well tolerated in this trial, with no subjects experiencing serious adverse events. We initiated a Phase 1b trial of GMI-1359 in the fourth quarter of 2019 in HR+ breast cancer patients whose tumors have spread to bone, and the first patient was dosed in January 2020. The trial is being conducted at Duke University and will evaluate safety PK and PD markers of biologic activity in these patients. In January 2020, the FDA granted GMI-1359 orphan drug designation and rare pediatric disease designation for the treatment of osteosarcoma. These designations are expected to make GMI-1359 eligible for priority review by the FDA.

Galectin Inhibitors

Using our glycomimetics platform, we have designed galectin-3 inhibitors that specifically block the binding of galectin-3 to carbohydrate structures. Galectin-3 is a protein that is known to play critical roles in many pathological processes, including fibrosis, checkpoints in T-cell exhaustion during cancer immunotherapy, chemotherapy resistance and cardiovascular disease. We plan to continue to optimize these compounds and conduct additional preclinical experiments in 2020 to further characterize the effects of our galectin-3 inhibitors on immune processes and fibrosis. One such compound, GMI-1757, is a dual antagonist of both E-selectin and galectin-3 and was shown to inhibit thrombus formation in a vena cava model and fibrosis in a corneal neovascularization model. These results were presented at ASH in 2018.

Our License Agreement with Pfizer for Rivipansel

In October 2011, we entered into a license agreement with Pfizer, under which we granted Pfizer an exclusive worldwide license to develop and commercialize rivipansel, for all fields and uses. The products licensed under the agreement also include certain backup compounds, along with modifications of and improvements to rivipansel that meet defined chemical properties. On February 5, 2020, we received written notice from Pfizer of Pfizer's termination of the license agreement, effective April 5, 2020.

Upon termination, all rights and licenses granted to Pfizer under the license agreement will terminate and Pfizer will return to us the rights to develop and commercialize the products subject to the license agreement, including rivipansel, and will grant us a non-exclusive license to use the intellectual property developed by Pfizer in connection with its development of such products, subject to the terms of the license agreement. We will work with Pfizer to effectuate any necessary transition activities with respect to the license agreement and will be determining what, if any, next steps to take with respect to the rivipansel program after reviewing the Phase 3 data more completely.

Our Collaboration and License Agreement with Apollomics for Uproleselan and GMI-1687

In January 2020, we entered into an exclusive collaboration and license agreement with Apollomics for the development and commercialization of uproleselan and GMI-1687 for all fields and all uses in Greater China. Apollomics will be responsible for all clinical development and commercialization activities in Greater China. We and Apollomics will also collaborate to advance the preclinical and clinical development of GMI-1687. As part of the agreement, we received an upfront cash payment of $9.0 million and will be eligible to receive potential milestone payments totaling approximately $180.0 million based on the achievement of specified development, regulatory and commercial milestones, as well as tiered royalties ranging from the high single digits to 15% based of net sales. Apollomics will be responsible for all costs related to development, regulatory approvals and commercialization in Greater China for uproleselan and GMI-1687. We retain all rights for both compounds in the rest of the world and have agreed to supply uproleselan and GMI-1687 to Apollomics pursuant to clinical and commercial supply agreements.

We and Apollomics have established a joint development committee to oversee activities under the collaboration and license agreement. The collaboration and license agreement will terminate on a region-by-region basis upon the expiration of the royalty term for each region, unless earlier terminated by either party. Either party may terminate the collaboration and license agreement upon prior written notice, subject to specified conditions, including uncured material breach, or upon bankruptcy or insolvency of the other party. Apollomics may terminate the collaboration and license agreement upon prior written notice for any reason.

Intellectual Property

We strive to protect the intellectual property that we believe is important to our business, including seeking and maintaining patent protection intended to cover the composition of matter of our drug candidates and their methods of use. We have issued patents directed to rivipansel and methods of use that are expected to expire between 2023 and 2030. We also have issued patents which cover uproleselan and methods of use that are expected to expire between 2032 and 2033. In addition, we have several pending patent applications covering uproleselan and/or methods of using it, the last expiring of which, if issued, currently would be predicted to expire in 2040. We also have an issued patent which covers GMI-1359 and methods of use that is expected to expire in 2036. In addition, we have several pending patent applications covering GMI-1359 and/or methods of using it, the last expiring of which, if issued, currently would be predicted to expire in 2040. We also rely on trade secret protection for our confidential and proprietary information and careful monitoring of such information to protect aspects of our business.

Our success will depend significantly on our ability to obtain and maintain patent and other proprietary protection for commercially important inventions and know-how related to our business, defend and enforce our patents, preserve the confidentiality of our trade secrets and operate without infringing the valid and enforceable patents and other proprietary rights of third parties. We also rely on know-how and continuing technological innovation to develop, strengthen and maintain our proprietary position in the field of glycomimetics.

A third party may hold intellectual property, including patent rights that are important or necessary to the development of our drug candidates. It may be necessary for us to use the patented or proprietary technology of third parties to commercialize our drug candidates, in which case we would be required to obtain a license from these third

parties. If we are not able to obtain such a license, or are not able to obtain such a license on commercially reasonable terms, our business could be materially harmed.

We plan to continue to expand our intellectual property estate by filing patent applications directed to additional glycomimetic compounds and their derivatives, compositions and formulations containing them and methods of using them. Additionally, we will seek patent protection in the United States and internationally for novel compositions of matter covering the compounds and their use in a variety of therapies.

The patent positions of biotechnology companies like us are generally uncertain and involve complex legal, scientific and factual questions. In addition, the coverage claimed in a patent application can be significantly reduced before the patent is issued, and its scope can be reinterpreted after issuance, including where a reissue application is filed in relation to an issued patent to correct issues or errors arising during prosecution that may render claims of the issued patent either wholly or partially invalid or unenforceable. Consequently, we do not know whether any of our drug candidates will be protectable or remain protected by enforceable patents. We cannot predict whether the patent applications we are currently pursuing will issue as patents in any particular jurisdiction or whether the claims of any issued patents will provide sufficient proprietary protection from competitors. Any patents that we hold may be challenged, circumvented or invalidated by third parties.

Because patent applications in the United States and certain other jurisdictions are maintained in secrecy for 18 months, and since publication of discoveries in the scientific or patent literature often lags behind actual discoveries, we cannot be certain of the priority of inventions covered by pending patent applications. Moreover, we may have to participate in interference proceedings declared by the U.S. Patent and Trademark Office, or USPTO, or a foreign patent office to determine priority of invention or in post-grant challenge proceedings, such as oppositions, that challenge priority of invention or other features of patentability. Such proceedings could result in substantial cost, even if the eventual outcome is favorable to us.

Manufacturing

We do not have any manufacturing facilities or personnel. We currently rely, and expect to continue to rely, on third parties for the manufacturing of our drug candidates for preclinical and clinical testing, as well as for commercial manufacturing if our drug candidates receive marketing approval. In the case of rivipansel, the initial process development, manufacturing and scale-up was managed by us and performed under contract by third parties. Under our license agreement with Pfizer, responsibility for manufacturing rivipansel transferred to Pfizer at the time of execution of that agreement, and will remain with Pfizer until the first anniversary of the termination of the license agreement. With respect to our other drug candidates, we anticipate continuing to manage process development, scale-up and manufacturing under contracts with third parties. For uproleselan, we expect a significant increase in manufacturing as we prepare for potential regulatory filings for marketing approval.

All of our drug candidates are small molecules and are manufactured in reliable and reproducible synthetic processes from readily available starting materials. The chemistry does not require unusual equipment in the manufacturing process. We expect to continue to develop drug candidates that can be produced cost-effectively at contract manufacturing facilities.

Commercialization

We have not yet established a sales, marketing or drug distribution infrastructure. We generally expect to retain commercial rights in the United States for our current drug candidates, all of which are still in preclinical or clinical development. We believe that it will be possible for us to access the U.S. market for those drug candidates through a focused, specialized sales force. With respect to uproleselan and GMI-1687, we have granted Apollomics exclusive commercialization rights in Greater China, and we may grant similar rights to third parties for our drug candidates in other jurisdictions around the world.

Subject to receiving marketing approvals, we expect to commence commercialization activities by building a focused sales and marketing organization in the United States to sell our drugs. We believe that such an organization will be able to target the community of physicians who are the key specialists in treating the patient populations for which our

drug candidates are being developed. Outside the United States, we expect to enter into distribution and other marketing arrangements with third parties for any of our drug candidates that obtain marketing approval.

We also plan to build a marketing and sales management organization to create and implement marketing strategies for any drugs that we market through our own sales organization and to oversee and support our sales force. The responsibilities of the marketing organization would include developing educational initiatives with respect to approved drugs and establishing relationships with thought leaders in relevant fields of medicine.

Competition

We have not yet established a sales, marketing or drug distribution infrastructure. We generally expect to retain commercial rights in the United States for our current drug candidates, all of which are still in preclinical or clinical development. We believe that it will be possible for us to access the U.S. market for those drug candidates through a focused, specialized sales force. With respect to uproleselan and GMI-1687, we have granted Apollomics exclusive commercialization rights in Greater China, and we may grant similar rights to third parties for our drug candidates in other jurisdictions around the world.

The key competitive factors affecting the success of all of our drug candidates, if approved, are likely to be their safety, efficacy, convenience, price, the level of generic competition and the availability of coverage and reimbursement from government and other third-party payors.

As the treatment landscape for AML changes, there is substantial risk that uproleselan might not provide additional benefit over other existing therapies. A key consideration in the treatment of relapsed/refractory AML patients is the patient's suitability for intensive salvage chemotherapy. The patient population being studied in our ongoing Phase 3 clinical trial of uproleselan includes AML patients deemed able to tolerate salvage chemotherapy. While there is no commonly accepted single standard approach for salvage chemotherapy, existing options for the treatment of relapsed/refractory AML patients who can tolerate salvage chemotherapy include cytarabine-based combinations. In addition, we are aware of several other product candidates that are commercially available or are in development as potential treatment options for AML patients. Some of the patient populations being studied for these product candidates in development overlap with the patient population being studied in our Phase 3 clinical trial of uproleselan. The existence of established treatment options and the development of competing therapies for relapsed/refractory AML patients could negatively impact our ability to successfully commercialize uproleselan.

The following therapies have been recently approved by the FDA for the treatment of AML:

- RYDAPT® (midostaurin), an oral prescription medicine commercialized by Novartis to be used in combination with certain chemotherapy medicines to treat adults with newly diagnosed AML who have a defect in a gene called FLT3;
- IDHIFA® (enasidenib), a prescription medicine commercialized by Celgene intended to treat people with AML with an isocitrate dehydrogenase-2 (IDH2) mutation whose disease has come back or has not improved after previous treatments;
- VYXEOS™ (daunorubicin and cytarabine), commercialized by Jazz Pharmaceuticals, which is indicated for the treatment of adults with newly-diagnosed therapy-related AML (t-AML) or AML with myelodysplasia-related changes (AML-MRC);
- MYLOTARG™ (gemtuzumab ozogamicin), commercialized by Pfizer, which is indicated for the treatment for the treatment of newly-diagnosed CD33-positive AML in adults (in combination with daunorubicin and cytarabine) and for treatment of relapsed or refractory CD33-positive AML in adults and in pediatric patients of 2 years and older as a stand-alone treatment;
- TIBSOVO® (ivosidenib), a prescription medicine commercialized by Agios intended to treat people with AML with an isocitrate dehydrogenase-1 (IDH1) mutation whose disease has come back or has not improved after previous treatments;
- XOSPATA® (gilteritinib), an oral prescription medicine commercialized by Astellas intended to treat people with AML with a FLT3 gene mutation whose disease has come back or has not improved after previous treatments;

- DAURISMO (glasdigib), an oral prescription medicine commercialized by Pfizer to be used in combination with low-dose cytarabine, for the treatment of newly-diagnosed AML in adult patients who are ≥75 years old or who have comorbidities that preclude use of intensive induction chemotherapy; and
- VENCLEXTA® (venetoclax), an oral prescription medicine commercialized by Abbvie/Genentech to be used in combination with azacitidine, or decitabine, or low-dose cytarabine to treat adults with newly-diagnosed AML who are either 75 years of age or older, or have other medical conditions that prevent the use of standard chemotherapy.

While many chemotherapies in development for hematologic malignancies will likely be complementary to uproleselan, there are also therapies in development that could be directly competitive with uproleselan. In particular, there are a number of CXCR4 antagonists in clinical development that target the bone marrow microenvironment in order to mobilize and sensitize cancer cells to chemotherapy, including candidates developed by Sanofi-Aventis (Mozobil), Bristol Myers Squibb (BMS-936564), NOXXON Pharma (NOX-A12), Eli Lilly (LY2510924) and BioLine RX (BL-8040).

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 and biotechnology 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 and establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

Government Regulation and Product Approval

Government authorities in the United States, at the federal, state and local levels, and in other countries, extensively regulate, among other things, the research, development, testing, manufacture, packaging, storage, recordkeeping, labeling, advertising, promotion, distribution, marketing, import and export of pharmaceutical products, such as those we are developing. The processes for obtaining regulatory approvals in the United States and in foreign countries, along with subsequent compliance with applicable statutes and regulations, require the expenditure of substantial time and financial resources.

United States Government Regulation

In the United States, the FDA regulates drugs under the Federal Food, Drug, and Cosmetic Act, or FDCA, and its implementing regulations. The process of obtaining regulatory approvals and the subsequent compliance with appropriate federal, state, local and foreign statutes and regulations requires the expenditure of substantial time and financial resources. Failure to comply with the applicable United States requirements at any time during the drug development process, approval process or after approval, may subject an applicant to a variety of administrative or judicial sanctions, such as the FDA's refusal to approve pending new drug applications, or NDAs, withdrawal of an approval, imposition of a clinical hold, issuance of warning or untitled letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, restitution, disgorgement or civil or criminal penalties.

The process required by the FDA before a drug may be marketed in the United States generally involves:

- completion of preclinical laboratory tests, animal studies and formulation studies in compliance with the FDA's good laboratory practice, or GLP, regulations;
- submission to the FDA of an IND, which must become effective before human clinical trials may begin;
- approval by an independent institutional review board, or IRB, at each clinical site before each trial may be initiated;

- performance of human clinical trials, including adequate and well-controlled clinical trials, in accordance with good clinical practices, or GCP, to establish the safety and efficacy of the proposed drug for each indication;
- submission to the FDA of an NDA;
- satisfactory completion of an FDA advisory committee review, if applicable;
- satisfactory completion of an FDA inspection of the manufacturing facility or facilities at which the product is produced to assess compliance with current good manufacturing practices, or cGMP, and to assure that the facilities, methods and controls are adequate to preserve the drug's identity, strength, quality and purity, as well as satisfactory completion of an FDA inspection of selected clinical sites to determine GCP compliance; and
- FDA review and approval of the NDA.

Preclinical Studies

Preclinical studies include laboratory evaluation of product chemistry, toxicity and formulation, as well as animal studies to assess potential safety and efficacy. An IND sponsor must submit the results of the preclinical studies, together with manufacturing information, analytical data and any available clinical data or literature, among other things, to the FDA as part of an IND. Some preclinical testing may continue even after the IND is submitted. An IND automatically becomes effective 30 days after receipt by the FDA, unless before that time the FDA raises concerns or questions related to one or more proposed clinical trials and places the clinical trial on a clinical hold. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. As a result, submission of an IND may not result in the FDA allowing clinical trials to commence.

Clinical Trials

Clinical trials involve the administration of the investigational new drug to human subjects under the supervision of qualified investigators in accordance with GCP requirements, which include the requirement that all research subjects provide their informed consent in writing for their participation in any clinical trial. Clinical trials are conducted under protocols detailing, among other things, the objectives of the trial, the parameters to be used in monitoring safety and the effectiveness criteria to be evaluated. A protocol for each clinical trial and any subsequent protocol amendments must be submitted to the FDA as part of the IND. In addition, an IRB at each institution participating in the clinical trial must review and approve the plan for any clinical trial before it commences at that institution, and the IRB must continue to oversee the clinical trial while it is being conducted. Information about certain clinical trials must be submitted within specific timeframes to the National Institutes of Health, or NIH, for public dissemination on their ClinicalTrials.gov website.

Human clinical trials are typically conducted in three sequential phases, which may overlap or be combined. In Phase 1, the drug is initially introduced into healthy human subjects or patients with the target disease or condition and tested for safety, dosage tolerance, absorption, metabolism, distribution, excretion and, if possible, to gain an initial indication of its effectiveness. In Phase 2, the drug typically is administered to a limited patient population to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted diseases and to determine dosage tolerance and optimal dosage. In Phase 3, the drug is administered to an expanded patient population, generally at geographically dispersed clinical trial sites, in well-controlled clinical trials to generate enough data to statistically evaluate the safety and efficacy of the product for approval, to establish the overall risk-benefit profile of the product and to provide adequate information for the labeling of the product.

Progress reports detailing the results of the clinical trials must be submitted, at least annually, to the FDA, and more frequently if serious adverse events occur. Phase 1, Phase 2 and Phase 3 clinical trials may not be completed successfully within any specified period, or at all. Furthermore, the FDA or the sponsor may suspend or terminate a clinical trial at any time on various grounds, including a finding that the research subjects are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution if the clinical trial is not being conducted in accordance with the IRB's requirements, or if the drug has been associated with unexpected serious harm to patients.

A sponsor may request a Special Protocol Assessment, or SPA, the purpose of which is to reach agreement with the FDA on the Phase 3 clinical trial protocol design and analysis that will form the primary basis of an efficacy claim. According to the FDA's published guidance on the SPA process, a sponsor that meets the prerequisites may make a specific request for an SPA and provide information regarding the design and size of the proposed clinical trial. The FDA is supposed to evaluate the protocol within 45 days of the request to assess whether the protocol design and planned analysis of the trial are acceptable to support regulatory approval of the product candidate with respect to effectiveness of the indication studied, and that evaluation may result in discussions and a request for additional information. An SPA request must be made before the proposed trial begins, and all open issues must be resolved before the trial begins for an SPA to be approved. If a written agreement is reached, it will be documented in an SPA letter or the minutes of a meeting between the sponsor and the FDA and made part of the administrative record.

Even if the FDA agrees to the design, execution and analyses proposed in protocols reviewed under the SPA process, the FDA may revoke or alter its agreement under the following circumstances:

- public health concerns emerge that were unrecognized at the time of the protocol assessment, or the director of the review division determines that a substantial scientific issue essential to determining safety or efficacy has been identified after testing has begun;
- a sponsor fails to follow a protocol that was agreed upon with the FDA; or
- the relevant data, assumptions, or information provided by the sponsor in a request for SPA change are found to be false statements or misstatements, or are found to omit relevant facts.

A documented SPA may be modified, and such modification will be deemed binding on the FDA review division, except under the circumstances described above, if the FDA and the sponsor agree in writing to modify the protocol and such modification is intended to improve the study. An SPA, however, does not guarantee that a trial will be successful.

Marketing Approval

Assuming successful completion of the required clinical testing, the results of the preclinical and clinical studies, together with detailed information relating to the product's chemistry, manufacture, controls and proposed labeling, among other things, are submitted to the FDA as part of an NDA requesting approval to market the product for one or more indications. In most cases, the submission of an NDA is subject to a substantial application user fee. Under the Prescription Drug User Fee Act, or PDUFA, guidelines that are currently in effect, the FDA has agreed to certain performance goals regarding the timing of its review of an application.

In addition, under the Pediatric Research Equity Act, an NDA or supplement to an NDA must contain data that are adequate to assess the safety and effectiveness of the drug for the claimed indications in all relevant pediatric subpopulations, and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The FDA may, on its own initiative or at the request of the applicant, grant deferrals for submission of some or all pediatric data until after approval of the product for use in adults, or full or partial waivers from the pediatric data requirements. Unless otherwise required by regulation, the pediatric data requirements do not apply to products with orphan designation.

The FDA also may require submission of a risk evaluation and mitigation strategy, or REMS, plan to mitigate any identified or suspected serious risks. The REMS plan could include medication guides, physician communication plans, assessment plans and elements to assure safe use, such as restricted distribution methods, patient registries or other risk minimization tools.

The FDA conducts a preliminary review of all NDAs within the first 60 days after submission, before accepting them for filing, to determine whether they are sufficiently complete to permit substantive review. The FDA may request additional information rather than accept an NDA for filing. In this event, the application must be resubmitted with the additional information. The resubmitted application is also subject to review before the FDA accepts it for filing. Once the submission is accepted for filing, the FDA begins an in-depth substantive review. The FDA reviews an NDA to determine, among other things, whether the drug is safe and effective and whether the facility in which it is manufactured, processed, packaged or held meets standards designed to assure the product's continued safety, quality and purity.

The FDA typically refers questions regarding novel drugs to an external advisory committee. An advisory committee is a panel of independent experts, including clinicians and other scientific experts, that reviews, evaluates and provides a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions.

Before approving an NDA, the FDA typically will 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 an NDA, the FDA will typically inspect one or more clinical trial sites to assure compliance with GCP.

The testing and approval process for an NDA requires substantial time, effort and financial resources, and could take several years to complete. Data obtained from preclinical and clinical testing are not always conclusive and may be susceptible to varying interpretations, which could delay, limit or prevent regulatory approval. The FDA may not grant approval of an NDA on a timely basis, or at all.

After evaluating the NDA and all related information, including the advisory committee recommendation, if any, and inspection reports regarding the manufacturing facilities and clinical trial sites, the FDA may issue an approval letter, or, in some cases, a complete response letter. A complete response letter generally contains a statement of specific conditions that must be met in order to secure final approval of the NDA and may require additional clinical or preclinical testing in order for the FDA to reconsider the application. Even with submission of this additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval. If and when those conditions have been met to the FDA's satisfaction, the FDA will typically issue an approval letter. An approval letter authorizes commercial marketing of the drug with specific prescribing information for specific indications.

Special FDA Expedited Review and Approval Programs

The FDA has various programs, including fast track designation, accelerated approval, priority review, and breakthrough therapy designation, which are intended to expedite or simplify the process for the development and the FDA review of drugs that are intended for the treatment of serious or life threatening diseases or conditions and demonstrate the potential to address unmet medical needs. The purpose of these programs is to provide important new drugs to patients earlier than under standard FDA review procedures.

To be eligible for a fast track designation, the FDA must determine, based on the request of a sponsor, that a product is intended to treat a serious or life-threatening disease or condition and demonstrates the potential to address an unmet medical need. The FDA will determine that a product will fill an unmet medical need if it will provide a therapy where none exists or provide a therapy that may be potentially superior to existing therapy based on efficacy or safety factors. The FDA may review sections of the NDA for a fast track product on a rolling basis before the complete application is submitted, if the sponsor provides a schedule for the submission of the sections of the NDA, the FDA agrees to accept sections of the NDA and determines that the schedule is acceptable, and the sponsor pays any required user fees upon submission of the first section of the NDA.

The FDA may give a priority review designation to drugs that offer major advances in treatment, or provide a treatment where no adequate therapy exists. A priority review means that the goal for the FDA to review an application is six months, rather than the standard review of ten months under current PDUFA guidelines. These six and ten month review periods are measured from the "filing" date rather than the receipt date for NDAs for new molecular entities, which typically adds approximately two months to the timeline for review and decision from the date of submission. Most products that are eligible for fast track designation are also likely to be considered appropriate to receive a priority review.

In addition, products studied for their safety and effectiveness in treating serious or life-threatening illnesses and that provide meaningful therapeutic benefit over existing treatments may be eligible for accelerated approval and may be approved on the basis of adequate and well-controlled clinical trials establishing that the drug 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 approval, the FDA may require a sponsor of a drug receiving accelerated approval to perform post-marketing studies to verify and describe the predicted effect on irreversible morbidity or mortality or other clinical endpoint, and the drug may be subject to accelerated withdrawal procedures.

A sponsor can also request designation of a product candidate as a "breakthrough therapy." A breakthrough therapy is defined as a drug that is intended, alone or in combination with one or more other drugs, to treat a serious or life-threatening disease or condition, and preliminary clinical evidence indicates that the drug may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. Drugs designated as breakthrough therapies are also eligible for accelerated approval. The FDA must take certain actions, such as holding timely meetings and providing advice, intended to expedite the development and review of an application for approval of a breakthrough therapy.

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. We may explore some of these opportunities for our product candidates as appropriate.

Post-Approval Requirements

Drugs manufactured or distributed pursuant to the FDA approvals are subject to pervasive and continuing regulation by the FDA, including, among other things, requirements relating to recordkeeping, periodic reporting, product sampling and distribution, advertising and promotion and reporting of adverse experiences with the product. After approval, most changes to the approved product, such as adding new indications, manufacturing changes or other labeling claims, are subject to further testing requirements and prior FDA review and approval. There also are continuing annual user fee requirements for any marketed products, as well as application fees for supplemental applications with clinical data.

Even if the FDA approves a product, it may limit the approved indications for use of the product, require that contraindications, warnings or precautions be included in the product labeling, including a boxed warning, require that post-approval studies, including Phase 4 clinical trials, be conducted to further assess a drug's safety after approval, require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution restrictions or other risk management mechanisms under a REMS, which can materially affect the potential market and profitability of the product. The FDA may prevent or limit further marketing of a product based on the results of post-marketing studies or surveillance programs.

In addition, drug manufacturers and other entities involved in the manufacture and distribution of approved drugs are required to register their establishments with the FDA and state agencies, and are subject to periodic unannounced inspections by the FDA and these state agencies for compliance with cGMP requirements. Changes to the manufacturing process are strictly regulated and often require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMP and impose reporting and documentation requirements upon the sponsor and any third-party manufacturers that the sponsor may decide to use. Accordingly, manufacturers must continue to expend time, money and effort in the area of production and quality control to maintain cGMP compliance.

Once an approval is granted, the FDA may withdraw the 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 mandatory revisions to the approved labeling to add new safety information; imposition of post-market studies or clinical

trials to assess new safety risks; or imposition of distribution or other restrictions under a REMS program. Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls;
- fines, warning letters or holds on post-approval clinical trials;
- refusal of the FDA to approve pending NDAs or supplements to approved NDAs, or suspension or revocation of product license approvals;
- product seizure or detention, or refusal to permit the import or export of products; or
- injunctions or the imposition of civil or criminal penalties.

The FDA strictly regulates marketing, labeling, advertising and promotion of products that are placed on the market. Although physicians, in the practice of medicine, may prescribe approved drugs for unapproved indications, pharmaceutical companies generally are required to promote their drug products only for the approved indications 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, and a company that is found to have improperly promoted off-label uses may be subject to significant liability. However, physicians may, in their independent medical judgment, prescribe legally available products for off-label uses. The FDA does not regulate the behavior of physicians in their choice of treatments but the FDA does restrict manufacturer's communications on the subject of off-label use of their products.

In addition, the distribution of prescription pharmaceutical products is subject to the Prescription Drug Marketing Act, or PDMA, which regulates the distribution of drugs and drug samples at the federal level, and sets minimum standards for the registration and regulation of drug distributors by the states. Both the PDMA and state laws limit the distribution of prescription pharmaceutical product samples and impose requirements to ensure accountability in distribution.

Federal and State Fraud and Abuse, Data Privacy and Security, and Transparency Laws and Regulations

In addition to FDA restrictions on marketing of pharmaceutical products, federal and state healthcare laws and regulations restrict business practices in the biopharmaceutical industry. These laws include, but are not limited to, anti-kickback and false claims laws and regulations, data privacy and security, and transparency laws and regulations.

The federal Anti-Kickback Statute prohibits, among other things, knowingly and willfully offering, paying, soliciting or receiving remuneration to induce or in return for purchasing, leasing, ordering or arranging for or recommending the purchase, lease or order of any item or service reimbursable under Medicare, Medicaid or other federal healthcare programs. The term "remuneration" has been broadly interpreted to include anything of value. The Anti-Kickback Statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on one hand and prescribers, purchasers and formulary managers on the other. Although there are a number of statutory exemptions and regulatory safe harbors protecting some common activities from prosecution, the exemptions and safe harbors are drawn narrowly and require strict compliance in order to offer protection. Practices that involve remuneration that may be alleged to be intended to induce prescribing, purchases or recommendations may be subject to scrutiny if they do not qualify for an exemption or safe harbor. Several courts have interpreted the statute's intent requirement to mean that if any one purpose of an arrangement involving remuneration is to induce referrals of federal healthcare covered business, the statute has been violated.

The reach of the federal Anti-Kickback Statute was also broadened by the Patient Protection and Affordable Care Act of 2010, as amended by the Health Care and Education Reconciliation Act of 2010, or collectively PPACA, which, among other things, amended the intent requirement of the federal Anti-Kickback Statute such that a person or entity no longer needs to have actual knowledge of this statute or specific intent to violate it in order to have committed a violation. In addition, PPACA provides that the government may assert that 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 civil False Claims Act or the civil monetary penalties statute, which imposes penalties against any person or entity who

is determined to have presented or caused to be presented a claim to a federal health program that the person knows or should know is for an item or service that was not provided as claimed or is false or fraudulent.

Federal false claims laws, including the federal civil False Claims Act, prohibit 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. Pharmaceutical and other healthcare companies have been prosecuted under these laws for, among other things, allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product. Companies also have been prosecuted for causing false claims to be submitted because of the companies' marketing of products for unapproved, and thus non-reimbursable, uses. The federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, created additional federal criminal statutes that prohibit, among other things, knowingly and willfully executing a scheme to defraud any healthcare benefit program, including private third-party payors and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services. Also, many states have similar fraud and abuse statutes or regulations that apply to items and services reimbursed under Medicaid and other state programs, or, in several states, apply regardless of the payor.

In addition, we may be subject to data privacy and security regulation by both the federal government and the states in which we conduct our business. HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH, and their respective implementing regulations, including the Final HIPAA Omnibus Rule published on January 25, 2013, imposes specified requirements on certain types of individuals and entities relating to the privacy, security and transmission of individually identifiable health information. Among other things, HITECH makes HIPAA's security standards directly applicable to "business associates," defined as independent contractors or agents of covered entities that create, receive, maintain or transmit protected health information in connection with providing a service for or on behalf of a covered entity. HITECH also increased the civil and criminal penalties that may be imposed against covered entities, business associates and possibly other persons, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorney's fees and costs associated with pursuing federal civil actions. In addition, state laws govern the privacy and security of health information in certain circumstances, many of which are not pre-empted by HIPAA, differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

The federal Physician Payments Sunshine Act requires certain manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program, with specific exceptions, to report annually to the Centers for Medicare & Medicaid Services, or CMS, information related to payments or other transfers of value made to physicians, as defined by such law, and teaching hospitals, and applicable manufacturers and applicable group purchasing organizations to report annually to CMS ownership and investment interests held by the physicians and their immediate family members.

We may also be subject to state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government, as well as state laws that require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures.

Because of the breadth of these laws and the narrowness of available statutory and regulatory exemptions, it is possible that some of our business activities could be subject to challenge under one or more of such laws. If our operations are found to be in violation of any of the federal and state laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including administrative, criminal and significant civil monetary penalties, damages, fines, disgorgement, imprisonment, 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, contractual damages, reputational harm, diminished profits and future earnings, disgorgement, exclusion from participation in government healthcare programs and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations. To the extent that any of our products are sold in a foreign country, we may be subject to similar foreign laws and regulations, which may include, for instance, applicable post-marketing requirements, including safety surveillance, anti-fraud and abuse laws and

implementation of corporate compliance programs and reporting of payments or transfers of value to healthcare professionals.

Coverage and Reimbursement

The future commercial success of our drug candidates or any of our collaborators' ability to commercialize any approved drug candidates successfully will depend in part on the extent to which governmental payor programs at the federal and state levels, including Medicare and Medicaid, private health insurers and other third-party payors provide coverage for and establish adequate reimbursement levels for our drug candidates. Government health administration authorities, private health insurers and other organizations generally decide which drugs they will pay for and establish reimbursement levels for healthcare. In particular, in the United States, private health insurers and other third-party payors often provide reimbursement for products and services based on the level at which the government, through the Medicare or Medicaid programs, provides reimbursement for such treatments. In the United States, the EU and other potentially significant markets for our drug candidates, government authorities and third party payors are increasingly attempting to limit or regulate the price of medical products and services, particularly for new and innovative products and therapies, which often has resulted in average selling prices lower than they would otherwise be. Further, the increased emphasis on managed healthcare in the United States and on country and regional pricing and reimbursement controls in the EU will put additional pressure on product pricing, reimbursement and usage, which may adversely affect our future product sales and results of operations. These pressures can arise from rules and practices of managed care groups, judicial decisions and laws and regulations related to Medicare, Medicaid and healthcare reform, pharmaceutical coverage and reimbursement policies and pricing in general.

Third-party payors are increasingly imposing additional requirements and restrictions on coverage and limiting reimbursement levels for medical products. For example, federal and state governments reimburse covered prescription drugs at varying rates generally below average wholesale price. These restrictions and limitations influence the purchase of healthcare services and products. Third-party payors may limit coverage to specific drug products on an approved list, or formulary, which might not include all of the FDA-approved drug products for a particular indication. Third-party payors are increasingly challenging the price and examining the medical necessity and cost-effectiveness of medical products and services, in addition to their safety and efficacy. We may need to conduct expensive pharmacoeconomic studies in order to demonstrate the medical necessity and cost-effectiveness of our products, in addition to the costs required to obtain the FDA approvals. Our drug candidates may not be considered medically necessary or cost-effective. A payor's decision to provide coverage for a drug product does not imply that an adequate reimbursement rate will be approved. Further, one payor's determination to provide coverage for a drug product does not assure that other payors will also provide coverage for the drug product. Adequate third-party reimbursement may not be available to enable us to maintain price levels sufficient to realize an appropriate return on our investment in drug development. Legislative proposals to reform healthcare or reduce costs under government insurance programs may result in lower reimbursement for our drugs and drug candidates or exclusion of our drugs and drug candidates from coverage. The cost containment measures that healthcare payors and providers are instituting and any healthcare reform could significantly reduce our revenues from the sale of any approved drug candidates. We cannot provide any assurances that we will be able to obtain and maintain third party coverage or adequate reimbursement for our drug candidates in whole or in part.

Impact of Healthcare Reform on our Business

The United States and some foreign jurisdictions are considering enacting or have enacted a number of additional legislative and regulatory proposals to change the healthcare system in ways that could affect our ability to sell our products profitably. 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, which include major legislative initiatives to reduce the cost of care through changes in the healthcare system, including limits on the pricing, coverage, and reimbursement of pharmaceutical and biopharmaceutical products, especially under government-funded health care programs, and increased governmental control of drug pricing.

There have been several U.S. government initiatives over the past few years to fund and incentivize certain comparative effectiveness research, including creation of the Patient-Centered Outcomes Research Institute under PPACA. Although the results of the comparative effectiveness studies are not intended to mandate coverage policies for public or private payors, it is not clear what effect, if any, the research will have on the sales of any product, if any such

product or the condition that it is intended to treat is the subject of a study. It is also possible that comparative effectiveness research demonstrating benefits in a competitor's product could adversely affect the sales of our product candidates. If third-party payors do not consider our drug candidates to be cost-effective compared to other available therapies, they may not cover our drug candidates, once approved, as a benefit under their plans or, if they do, the level of payment may not be sufficient to allow us to sell our drugs on a profitable basis. PPACA became law in March 2010 and substantially changed the way healthcare is financed by both governmental and private insurers. Among other measures that may have an impact on our business, PPACA established an annual, nondeductible fee on any entity that manufactures or imports specified branded prescription drugs and biologic agents; a new Medicare Part D coverage gap discount program; and a new formula that increases the rebates a manufacturer must pay under the Medicaid Drug Rebate Program. Additionally, PPACA extends manufacturers' Medicaid rebate liability, expands eligibility criteria for Medicaid programs, and expands entities eligible for discounts under the Public Health Service pharmaceutical pricing program. There remain judicial and Congressional challenges to certain aspects of PPACA, as well as recent efforts by the Trump administration to repeal or replace certain aspects of the PPACA.

Since January 2017, President Trump has signed two Executive Orders designed to delay the implementation of any certain provisions of the PPACA or otherwise circumvent some of the requirements for health insurance mandated by the PPACA. Concurrently, Congress has considered legislation that would repeal or repeal and replace all or part of the PPACA. While Congress has not passed comprehensive repeal legislation, two bills affecting the implementation of certain taxes under the PPACA have been signed into law. The Tax Cuts and Jobs Act of 2017 includes a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the PPACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate". In addition, the 2020 federal spending package permanently eliminated, effective January 1, 2020, the PPACA-mandated "Cadillac" tax on high-cost employer-sponsored health coverage and medical device tax and, effective January 1, 2021, also eliminates the health insurer tax. On December 14, 2018, a Texas U.S. District Court Judge ruled that the PPACA is unconstitutional in its entirety because the "individual mandate" was repealed by Congress as part of the Tax Act. Additionally, on December 18, 2019, the U.S. Court of Appeals for the 5th Circuit upheld the District Court ruling that the individual mandate was unconstitutional and remanded the case back to the District Court to determine whether the remaining provisions of the PPACA are invalid as well.

In addition, there has been increasing legislative and enforcement interest in the United States with respect to specialty drug pricing practices. Specifically, there have been several recent U.S. Congressional inquiries and proposed federal and proposed and enacted state legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drugs. At the federal level, the Trump administration's budget proposal for fiscal year 2020 contained further drug price control measures that could be enacted during the budget process or in other future legislation, including, for example, measures to permit Medicare Part D plans to negotiate the price of certain drugs under Medicare Part B, to allow some states to negotiate drug prices under Medicaid, and to eliminate cost sharing for generic drugs for low-income patients. Further, the Trump administration released a "Blueprint" to lower drug prices and reduce out of pocket costs of drugs that contains additional proposals to increase drug manufacturer competition, increase the negotiating power of certain federal healthcare programs, incentivize manufacturers to lower the list price of their products, and reduce the out of pocket costs of drug products paid by consumers. The Department of Health and Human Services, or HHS, has solicited feedback on some of these measures and has implemented others under its existing authority. While some of these and other measures may require additional authorization to become effective, Congress and the Trump administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. At the state level, legislatures are increasingly passing legislation and implementing regulations designed to control pharmaceutical and biological 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.

As a result of PPACA, Medicare payments are increasingly tied to quality of care and value measures, and reporting of related data by providers such as physicians and hospitals. So called "value based reimbursement" measures may present challenges as well as potential opportunities for biopharmaceutical manufacturers. Medicare incentives for providers meeting certain quality measures may ultimately prove beneficial for manufacturers that are able to establish that their products may help providers to meet such measures. However, manufacturers' ability to market their drug products based on quality or value is highly regulated and not always permissible. In addition, the potentially decreased Medicare reimbursement to those providers that fail to adequately comply with quality reporting requirements could

translate to decreased resources available to purchase products and may negatively impact marketing or utilization of our drug candidates if they are approved for marketing. We cannot predict at this time what impact, if any, the longer-term shift towards value based reimbursement will have on any of our drug candidates in either the Medicare program, or in any other third party payor programs that may similarly tie payment to provider quality.

In addition, other legislative changes have been proposed and adopted since PPACA was enacted. In August 2011, the President signed into law the Budget Control Act of 2011, as amended, which, among other things, created the Joint Select Committee on Deficit Reduction to recommend proposals in spending reductions to Congress. The Joint Select Committee on Deficit Reduction did not achieve its targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, triggering the legislation's automatic reductions to several government programs. These reductions include aggregate reductions to Medicare payments to providers of up to 2% per fiscal year, which began in 2013 and, following passage of the Bipartisan Budget Act of 2015, will continue through 2029 unless additional Congressional action is taken. In January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, which, among other things, reduced Medicare payments to several providers and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. These and other healthcare reform initiatives may result in additional reductions in Medicare and other healthcare funding.

Exclusivity and Approval of Competing Products

Hatch-Waxman Patent Listing

In seeking approval for a drug through an NDA, applicants are required to list with the FDA each patent with claims that cover the applicant's product or a method of using the product. Upon approval of a drug, each of the patents listed in the application for the drug is then published in the FDA's Approved Drug Products with Therapeutic Equivalence Evaluations, commonly known as the Orange Book. Drugs listed in the Orange Book can, in turn, be cited by potential competitors in support of approval of an abbreviated new drug application, or ANDA, or 505(b)(2) NDA. Generally, an ANDA provides for marketing of a drug product that has the same active ingredients in the same strengths, dosage form and route of administration as the listed drug and has been shown to be bioequivalent through *in vitro* or *in vivo* testing or otherwise to the listed drug. ANDA applicants are not required to conduct or submit results of preclinical or clinical tests to prove the safety or efficacy of their drug product, other than the requirement for bioequivalence testing. Drugs approved in this way are commonly referred to as "generic equivalents" to the listed drug, and can often be substituted by pharmacists under prescriptions written for the original listed drug. 505(b)(2) NDAs generally are submitted for changes to a previously approved drug product, such as a new dosage form or indication.

The ANDA or 505(b)(2) NDA applicant is required to certify to the FDA concerning any patents listed for the approved product in the FDA's Orange Book, except for patents covering methods of use for which the ANDA applicant is not seeking approval. Specifically, the applicant must certify with respect to each patent that:

- the required patent information has not been filed;
- the listed patent has expired;
- the listed patent has not expired, but will expire on a particular date and approval is sought after patent expiration; or
- the listed patent is invalid, unenforceable or will not be infringed by the new product.

Generally, the ANDA or 505(b)(2) NDA cannot be approved until all listed patents have expired, except when the ANDA or 505(b)(2) NDA applicant challenges a listed drug. A certification that the proposed product will not infringe the already approved product's listed patents or that such patents are invalid or unenforceable is called a Paragraph IV certification. If the applicant does not challenge the listed patents or indicate that it is not seeking approval of a patented method of use, the ANDA or 505(b)(2) NDA application will not be approved until all the listed patents claiming the referenced product have expired.

If the ANDA or 505(b)(2) NDA applicant has provided a Paragraph IV certification to the FDA, the applicant must also send notice of the Paragraph IV certification to the NDA and patent holders once the application has been accepted for filing by the FDA. The NDA and patent holders may then initiate a patent infringement lawsuit in response to the notice of the Paragraph IV certification. The filing of a patent infringement lawsuit within 45 days after the receipt of

notice of the Paragraph IV certification automatically prevents the FDA from approving the ANDA or 505(b)(2) NDA until the earlier of 30 months, expiration of the patent, settlement of the lawsuit or a decision in the infringement case that is favorable to the ANDA applicant.

Hatch-Waxman Non-Patent Exclusivity

Market and data exclusivity provisions under the FDCA also can delay the submission or the approval of certain applications for competing products. The FDCA provides a five-year period of non-patent data exclusivity within the United States to the first applicant to gain approval of an NDA for a new chemical entity. A drug is a new chemical entity if the FDA has not previously approved any other new drug containing the same active moiety, which is the molecule or ion responsible for the activity of the drug substance. During the exclusivity period, the FDA may not accept for review an ANDA or a 505(b)(2) NDA submitted by another company that contains the previously approved active moiety. However, an ANDA or 505(b)(2) NDA may be submitted after four years if it contains a certification of patent invalidity or noninfringement.

The FDCA also provides three years of marketing exclusivity for an NDA, 505(b)(2) NDA or supplement to an existing NDA or 505(b)(2) NDA if new clinical investigations, other than bioavailability studies, that were conducted or sponsored by the applicant, are deemed by the FDA to be essential to the approval of the application or supplement. Three-year exclusivity may be awarded for changes to a previously approved drug product, such as new indications, dosages, strengths or dosage forms of an existing drug. This three-year exclusivity covers only the conditions of use associated with the new clinical investigations and, as a general matter, does not prohibit the FDA from approving ANDAs or 505(b)(2) NDAs for generic versions of the original, unmodified drug product. Five-year and three-year exclusivity will not delay the submission or approval of a full NDA; however, an applicant submitting a full NDA would be required to conduct or obtain a right of reference to all of the preclinical studies and adequate and well-controlled clinical trials necessary to demonstrate safety and effectiveness.

Orphan Drug Exclusivity

Under the Orphan Drug Act, the FDA may grant orphan designation to a drug or biological product intended to treat a rare disease or condition, which is generally 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 and for which there is no reasonable expectation that the cost of developing and making a drug or biological product available in the United States for this type of disease or condition will be recovered from sales of the product. Orphan designation must be requested before submitting an NDA or biologics license application. Orphan designation does not convey any advantage in or shorten the duration of the regulatory review and approval process. We have received orphan drug designation for rivipansel, uproleselan and GMI-1359, and we intend to seek orphan drug designation and exclusivity for our other drug candidates whenever it is available.

If a product that has orphan designation subsequently receives the first FDA approval for such drug for the disease or condition for which it has such designation, the product is entitled to orphan product exclusivity, which means that the FDA may not approve any other applications to market the same drug or biological product for the same indication for seven years, except in limited circumstances, such as a showing of clinical superiority to the product with orphan exclusivity. Competitors, however, may receive approval of different products for the indication for which the orphan product has exclusivity or obtain approval for the same product but for a different indication for which the orphan product has exclusivity. If a drug or biological product designated as an orphan product receives marketing approval for an indication broader than what is designated, it may not be entitled to orphan product exclusivity. Orphan drug status in the EU has similar, but not identical, benefits.

Pediatric Exclusivity

Pediatric exclusivity is another type of non-patent marketing exclusivity in the United States and, if granted, provides for the attachment of an additional six months of marketing protection to the term of any existing regulatory exclusivity, including the non-patent and orphan drug exclusivity periods described above. This six-month exclusivity may be granted if an NDA sponsor submits pediatric data that fairly respond to a written request from the FDA for such data. The data do not need to show the product to be effective in the pediatric population studied; rather, if the clinical trial is deemed to fairly respond to the FDA's request, the additional protection is granted. If reports of requested

pediatric studies are submitted to and accepted by FDA within the statutory time limits, whatever statutory or regulatory periods of exclusivity or Orange Book listed patent protection cover the drug are extended by six months. This is not a patent term extension, but it effectively extends the regulatory period during which the FDA cannot approve an ANDA or 505(b)(2) application owing to regulatory exclusivity or listed patents. If any of our drug candidates is approved, we anticipate seeking pediatric exclusivity when it is appropriate.

Foreign Regulation

In order to market any product outside of the United States, we would need to comply with numerous and varying regulatory requirements of other countries regarding safety and efficacy and governing, among other things, clinical trials, marketing authorization, commercial sales and distribution of our drug candidates. For example, in the EU, we must obtain authorization of a clinical trial application, or CTA, in each member state in which we intend to conduct a clinical trial. Whether or not we obtain FDA approval for a drug, we would need to obtain the necessary approvals by the comparable regulatory authorities of foreign countries before we can commence clinical trials or marketing of the drug in those countries. The approval process varies from country to country and can involve additional product testing and additional administrative review periods. The time required to obtain approval in other countries might differ from and be longer than that required to obtain FDA approval. Regulatory approval in one country does not ensure regulatory approval in another, but a failure or delay in obtaining regulatory approval in one country may negatively impact the regulatory process in others.

Employees

As of December 31, 2019, we had 57 employees, all of whom are full-time and located in the United States. None of our employees is represented by a labor union or covered by a collective bargaining agreement. We consider our relationship with our employees to be good.

Legal Proceedings

We are not currently a party to any material legal proceedings, and we are not aware of any pending or threatened legal proceeding against us that we believe could have a material adverse effect on our business, operating results or financial condition.

Customer Concentration and Geographic Information

We did not recognize any revenue during the years ended December 31, 2019 or 2018. All of our long-lived assets are located in the United States.

Corporate Information

We were incorporated under the laws of the State of Delaware in April 2003 and commenced operations in May 2003. Our principal executive offices are located at 9708 Medical Center Drive, Rockville, Maryland 20850. Our telephone number is (240) 243-1201.

Available Information

Our internet website address is www.glycomimetics.com. In addition to the information contained in this Annual Report, information about us can be found on our website. Our website and information included in or linked to our website are not part of this Annual Report.

Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, are available free of charge through our website as soon as reasonably practicable after they are electronically filed with or furnished to the Securities and Exchange Commission, or SEC. Additionally the SEC maintains an internet site that contains reports, proxy and information statements and other information. The address of the SEC's website is www.sec.gov.

ITEM 1A. RISK FACTORS

Our business is subject to numerous risks. You should carefully consider the following risks, as well as general economic and business risks, and all of the other information contained in this Annual Report, together with any other documents we file with the SEC. Any of the following risks could have a material adverse effect on our business, operating results and financial condition and cause the trading price of our common stock to decline.

Risks Related to Our Financial Position and Capital Needs

We have incurred significant losses since our inception. We expect to continue to incur losses over the next several years and may never achieve or maintain profitability.

Since inception, we have incurred significant operating losses. As of December 31, 2019, we had an accumulated deficit of $258.4 million. In recent years, we have financed our operations with proceeds from registered public offerings of our common stock and milestone payments under our license agreement with Pfizer, which has been terminated effective April 2020. We have not generated any meaningful revenue since our inception other than from upfront and milestone payments from our license and collaboration agreements.

We have devoted substantially all of our financial resources and efforts to research and development, including preclinical studies and clinical trials. We are still in the early stages of development of our drug candidates, and we have not completed development of any drugs. We expect to continue to incur significant expenses and operating losses over the next several years. Our net losses may fluctuate significantly from quarter to quarter and year to year. We anticipate that our expenses will increase substantially as we:

- conduct clinical trials of uproleselan in AML;
- conduct clinical trials of GMI-1359;
- initiate and conduct clinical trials of GMI-1687;
- continue the research and development of our other drug candidates;
- seek to discover and develop additional drug candidates;
- seek regulatory approvals for any drug candidates that successfully complete clinical trials;
- ultimately establish a sales, marketing and distribution infrastructure and scale up external manufacturing capabilities to commercialize any drugs for which we may obtain regulatory approval;
- maintain, expand and protect our intellectual property portfolio;
- hire additional clinical, quality control, regulatory and scientific personnel;
- add operational, financial and management information systems and personnel, including personnel to support our drug development and planned future commercialization efforts; and
- incur legal, accounting and other expenses in operating as a public company.

To become and remain profitable, we must succeed in developing and eventually commercializing drugs that generate significant revenue. This will require us to be successful in a range of challenging activities, including completing preclinical testing and clinical trials of our drug candidates, obtaining regulatory approval for these drug candidates and manufacturing and commercializing any drugs for which we may obtain regulatory approval, as well as discovering additional drug candidates. We are only in the preliminary stages of most of these activities. We may never succeed in these activities and, even if we do, may never generate revenue that is significant enough to achieve profitability.

In the case of uproleselan and GMI-1687, our ability to generate revenue is partially dependent upon the achievement of development, regulatory and commercial milestones and sales sufficient to generate royalties under our license agreement with Apollomics, and the achievement of such milestones is largely out of our control. If Apollomics

fails, or chooses not to continue, to further develop, to seek regulatory approval for or to commercialize uproleselan in Greater China, our ability to generate revenue with respect to uproleselan may be significantly reduced or eliminated.

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 achieve profitability. If we are required by regulatory authorities to perform studies in addition to those currently expected, or if there are any delays in completing our clinical trials or the development of any of our drug candidates, our expenses could increase.

Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable would depress the value of our company and could impair our ability to raise capital, expand our business, maintain our research and development efforts or even continue our operations. A decline in the value of our company could also cause result in significant harm to our financial position and adversely affect our stock price.

We will need substantial additional funding to pursue our business objectives. If we are unable to raise capital when needed, we could be forced to delay, reduce or eliminate our drug development programs or potential commercialization efforts.

We believe that our cash and cash equivalents as of December 31, 2019 will enable us to fund our operating expenses and capital expenditure requirements into 2022. However, we will need to obtain substantial additional funding in connection with our continuing operations. Our future capital requirements will depend on many factors, including:

- the scope, progress, results and costs of preclinical development, laboratory testing and clinical trials for our drug candidates, including our ongoing and planned clinical trials of uproleselan, GMI-1359 and GMI-1687;
- the number and development requirements of other drug candidates that we may pursue;
- the costs, timing and outcome of regulatory review of our drug candidates;
- the costs and timing of future commercialization activities, including product manufacturing, marketing, sales and distribution, for any of our drug candidates for which we receive marketing approval;
- the revenue, if any, received from commercial sales of our drug candidates for which we receive marketing approval;
- the costs and timing of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending any intellectual property-related claims; and
- the extent to which we acquire or in-license other drug candidates and technologies.

Identifying potential drug candidates and conducting preclinical testing and clinical trials is a time consuming, expensive and uncertain process that takes years to complete, and we or any current or future collaborators may never generate the necessary data or results required to obtain regulatory approval and achieve product sales. In addition, our drug candidates, if approved, may not achieve commercial success. Our commercial revenue, if any, will be derived from the sale of drugs that we do not expect to be commercially available for several years, if at all. Accordingly, we will need to continue to rely on additional financing to achieve our business objectives. Adequate additional financing may not be available to us on acceptable terms, or at all. If we are unable to raise capital when needed or on attractive terms, we could be forced to delay, reduce or eliminate our research and development programs or any future commercialization efforts.

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

Until such time, if ever, as we can generate substantial revenue from the sale of our drugs, we expect to finance our cash needs through a combination of equity offerings, debt financings and license and development agreements. We do not currently have any committed external source of funds other than possible milestone payments and possible royalties under our license agreement with Apollomics. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms of these securities may include liquidation or other preferences that could adversely affect your rights as a common stockholder. Debt financing and

preferred equity financing, if available, may involve 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 collaborations, strategic alliances or marketing, distribution or licensing arrangements with third parties, we may be required to relinquish valuable rights to our research programs or drug candidates or grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings or other arrangements with third parties when needed, we may be required to delay, limit, reduce or terminate our drug development or future commercialization efforts or grant rights to third parties to develop and market drug candidates that we would otherwise prefer to develop and market ourselves.

Our operating history may make it difficult for you to evaluate the success of our business to date and to assess our future viability.

We commenced operations in 2003, and our operations to date have been largely focused on raising capital, developing our expertise in carbohydrate chemistry and knowledge of carbohydrate biology, identifying potential drug candidates, undertaking preclinical studies and conducting clinical trials. We have two drug candidates in clinical development, but we have not yet demonstrated our ability to successfully complete later stage clinical trials, obtain regulatory approvals, manufacture a commercial scale drug, or arrange for a third party to do so on our behalf, or conduct sales and marketing activities necessary for successful commercialization.

We may encounter unforeseen expenses, difficulties, complications, delays and other known or unknown factors in achieving our business objectives. We will need to transition at some point from a company with a research and development focus to a company capable of supporting commercial activities. We may not be successful in such a transition.

We expect our financial condition and operating results to continue to fluctuate significantly from quarter to quarter and year to year due to a variety of factors, many of which are beyond our control. Accordingly, you should not rely upon the results of any quarterly or annual periods as indications of future operating performance

Our ability to use net operating losses to offset future taxable income may be subject to limitations.

As of December 31, 2019, we had federal and state net operating loss carryforwards of $194.0 million, research and development tax credit carryforwards of $9.1 million and $26.1 million of orphan drug tax credit carryforwards. The federal and state net operating loss carryforwards will begin to expire, if not utilized, beginning in 2026, the research and development tax credits in 2023 and the orphan drug tax credit in 2033. These net operating loss and tax credit carryforwards could expire unused and be unavailable to offset future income tax liabilities. Under federal income tax laws, federal net operating losses incurred in 2018 and in future years may be carried forward indefinitely, but the deductibility of such federal net operating losses is limited. In addition, under Section 382 of the Internal Revenue Code of 1986, as amended, and corresponding provisions of state law, if a corporation undergoes an “ownership change,” which is generally defined as a greater than 50% change, by value, in its equity ownership over a three-year period, the corporation’s ability to use its pre-change net operating loss carryforwards and other pre-change tax attributes to offset its post-change income or taxes may be limited. We could experience ownership changes in the future that would limit our ability to use our net operating loss carryforwards.

Risks Related to the Discovery and Development of Our Drug Candidates

Our research and development is focused on discovering and developing novel glycomimetic drugs, and we are taking an innovative approach to discovering and developing drugs, which may never lead to marketable drugs.

A key element of our strategy is to use and expand our platform to build a pipeline of novel glycomimetic drug candidates and progress these drug candidates through clinical development for the treatment of a variety of diseases. The discovery of therapeutic drugs based on molecules that mimic the structure of carbohydrates is an emerging field, and the scientific discoveries that form the basis for our efforts to discover and develop drug candidates are relatively new. The scientific evidence to support the feasibility of developing drug candidates based on these discoveries is both preliminary and limited. Although our research and development efforts to date have resulted in a pipeline of glycomimetic drug candidates, we may not be able to develop drug candidates that are safe and effective. Even if we are

successful in continuing to build our pipeline, the potential drug 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 drugs that will receive marketing approval and achieve market acceptance. If we do not successfully develop and commercialize drug candidates based upon our glycomimetics platform, we will not be able to obtain product revenue in future periods, which likely would result in significant harm to our financial position and adversely affect our stock price.

We have only two drug candidates that are in clinical trials. All of our other drug candidates are still in preclinical development. If we or our collaborators are unable to commercialize our drug candidates or experience significant delays in doing so, our business will be materially harmed.

Uproleselan and GMI-1359 are our only drug candidates that are in clinical trials. Our other drug candidates are still in preclinical development. We have not completed the development of any drug candidates, we currently generate no revenue from the sale of any drugs and we may never be able to develop a marketable drug. We have invested substantially all of our efforts and financial resources in the development of our glycomimetics platform, the identification of potential drug candidates using that platform and the development of our drug candidates. Our ability to generate revenue from our other drug candidates, which we do not expect to occur for many years, if ever, will depend heavily on their successful development and eventual commercialization. The success of those drug candidates will depend on several factors, including:

- successful completion of preclinical studies and clinical trials;
- receipt of marketing approvals from applicable regulatory authorities;
- obtaining and maintaining patent and trade secret protection and regulatory exclusivity for our drug candidates;
- making arrangements with third-party manufacturers for, or establishing, commercial manufacturing capabilities;
- launching commercial sales of the drugs, if and when approved, whether alone or in collaboration with others;
- acceptance of the drugs, if and when approved, by patients, the medical community and third-party payors;
- effectively competing with other therapies;
- obtaining and maintaining healthcare coverage and adequate reimbursement;
- protecting our rights in our intellectual property portfolio; and
- maintaining a continued acceptable safety profile of the drugs following approval.

If we do not achieve one or more of these factors in a timely manner or at all, we could experience significant delays or an inability to successfully commercialize our drug candidates, which would materially harm our business.

Clinical drug development involves a lengthy and expensive process, with an uncertain outcome. We may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of our drug candidates.

All but two of our drug candidates are in preclinical development, and their risk of failure is high. It is impossible to predict when or if any of our drug candidates will prove safe or effective in humans or will receive regulatory approval. Before obtaining marketing approval from regulatory authorities for the sale of any drug candidate, we or a collaborator must complete preclinical development and then conduct extensive clinical trials to demonstrate the safety and efficacy of the drug candidate in humans. Clinical testing is expensive, difficult to design and implement, can take many years to complete and is uncertain as to outcome. A failure of one or more clinical trials can occur at any stage of development. The outcome of preclinical testing and early clinical trials may not be predictive of the success of later clinical trials, and interim results of a clinical trial do not necessarily predict final results. Moreover, preclinical and clinical data are often susceptible to varying interpretations and analyses, and many companies that have believed their drug candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain marketing approval of their drugs.

We or our current or future collaborators may experience numerous unforeseen events during, or as a result of, clinical trials that could delay or prevent our or their ability to receive marketing approval or commercialize our drug candidates, including:

- regulators or institutional review boards may not authorize us or our investigators to commence a clinical trial or conduct a clinical trial at a prospective trial site;
- we may experience delays in reaching, or fail to reach, agreement on acceptable clinical trial contracts or clinical trial protocols with prospective trial sites;
- clinical trials of our drug candidates may produce negative or inconclusive results, including failure to demonstrate statistical significance, and we may decide, or regulators may require us, to conduct additional clinical trials or abandon drug development programs;
- the number of patients required for clinical trials of our drug candidates may be larger than we anticipate, enrollment in these clinical trials may be slower than we anticipate or participants may drop out of these clinical trials at a higher rate than we anticipate;
- our third-party contractors may fail to comply with regulatory requirements or meet their contractual obligations to us in a timely manner, or at all;
- regulators or institutional review boards may require that we or our investigators suspend or terminate clinical research for various reasons, including noncompliance with regulatory requirements or a finding that the participants are being exposed to unacceptable health risks;
- the cost of clinical trials of our drug candidates may be greater than we anticipate;
- the supply or quality of our drug candidates or other materials necessary to conduct clinical trials of our drug candidates may be insufficient or inadequate; and
- our drug candidates may have undesirable side effects or other unexpected characteristics, causing us or our investigators, regulators or institutional review boards to suspend or terminate the trials.

If we are required to conduct additional clinical trials or other testing of our drug candidates beyond those that we currently contemplate, if we are unable to successfully complete clinical trials of our drug candidates or other testing, if the results of these clinical trials or tests are not positive or are only modestly positive or if there are safety concerns, we may:

- be delayed in obtaining marketing approval for our drug candidates;
- not obtain marketing approval at all;
- obtain approval for indications or patient populations that are not as broad as intended or desired;
- obtain approval with labeling that includes significant use or distribution restrictions or safety warnings;
- be subject to additional post-marketing testing requirements; or
- have the drug removed from the market after obtaining marketing approval.

Our drug development costs will also increase if we experience delays in testing or marketing approvals. We do not know whether any of our preclinical studies or clinical trials will begin as planned, will need to be restructured or will be completed on schedule, or at all. Significant preclinical study or clinical trial delays also could shorten any periods during which we may have the exclusive right to commercialize our drug candidates or allow our competitors to bring drugs to market before we do, and thereby impair our ability to successfully commercialize our drug candidates.

If we or our collaborators experience delays or difficulties in the enrollment of patients in clinical trials, our receipt of necessary regulatory approvals could be delayed or prevented.

As described in this report, we are currently conducting a Phase 3 clinical trial of our drug candidate uproleselan, for which we currently expect to complete enrollment in the second half of 2021. However, the timing for completion of enrollment in this and other clinical trials could be delayed for a number of reasons. For example, we or our collaborators

may not be able to initiate or continue clinical trials for our drug candidates if we are unable to locate and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA or similar regulatory authorities outside the United States. In particular, because our drug candidates are intended to treat patients with orphan diseases such as AML and osteosarcoma, our or our collaborators' ability to enroll eligible patients may be limited or may result in slower enrollment than we anticipate. In addition, some of our competitors have ongoing clinical trials for drug candidates that treat the same or similar indications as our drug candidates, and patients who would otherwise be eligible for our clinical trials may instead enroll in clinical trials of our competitors' drug candidates. Patient enrollment is also affected by other factors, including:

- the severity of the disease or condition under investigation;
- the eligibility criteria for the trial;
- the perceived risks and benefits of the drug candidate;
- the availability of drugs approved to treat the disease or condition under investigation;
- the efforts to facilitate timely enrollment in clinical trials;
- the patient referral practices of physicians;
- the ability to monitor patients adequately during and after treatment; and
- the proximity and availability of clinical trial sites for prospective patients.

Our or our collaborators' inability to enroll a sufficient number of patients for clinical trials would result in significant delays and could require us or them to abandon one or more clinical trials altogether. Enrollment delays in these clinical trials may result in increased development costs for our drug candidates, which would cause the value of our company to decline and limit our ability to obtain additional financing.

If serious adverse or unacceptable side effects are identified during the development of our drug candidates, we may need to abandon or limit the development of some of our drug candidates.

If our drug candidates are associated with undesirable side effects in clinical trials or have characteristics that are unexpected, we may need to abandon their development or limit their development to more narrow uses or subpopulations in which the undesirable side effects or other characteristics are less prevalent, less severe or more acceptable from a risk-benefit perspective. Many drug candidates that initially showed promise in early stage testing have later been found to cause side effects that prevented their further development.

We may expend our limited resources to pursue a particular drug candidate or indication and fail to capitalize on drug candidates or indications that may be more profitable or for which there is a greater likelihood of success.

Because we have limited financial and management resources, we focus on a limited number of research programs and drug candidates. As a result, we may forego or delay pursuit of opportunities with other drug candidates or for other indications that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial drugs or profitable market opportunities. Our spending on current and future research and development programs and drug candidates for specific indications may not yield any commercially viable drugs. If we do not accurately evaluate the commercial potential or target market for a particular drug candidate, we may relinquish valuable rights to that drug candidate through collaboration, licensing or other arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights.

Risks Related to Our Dependence on Third Parties

Our success depends in part on current and future collaborations. If we are unable to maintain any of these collaborations, or if these collaborations are not successful, our business could be adversely affected.

We have limited capabilities for drug development and do not yet have any capabilities for sales, marketing or distribution. We cannot assure you that our current or future collaborators will develop our drug candidates in a timely

manner, or at all, or, if regulatory approval for a drug candidate is achieved, that such collaborator will successfully commercialize the candidate.

Any collaborations we might enter into may pose a number of risks, including:

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

If any collaborations we might enter into do not result in the successful development and commercialization of drugs, or if one of our collaborators terminates its agreement with us, we may not receive any future research funding or milestone or royalty payments under the collaboration. For example, in February 2020, Pfizer terminated its license agreement with us for the worldwide development and commercialization of rivipansel, thereby eliminating our right to receive any future development or commercialization milestones or royalty payments for sales of the drug candidate. In addition, even if we are eligible to receive any such payments from a collaborator, they could be substantially delayed. If we do not receive the funding we expect under these agreements, the development of our drug candidates could be delayed and we may need additional resources to develop our drug candidates. All of the risks relating to drug development, regulatory approval and commercialization described in this report also apply to the activities of our collaborators.

If a current or future collaborator of ours is involved in a business combination, the collaborator might deemphasize or terminate development or commercialization of any drug candidate licensed to it by us. If one of our collaborators terminates its agreement with us, we may find it more difficult to attract new collaborators and our reputation in the business and financial communities could be adversely affected. We may in the future determine to collaborate with pharmaceutical and biotechnology companies for their development and potential commercialization of our drug candidates. We face significant competition in seeking appropriate collaborators. Our ability to reach a definitive agreement for a collaboration will depend, among other things, upon our assessment of a collaborator's resources and expertise, the terms and conditions of the proposed collaboration and the proposed collaborator's evaluation of a number of factors. If we are unable to reach agreements with suitable collaborators on a timely basis, on acceptable terms, or at all, we may have to curtail the development of a drug candidate, reduce or delay its development or 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 collaborations 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 drug candidates or bring them to market, which would impair our business prospects.

We expect to rely on third parties to conduct our future clinical trials for drug candidates, and those third parties may not perform satisfactorily, including failing to meet deadlines for the completion of such trials.

We have engaged a third-party contract research organization, or CRO, to conduct our ongoing and planned clinical trials for uproleselan and GMI-1359 and expect to engage CROs with respect to any of our other drug candidates that may progress to clinical development. We expect to continue to rely on third parties, such as CROs, clinical data management organizations, medical institutions and clinical investigators, to conduct those clinical trials. Agreements with such third parties might terminate for a variety of reasons, including a failure to perform by the third parties. If we need to enter into alternative arrangements, that would delay our drug development activities.

Our reliance on these third parties for research and development activities will reduce our control over these activities, but will not relieve us of our responsibilities. For example, we will remain responsible for ensuring that each of our clinical trials is conducted in accordance with the general investigational plan and protocols for the trial. Moreover, the FDA requires us to comply with standards, commonly referred to as good clinical practices, or GCPs, for conducting, recording and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity and confidentiality of trial participants are protected. We also are required to register ongoing clinical trials and post the results of completed clinical trials on a government-sponsored database, ClinicalTrials.gov, within specified timeframes. Failure to do so can result in fines, adverse publicity and significant civil and criminal sanctions.

Furthermore, these third parties may also have relationships with other entities, some of which may be our competitors. If these third parties do not successfully carry out their contractual duties, meet expected deadlines or conduct our clinical trials in accordance with regulatory requirements or our stated protocols, we will not be able to obtain, or may be delayed in obtaining, marketing approvals for our drug candidates and will not be able to, or may be delayed in our efforts to, successfully commercialize our drug candidates.

We also expect to rely on other third parties to store and distribute drug supplies for our clinical trials. Any performance failure on the part of our distributors could delay clinical development or marketing approval of our drug candidates or commercialization of our drugs, producing additional losses and depriving us of potential revenue.

We contract with third parties for the manufacturing of some of our drug candidates for preclinical and clinical testing and expect to continue to do so for commercialization. This reliance on third parties increases the risk that we will not have sufficient quantities of our drug candidates or drugs, or such quantities at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts.

We do not have any manufacturing facilities or personnel. For our drug candidates other than rivipansel, for which manufacturing responsibility will remain with Pfizer until the first anniversary of the effective date of termination of our

license agreement with them, we rely, and expect to continue to rely, on third parties for the manufacturing of our drug candidates for preclinical and clinical testing, as well as for commercial manufacture if any of our drug candidates receives marketing approval. Disruption to our supply arrangements may arise from unforeseeable events that impact such third parties, including events such as pandemic, epidemic or outbreak of a disease such as the coronavirus outbreak currently impacting China and other regions of the world. Our reliance on third parties increases the risk that we will not have sufficient quantities of our drug candidates or drugs, or such quantities at an acceptable cost or quality, which could delay, prevent or impair our ability to timely conduct our clinical trials or our other development or commercialization efforts.

We also expect to rely on third-party manufacturers or third-party collaborators for the manufacturing of commercial supply of any other drug candidates for which we or our collaborators obtain marketing approval. We may be unable to establish any agreements with third-party manufacturers or to do so on acceptable terms. Even if we are able to establish agreements with third-party manufacturers, reliance on third-party manufacturers entails additional risks, including:

- reliance on the third party for regulatory compliance and quality assurance;
- the possible breach of the manufacturing agreement by the third party;
- the possible misappropriation of our proprietary information, including our trade secrets and know-how; and
- the possible termination or non-renewal of the agreement by the third party at a time that is costly or inconvenient for us.

Third-party manufacturers may not be able to comply with current good manufacturing practices, or cGMP, regulations or similar regulatory requirements outside the United States. Our failure, or the failure of our third-party manufacturers, to comply with applicable regulations could result in sanctions being imposed on us, including clinical holds, fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of drug candidates or drugs, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect supplies of our drugs.

In addition, in the event that any of our third-party manufacturers fails to comply with such requirements or to perform its obligations to us in relation to quality, timing or otherwise, or if our supply of components or other materials becomes limited or interrupted for other reasons, we may be forced to manufacture the materials ourselves, for which we currently do not have the capabilities or resources, or enter into an agreement with another third party, which we may not be able to do on commercially reasonable terms, if at all. We do not currently have arrangements in place for redundant supply or a second source for bulk drug substance. If our current contract manufacturers cannot perform as agreed, we may be required to replace such manufacturers and we may incur added costs and delays in identifying and qualifying any such replacement. Any replacement of our manufacturers could require significant effort and expertise because there may be a limited number of qualified replacements. If we are required to change manufacturers for any reason, we will be required to verify that the new manufacturer maintains facilities and procedures that comply with quality standards and with all applicable regulations and guidelines. The delays associated with the verification of a new manufacturer could negatively affect our ability to develop our drug candidates in a timely manner or within budget.

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

We, or our third-party manufacturers, may be unable to successfully scale-up manufacturing of our drug candidates in sufficient quality and quantity, which would delay or prevent us from conducting our ongoing and planned clinical trials and developing our drug candidates.

In order to conduct our ongoing and planned clinical trials of our drug candidates, we will need to manufacture them in large quantities. We, or our manufacturing partners, may be unable to successfully increase the manufacturing capacity for any of our drug candidates in a timely or cost-effective manner, or at all. In addition, quality issues may arise during scale-up activities. If we or our manufacturing partners are unable to successfully scale up the manufacture of our drug candidates in sufficient quality and quantity, the development, testing and clinical trials of that drug

candidate may be delayed or become infeasible, and marketing approval or commercial launch of any resulting drug may be delayed or not obtained, which could significantly harm our business.

Risks Related to the Commercialization of Our Drug Candidates

Even if any of our drug candidates receives marketing approval, it may fail to achieve the degree of market acceptance by physicians, patients, third-party payors and others in the medical community necessary for commercial success.

If any of our drug candidates receives marketing approval, it may nonetheless fail to gain sufficient market acceptance by physicians, patients, third-party payors and others in the medical community. If our drug candidates do not achieve an adequate level of acceptance, we may not generate significant revenue from drug sales and we may not become profitable. The degree of market acceptance of our drug candidates, if approved for commercial sale, will depend on a number of factors, including:

- the efficacy and potential advantages compared to alternative treatments;
- our ability to offer our drugs for sale at competitive prices;
- the convenience and ease of administration compared to alternative treatments;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the strength of marketing and distribution support;
- the availability of third-party coverage and adequate reimbursement;
- the prevalence and severity of any side effects; and
- any restrictions on the use of our drugs together with other medications.

If we are unable to establish sales, marketing and distribution capabilities for our drug candidates, we may not be successful in commercializing those drug candidates if and when they are approved.

We do not have a sales or marketing infrastructure and have no experience in the sale, marketing or distribution of pharmaceutical drugs. To achieve commercial success for any drug candidate for which we may obtain marketing approval, we will need to establish a sales and marketing organization to market or co-promote such drugs. There are risks involved with establishing our own sales, marketing and distribution capabilities. For example, recruiting and training a sales force is expensive and time consuming and could delay any product launch. If the commercial launch of a drug candidate for which we recruit a sales force and establish marketing capabilities is delayed or does not occur for any reason, we would have prematurely or unnecessarily incurred these commercialization expenses. This may be costly, and our investment would be lost if we cannot retain or reposition our sales and marketing personnel.

Factors that may inhibit our efforts to commercialize our drugs on our own include:

- our inability to recruit, train and retain adequate numbers of effective sales and marketing personnel;
- the inability of sales personnel to obtain access to physicians or persuade adequate numbers of physicians to prescribe any future drugs;
- the lack of complementary drugs to be offered by sales personnel, which may put us at a competitive disadvantage relative to companies with more products; and
- unforeseen costs and expenses associated with creating an independent sales and marketing organization.

If we are unable to establish our own sales, marketing and distribution capabilities and enter into arrangements with third parties to perform these services, our revenue and our profitability, if any, are likely to be lower than if we were to sell, market and distribute any drugs that we develop ourselves. In addition, we may not be successful in entering into arrangements with third parties to sell, market and distribute our drug candidates or may be unable to do so on terms that are favorable to us. We likely will have little control over such third parties, and any of them may fail to devote the necessary resources and attention to sell and market our drugs effectively. If we do not establish sales, marketing and

distribution capabilities successfully, either on our own or in collaboration with third parties, we will not be successful in commercializing our drug candidates.

We face substantial competition, which may result in others discovering, developing or commercializing drugs before or more successfully than we do.

The development and commercialization of new drugs is highly competitive. We face competition with respect to our current drug candidates, and we will face competition with respect to any drug candidates that we may seek to develop or commercialize in the future, from major pharmaceutical companies, specialty pharmaceutical companies, biotechnology companies, academic institutions, governmental agencies and public and private research institutions. Should any competitors' drug candidates receive regulatory or marketing approval prior to ours, they may establish a strong market position and be difficult to displace or diminish the need for our drug candidates.

The key competitive factors affecting the success of all of our drug candidates, if approved, are likely to be their safety, efficacy, convenience, price, the level of generic competition and the availability of coverage and reimbursement from government and other third-party payors. As described above under "Business—Competition," we expect that our drug candidates will compete with approved therapies and those currently in development by other companies. To the extent that competitive drugs or drug candidates developed by others are successful in treating our target indications, it could reduce the market opportunity for our drug candidates.

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 and biotechnology 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 and establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

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

In addition, because we have no patents with respect to our glycomimetics platform, our competitors may use our methods, or acquire similar expertise, in order to develop glycomimetic drug candidates and progress these drug candidates through clinical development and commercialization, which could impair our ability to successfully commercialize our drug candidates or otherwise limit our commercial opportunities.

Even if we or our collaborators are able to commercialize any of our drug candidates, the drugs may become subject to unfavorable pricing regulations or third-party coverage and reimbursement policies.

Our and our collaborators' ability to commercialize any of our drug candidates successfully will depend, in part, on the extent to which coverage and adequate reimbursement for these drugs and related treatments will be available from government payor programs at the federal and state levels authorities, including Medicare and Medicaid, private health insurers, managed care plans and other organizations. Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which medications they will pay for and establish reimbursement levels. A primary trend in the U.S. healthcare industry and elsewhere is cost containment. Government authorities and third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications. Increasingly, third-party payors are requiring that drug companies provide them with predetermined discounts from list prices and are challenging the prices charged for drugs. Coverage and reimbursement may not be available for any drug that we or our collaborators commercialize and, even if these are available, the level of reimbursement may not be satisfactory. Inadequate reimbursement levels may adversely affect the demand for, or the price of, any drug candidate for which we or our collaborators obtain marketing approval. Obtaining and maintaining

adequate reimbursement for our drugs may be difficult. We may be required to conduct expensive pharmacoeconomic studies to justify coverage and reimbursement or the level of reimbursement relative to other therapies. If coverage and adequate reimbursement are not available or reimbursement is available only to limited levels, we or our collaborators may not be able to successfully commercialize any drug candidates for which marketing approval is obtained.

There may be significant delays in obtaining coverage and reimbursement for newly approved drugs, and coverage may be more limited than the indications for which the drug is approved by the FDA or similar regulatory authorities outside the United States. 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 not be sufficient to cover our 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. Net prices for drugs may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of drugs from countries where they may be sold at lower prices than in the United States. Third-party payors often rely upon Medicare coverage policy and payment limitations in setting their own reimbursement policies. However, one payor's determination to provide coverage for a drug does not assure that other payors will also provide coverage for the drug. Our or our collaborators' inability to promptly obtain coverage and adequate reimbursement rates from both government-funded and private payors for any approved drugs that we develop could adversely affect our operating results, our ability to raise capital needed to commercialize drugs and our overall financial condition.

The regulations that govern marketing approvals, pricing, coverage and reimbursement for new drugs vary widely from country to country. Current and future legislation may significantly change the approval requirements in ways that could involve additional costs and cause delays in obtaining approvals. 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 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 or our collaborators might obtain marketing approval for a drug in a particular country, but then be subject to price regulations that delay commercial launch of the drug, possibly for lengthy time periods, and negatively impact our ability to generate revenue from the sale of the drug in that country. Adverse pricing limitations may hinder our ability to recoup our investment in one or more drug candidates, even if our drug candidates obtain marketing approval.

There can be no assurance that our drug candidates, if they are approved for sale in the United States or in other countries, will be considered medically reasonable and necessary for a specific indication, that they will be considered cost-effective by third-party payors, that coverage or an adequate level of reimbursement will be available or that third-party payors' reimbursement policies will not adversely affect our ability to sell our drug candidates profitably if they are approved for sale.

Product liability lawsuits against us could cause us to incur substantial liabilities and to limit commercialization of any drugs that we may develop.

We face an inherent risk of product liability exposure related to the testing of our drug candidates in human clinical trials, and will face an even greater risk if we commercially sell any drugs that we may develop. If we cannot successfully defend ourselves against claims that our drug candidates or drugs caused injuries, we will incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any drug candidates or drugs that we may develop;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial participants;
- significant costs to defend the related litigation;
- substantial monetary awards paid to trial participants or patients;
- loss of revenue;
- reduced resources of our management to pursue our business strategy; and

- the inability to commercialize any drugs that we may develop.

We carry clinical trial insurance coverage in an amount that we believe is sufficient in relation to our clinical trials being conducted in the United States and in foreign countries where we have or plan to have sites as part of our clinical trials for uproleselan. The use of our drug candidates in clinical trials may result in liability claims for which our current insurance would not be adequate to cover all liabilities that we may incur. In addition, we may need to increase our insurance coverage as we expand our clinical trials or if we commence commercialization of our drug candidates. Insurance coverage is increasingly expensive. We may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise.

Risks Related to Our Intellectual Property

If we are unable to obtain and maintain patent protection for our drug candidates, or if the scope of the patent protection obtained is not sufficiently broad, our competitors could develop and commercialize drug candidates similar or identical to ours, and our ability to successfully commercialize our drug candidates may be impaired.

Our success depends in large part on our ability to obtain and maintain patent protection in the United States and other countries with respect to our drug candidates. We seek to protect our proprietary position by filing patent applications in the United States and abroad related to our drug candidates.

The patent prosecution process is expensive and time consuming, and we may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. 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. We may not have the right to control the preparation, filing and prosecution of patent applications, or to maintain the rights to patents licensed to third parties. Therefore, these patents and applications may not be prosecuted and enforced in a manner consistent with the best interests of our business.

The patent position of biotechnology and pharmaceutical companies generally is highly uncertain, involves complex legal and factual questions and has in recent years been the subject of much litigation. In addition, the laws of foreign countries may not protect our rights to the same extent as the laws of the United States, or vice versa. For example, European patent law restricts the patentability of methods of treatment of the human body more than U.S. law does. Publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing or, in some cases, not at all. Therefore, we cannot know with certainty whether we were the first to make the inventions claimed in our patents or pending patent applications, or that we were the first to file for patent protection of such inventions. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights are highly uncertain. Our pending and future patent applications may not result in patents being issued that protect our drug candidates, in whole or in part, or which effectively prevent others from commercializing competitive drug candidates. Changes in either the patent laws or interpretation of the patent laws in the United States and other countries may diminish the value of our patents or narrow the scope of our patent protection.

Recent patent reform legislation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents. On September 16, 2011, the Leahy-Smith America Invents Act, or the Leahy-Smith Act, was signed into law. The Leahy-Smith Act includes a number of significant changes to U.S. patent law. These include provisions that affect the way patent applications are prosecuted and may also affect patent litigation. The U.S. Patent and Trademark Office recently developed new regulations and procedures to govern administration of the Leahy-Smith Act, and many of the substantive changes to patent law associated with the Leahy-Smith Act, and in particular, the first to file provisions, only became effective on March 16, 2013. Accordingly, it is not clear what, if any, impact the Leahy-Smith Act will have on the operation of our business. However, the Leahy-Smith Act 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 a material adverse effect on our business and financial condition.

Moreover, we may be subject to a third-party preissuance submission of prior art to the U.S. Patent and Trademark Office, or become involved in opposition, derivation, reexamination, *inter partes* review, post-grant review or interference proceedings challenging our patent rights or the patent rights of others. An adverse determination in any such submission, proceeding or litigation could reduce the scope of, or invalidate, our patent rights, allow third parties to commercialize our drug candidates and compete directly with us, without payment to us, or result in our inability to

manufacture or commercialize drugs without infringing third-party patent rights. 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 drug candidates.

Even if our patent applications issue as patents, they may not issue in a form that will provide us with any meaningful protection, prevent competitors from competing with us or otherwise provide us with any competitive advantage. Our competitors may be able to circumvent our patents by developing similar or alternative drug candidates in a non-infringing manner.

In addition, the issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability, and our patents may be challenged in the courts or patent offices in the United States and abroad. Such challenges may result in loss of exclusivity or freedom to operate or in patent claims being narrowed, invalidated or held unenforceable, in whole or in part, which could limit our ability to stop others from using or commercializing similar or identical drug candidates, or limit the duration of the patent protection of our drug candidates. Given the amount of time required for the development, testing and regulatory review of new drug candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. As a result, our patent portfolio may not provide us with sufficient rights to exclude others from commercializing drugs similar or identical to ours.

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

Competitors may infringe our issued patents or other intellectual property. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time consuming. Any claims we assert against perceived infringers could provoke these parties to assert counterclaims against us alleging that we infringe their patents. In addition, in a patent infringement proceeding, a court may decide that a patent of ours is invalid or unenforceable, in whole or in part, construe the patent's claims narrowly or refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology. An adverse result in any litigation proceeding could put one or more of our patents at risk of being invalidated or interpreted narrowly.

We may need to license intellectual property from third parties, and such licenses may not be available or may not be available on commercially reasonable terms.

A third party may hold intellectual property, including patent, rights that are important or necessary to the development of our drug candidates. It may be necessary for us to use patented or proprietary technology of third parties to commercialize our drug candidates, in which case we would be required to obtain a license from these third parties on commercially reasonable terms, or our business could be harmed, possibly materially.

Third parties may initiate legal proceedings alleging that we are infringing their intellectual property rights, the outcome of which would be uncertain and could have a material adverse effect on the success of our business.

Our commercial success depends upon our ability, and the ability of our collaborators, to develop, manufacture, market and sell our drug candidates without infringing the proprietary rights of third parties. There is considerable intellectual property litigation in the biotechnology and pharmaceutical industries. We may become party to, or threatened with, future adversarial proceedings or litigation regarding intellectual property rights with respect to our drug candidates, including interference or derivation proceedings before the U.S. Patent and Trademark Office. Third parties may assert infringement claims against us based on existing patents or patents that may be granted in the future.

If we are found to infringe a third party's intellectual property rights, we could be required to obtain a license from such third party to continue developing and marketing our drug candidates. However, we may not be able to obtain any required license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. We could be forced, including by court order, to cease commercializing the infringing drug. In addition, we could be found liable for monetary damages, including treble damages and attorneys' fees if we are found to have willfully infringed a patent. A finding of infringement could prevent us from commercializing our drug candidates or force us to cease some of our business

operations. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar negative impact on our business.

We may be subject to claims by third parties asserting that we or our employees have misappropriated their intellectual property, or claiming ownership of what we regard as our own intellectual property.

Many of our employees were previously employed at universities or other biotechnology or pharmaceutical companies. Although we try to ensure that our employees do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that these employees or we have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such employee's former employer. Litigation may be necessary to defend against these claims.

In addition, while it is our policy to require our employees and contractors who may be involved in the 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 develops intellectual property that we regard as our own. Our and their assignment agreements may not be self-executing or may be breached, and we may be forced to bring claims against third parties, or defend claims they may bring against us, to determine the ownership of what we regard as our intellectual property.

If we fail in prosecuting or defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Even if we are successful in prosecuting or defending against such claims, litigation could result in substantial costs and be a distraction to management.

Intellectual property litigation could cause us to spend substantial resources and distract our personnel from their normal responsibilities.

Even if resolved in our favor, litigation or other legal proceedings relating to intellectual property claims may cause us to incur significant expenses, and could distract our technical and management personnel from their normal responsibilities. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments, and if securities analysts or investors perceive these results to be negative it could have a substantial adverse effect on the price of our common stock. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing or distribution activities. We may not have sufficient financial or other resources to conduct such litigation or proceedings adequately. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could compromise our ability to compete in the marketplace.

If we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed.

In addition to seeking patents for our drug candidates, we also rely on trade secrets, including unpatented know-how, technology and other proprietary information, to maintain our competitive position. For example, our platform is based on trade secrets that consist largely of expertise in carbohydrate chemistry and knowledge of carbohydrate biology. We do not believe that we can obtain patent protection for our platform. Thus, our competitors may use our methods, or acquire similar expertise, in order to develop glycomimetic drug candidates and progress these drug candidates through clinical development and commercialization, which could impair our ability to successfully commercialize our drug candidates.

We seek to protect our trade secrets, in part, by entering into non-disclosure and confidentiality agreements with parties who have access to them, such as our employees, corporate collaborators, outside scientific collaborators, contract manufacturers, consultants, advisors and other third parties. We also enter into confidentiality and invention or patent assignment agreements with our employees and consultants. Despite these efforts, any of these parties may breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. 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 inside and outside the United States are less willing or unwilling to protect trade secrets. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent them, or those to whom they

communicate it, 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, our competitive position would be harmed.

Risks Related to Regulatory Approval of Our Drug Candidates and Other Legal Compliance Matters

If we or our collaborators are not able to obtain, or if there are delays in obtaining, required regulatory approvals, we or they will not be able to commercialize our drug candidates and our ability to generate revenue will be materially impaired.

Our drug candidates and the activities associated with their development and commercialization, including their design, testing, manufacture, safety, efficacy, recordkeeping, labeling, storage, approval, advertising, promotion, sale and distribution, are subject to comprehensive regulation by the FDA and other regulatory agencies in the United States and by the European Medicines Agency, or EMA, and similar regulatory authorities outside the United States. Failure to obtain marketing approval for a drug candidate will prevent us or our collaborators from commercializing the drug candidate. We have not received approval to market any of our drug candidates from regulatory authorities in any jurisdiction. We have only limited experience in filing and supporting the applications necessary to gain marketing approvals and expect to rely on third-party CROs to assist us in this process. Securing marketing approval requires the submission of extensive preclinical and clinical data and supporting information to regulatory authorities for each therapeutic indication to establish the drug candidate's safety and efficacy. Securing marketing approval also requires the submission of information about the product manufacturing process to, and inspection of manufacturing facilities by, applicable regulatory authorities. Our drug candidates may not be effective, may be only moderately effective or may prove to have undesirable or unintended side effects, toxicities or other characteristics that may preclude our ability to obtain marketing approval or prevent or limit commercial use. If any of our drug candidates receives marketing approval, the accompanying label may limit the approved use of our drug, which could limit sales of the drug.

The process of obtaining marketing approvals, both in the United States and abroad, is expensive and may take many years if additional clinical trials are required, if approval is obtained at all, and can vary substantially based upon a variety of factors, including the type, complexity and novelty of the drug candidates involved. Changes in marketing approval policies during the development period, changes in or the enactment of additional statutes or regulations or changes in regulatory review for each submitted drug application may cause delays in the approval or rejection of an application. Regulatory authorities have substantial discretion in the approval process and may refuse to accept any application, or may decide that our data are insufficient for approval and require additional preclinical, clinical or other studies. In addition, varying interpretations of the data obtained from preclinical and clinical testing could delay, limit or prevent marketing approval of a drug candidate. Any marketing approval we ultimately obtain may be limited or subject to restrictions or post-approval commitments that render the approved drug not commercially viable.

If we experience delays in obtaining approval or if we fail to obtain approval of our drug candidates, the commercial prospects for our drug candidates may be harmed and our ability to generate revenue will be materially impaired.

Even though we have obtained orphan drug designation for several of our drug candidates, we may not be able to obtain orphan drug marketing exclusivity for these or any of our other drug candidates.

Regulatory authorities in some jurisdictions, including the United States and the European Union, or EU, may designate drugs for relatively small patient populations as orphan drugs. Under the Orphan Drug Act, the FDA may designate a drug as an orphan drug if it is 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 have obtained orphan drug designation from the FDA for uproleselan for the treatment of AML, as well as for rivipansel for the treatment of SCD and GMI-1359 for the treatment of osteosarcoma. However, in order to obtain marketing exclusivity in a particular jurisdiction, we must receive the first marketing approval of the drug for its intended indication. In addition, the orphan drug designation does not convey any advantage in, or shorten the duration of, the regulatory review or approval process.

Generally, if a drug with an orphan drug designation subsequently receives the first marketing approval for the indication for which it has such designation, the drug is entitled to a period of marketing exclusivity, which precludes the FDA or the EMA from approving another marketing application for the same drug for the same indication for that time period. The applicable period is seven years in the United States and 10 years in the EU. The EU exclusivity period can be reduced to six years if a drug no longer meets the criteria for orphan drug designation or if the drug is sufficiently

profitable so that market exclusivity is no longer justified. Orphan drug exclusivity may be lost if the FDA or the EMA determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantity of the drug to meet the needs of patients with the rare disease or condition.

Even if we obtain orphan drug exclusivity for a drug candidate, that exclusivity may not effectively protect the candidate from competition because different drugs can be approved for the same condition. Even after an orphan drug is approved, the FDA can subsequently approve another drug with the same active moiety for the same condition if the FDA concludes that the later drug is clinically superior in that it is shown to be safer, more effective or makes a major contribution to patient care.

The FDA fast track designation and additional breakthrough therapy designation for uproleselan may not actually lead to a faster development or regulatory review or approval process.

If a drug is intended for the treatment of a serious or life-threatening disease or condition and the drug demonstrates the potential to address unmet medical needs for this disease or condition, the drug sponsor may apply for the FDA fast track designation. If fast track designation is obtained, the FDA may initiate review of sections of a new drug application, or NDA, before the application is complete. This “rolling review” is available if the applicant provides, and the FDA approves, a schedule for submission of the individual sections of the application.

Although we have obtained a fast track designation from the FDA for uproleselan to treat AML and breakthrough therapy designation for uproleselan to treat AML, we may not experience a faster development process, review or approval compared to conventional FDA procedures. Our fast track designation may be withdrawn by the FDA if it believes that the designation is no longer supported by data from our clinical development programs. Our fast track designation does not guarantee that we will qualify for or be able to take advantage of the expedited review procedures or that we will ultimately obtain regulatory approval of uproleselan.

Failure to obtain marketing approval in international jurisdictions would prevent our drug candidates from being marketed abroad.

In order to market and sell our drugs in the EU and any other jurisdictions, we or our collaborators must obtain separate marketing approvals and comply with numerous and varying regulatory requirements. The approval procedure varies among countries and can involve additional testing. The time required to obtain approval may differ substantially from that required to obtain the FDA approval. The regulatory approval process outside the United States generally includes all of the risks associated with obtaining the FDA approval. In addition, in many countries outside the United States, it is required that the drug be approved for reimbursement before it can be approved for sale in that country. We or our collaborators may not obtain approvals from regulatory authorities outside the United States on a timely basis, if at all. Approval by the FDA does not ensure approval by regulatory authorities in other countries or jurisdictions, and approval by one regulatory authority outside the United States does not ensure approval by regulatory authorities in other countries or jurisdictions or by the FDA. However, failure to obtain approval in one jurisdiction may impact our ability to obtain approval elsewhere. We or our collaborators may not be able to file for marketing approvals and may not receive necessary approvals to commercialize our drugs in any market.

A variety of risks associated with developing and marketing our drug candidates internationally could hurt our business.

We or our collaborators may seek regulatory approval for uproleselan and our other drug candidates outside of the United States and, accordingly, we expect that we will be subject to additional risks related to operating in foreign countries if we obtain the necessary approvals, including:

- differing regulatory requirements in foreign countries;
- the potential for so-called parallel importing, which is what happens when a local seller, faced with high or higher local prices, opts to import goods from a foreign market with low or lower prices rather than buying them locally;
- unexpected changes in tariffs, trade barriers, price and exchange controls and other regulatory requirements;

- economic weakness, including inflation or political instability in particular foreign economies and markets;
- compliance with tax, employment, immigration and labor laws for employees living or traveling abroad;
- foreign taxes, including withholding of payroll taxes;
- foreign currency fluctuations, which could result in increased operating expenses and reduced revenues, and other obligations related to doing business in another country;
- difficulties staffing and managing foreign operations;
- workforce uncertainty in countries where labor unrest is more common than in the United States;
- potential liability under the Foreign Corrupt Practices Act or comparable foreign regulations;
- challenges enforcing our contractual and intellectual property rights, especially in foreign countries that do not respect and protect intellectual property rights to the same extent as the United States;
- production shortages resulting from any events affecting raw material supply or manufacturing capabilities abroad; and
- business interruptions resulting from pandemic, epidemic or disease outbreaks or geo-political actions, including war and terrorism.

Pursuant to the terms of our collaboration and license agreement, Apollomics is responsible for the clinical development and commercialization of uproleselan and GMI-1687 in Greater China. The recent outbreak of the coronavirus, first identified in Wuhan, Hubei Province, China, could have a material adverse effect on Apollomics' ability to develop these drug candidates in a timely manner due to disruptions in the region, travel restrictions, temporary closures of businesses and suspension of services and supplies. Any such delay or disruptions in clinical development could result in the delay of any potential milestone payments to us under the license and collaboration agreement, which could have a material adverse effect on our financial position and results of operations.

Any drug candidate for which we obtain marketing approval could be subject to post-marketing restrictions or recall or withdrawal from the market, and we may therefore be subject to penalties if we fail to comply with regulatory requirements or if we experience unanticipated problems with our drug candidates, when and if any of them are approved.

Any drug candidate for which we obtain marketing approval, along with manufacturing processes, post-approval clinical data, labeling, advertising and promotional activities for such drug candidate, will be subject to continual requirements of and review by the FDA and other regulatory authorities. These requirements include submissions of safety and other post-marketing information and reports, registration and listing requirements, cGMP requirements relating to manufacturing, quality control, quality assurance and corresponding maintenance of records and documents, requirements regarding the distribution of samples to physicians and recordkeeping. Even if marketing approval of a drug candidate is granted, the approval may be subject to limitations on the indicated uses for which the drug may be marketed or to the conditions of approval, including the requirement to implement a risk evaluation and mitigation strategy. If any of our drug candidates receives marketing approval, the accompanying label may limit the approved use of our drug, which could limit its sales.

The FDA may also impose requirements for costly post-marketing studies or clinical trials and surveillance to monitor the safety or efficacy of the drug. The FDA closely regulates the post-approval marketing and promotion of drugs to ensure drugs are marketed only for the approved indications and in accordance with the provisions of the approved labeling. The FDA imposes stringent restrictions on manufacturers' communications regarding off-label use, and if we do not market our drugs for their approved indications, we may be subject to enforcement action for off-label marketing. Violations of the Federal Food, Drug, and Cosmetic Act relating to the promotion of prescription drugs may lead to investigations alleging violations of federal and state healthcare fraud and abuse laws, as well as state consumer protection laws.

In addition, later discovery of previously unknown adverse events or other problems with our drugs, manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may have negative consequences, including:

- restrictions on such drugs, manufacturers or manufacturing processes;
- restrictions on the labeling or marketing of a drug;
- restrictions on product distribution or use;
- requirements to conduct post-marketing studies or clinical trials;
- warning letters;
- recall or withdrawal of the drugs from the market;
- refusal to approve pending applications or supplements to approved applications that we submit;
- clinical holds;
- fines, restitution or disgorgement of revenue or profit;
- suspension or withdrawal of marketing approvals;
- refusal to permit the import or export of our drugs;
- product seizure; or
- injunctions or the imposition of civil or criminal penalties.

Non-compliance with the EU requirements regarding safety monitoring or pharmacovigilance, and with requirements related to the development of drugs for the pediatric population, can also result in significant financial penalties. Similarly, failure to comply with the EU's requirements regarding the protection of personal information can also lead to significant penalties and sanctions.

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

Healthcare providers and third-party payors in the United States and elsewhere will play a primary role in the recommendation and prescription of any drug candidates for which we obtain marketing approval. Our current and future arrangements with third-party payors and customers 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, which may constrain the business or financial arrangements and relationships through which we conduct clinical research, sell, market and distribute any drugs for which we obtain marketing approval. In addition, we may be subject to transparency laws and patient data privacy and security regulation by the U.S. federal and state governments and by governments in foreign jurisdictions in which we conduct our business. The applicable federal, state and foreign healthcare laws and regulations that may affect our ability to operate include:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made under federal healthcare programs, such as Medicare and Medicaid;
- federal civil and criminal false claims laws, including the federal False Claims Act, which impose criminal and civil penalties, including civil whistleblower or qui tam actions, and civil monetary penalty laws that prohibit individuals or entities for knowingly presenting, or causing to be presented, to the federal government, including the Medicare and Medicaid programs, claims for payment that are false or fraudulent

or making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government;

- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which imposes criminal and civil liability for executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and their respective implementing regulations, which impose obligations on covered healthcare providers, health plans, and healthcare clearinghouses, as well as their business associates that create, receive, maintain or transmit individually identifiable health information for or on behalf of a covered entity, with respect to safeguarding the privacy, security and transmission of individually identifiable health information;
- the federal Open Payments program, pursuant to the Physician Payments Sunshine Act, which requires manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program, with specific exceptions, to report annually to the Centers for Medicare & Medicaid Services, or CMS, information related to "payments or other transfers of value" made to physicians, which is defined to include doctors, dentists, optometrists, podiatrists and chiropractors, and teaching hospitals and applicable manufacturers and applicable group purchasing organizations to report annually to CMS ownership and investment interests held by the physicians and their immediate family members, with disclosure of such information to be made by CMS on a publicly available website. Beginning in 2022, applicable manufacturers also will be required to report such information regarding payments and transfers of value provided, as well as ownership and investment interests held, during the previous year to physician assistants, nurse practitioners, clinical nurse specialists, certified nurse anesthetists and certified nurse midwives; and
- analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws, which may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers; state and foreign laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government or otherwise restrict payments that may be made to healthcare providers; state and foreign laws that require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures; state and local laws requiring the registration of pharmaceutical sales representatives; and state and foreign laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Efforts to ensure that our business arrangements with third parties will comply with applicable healthcare laws and regulations 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 and regulations. If our operations are found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, including, without limitation, damages, fines, individual imprisonment, 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, contractual damages, reputational harm, diminished profits and future earnings, disgorgement, exclusion from participation in government healthcare programs, such as Medicare and Medicaid, 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 healthcare providers or entities with whom we expect to do business, including our collaborators, is found not to be in compliance with applicable laws, it may be subject to criminal, civil or administrative sanctions, including exclusions from participation in government healthcare programs, which could also materially affect our business.

Recently enacted and future legislation may increase the difficulty and cost for us to obtain marketing approval of and commercialize our drug candidates and affect the prices we may obtain.

In the United States and some foreign jurisdictions, there have been a number of legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay marketing approval of our drug candidates, restrict or regulate post-approval activities and affect our ability to profitably sell any drug candidates for which we obtain marketing approval.

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, which include major legislative initiatives to reduce the cost of care through changes in the healthcare system, including limits on the pricing, coverage, and reimbursement of pharmaceutical and biopharmaceutical products, especially under government-funded health care programs, and increased governmental control of drug. In March 2010, President Obama signed into law the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, or collectively PPACA, a sweeping law intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, improve quality of care, enhance remedies against fraud and abuse, add new transparency requirements for the healthcare and health insurance industries, impose new taxes and fees on the health industry and impose additional health policy reforms.

Among the provisions of PPACA of importance to our business and potential drug candidates are:

- an annual, nondeductible fee on any entity that manufactures or imports specified branded prescription drugs and biologic agents, apportioned among these entities according to their market share in certain government healthcare programs;
- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program to 23.1% and 13.0% of the average manufacturer price for branded and generic drugs, respectively;
- expansion of healthcare fraud and abuse laws, including the False Claims Act and the Anti-Kickback Statute, new government investigative powers and enhanced penalties for non-compliance;
- a new Medicare Part D coverage gap discount program, in which manufacturers must now agree to offer 70% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for a manufacturer's outpatient drugs to be covered under Medicare Part D;
- extension of a manufacturer's 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 a manufacturer's Medicaid rebate liability;
- expansion of the entities eligible for discounts under the Public Health Service pharmaceutical pricing program;
- the new requirements under the federal Open Payments program and its implementing regulations;
- a new requirement to annually report drug samples that manufacturers and distributors provide to physicians; and
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research.

There remain judicial and Congressional challenges to certain aspects of PPACA, as well as efforts by the Trump administration to repeal or replace certain aspects of the PPACA. Since January 2017, President Trump has signed two Executive Orders and other directives designed to delay the implementation of certain provisions of the PPACA or otherwise circumvent some of the requirements for health insurance mandated by the PPACA. Concurrently, Congress

has considered legislation that would repeal or repeal and replace all or part of the PPACA. While Congress has not passed comprehensive repeal legislation, several bills affecting the implementation of certain taxes under the ACA have been signed into law. The Tax Cuts and Jobs Act of 2017, or Tax Act, included a provision which repealed, effective January 1, 2019, the tax-based shared responsibility payment imposed by the PPACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate". In addition, the 2020 federal spending package permanently eliminates, effective January 1, 2020, the ACA-mandated "Cadillac" tax on high-cost employer-sponsored health coverage and medical device tax and, effective January 1, 2021, also eliminates the health insurer tax. On December 14, 2018, a Texas U.S. District Court Judge ruled that the PPACA is unconstitutional in its entirety because the "individual mandate" was repealed by Congress as part of the Tax Act. Additionally, on December 18, 2019, the U.S. Court of Appeals for the 5th Circuit upheld the District Court ruling that the individual mandate was unconstitutional and remanded the case back to the District Court to determine whether the remaining provisions of the PPACA are invalid as well. It is unclear how this decision, future decisions, subsequent appeals, and other efforts to repeal and replace the PPACA will impact the PPACA and our business.

In addition, other legislative changes have been proposed and adopted since PPACA was enacted. These changes include aggregate reductions to Medicare payments to providers of up to 2% per fiscal year, which began in 2013, pursuant to the Budget Control Act of 2011. On March 1, 2013, the President signed an executive order implementing the 2% Medicare payment reductions, and on April 1, 2013, these reductions went into effect. Pursuant to the Bipartisan Budget Act of 2015, these reductions will stay in effect through 2029, unless additional Congressional action is taken. In January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, which, among other things, reduced Medicare payments to several providers and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. These new laws may result in additional reductions in Medicare and other healthcare funding, which could have a material adverse effect on customers for our drugs, if approved, and, accordingly, our financial operations.

Current and future healthcare reform measures may result in more rigorous coverage criteria and in additional downward pressure on the price that we receive for any approved drug. Any reduction in reimbursement from Medicare or other government-funded programs may result in a similar reduction in payments from private payors. There has been increasing legislative and enforcement interest in the United States with respect to specialty drug pricing practices. Specifically, there have been several recent U.S. Congressional inquiries and proposed bills designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drugs. At the federal level, the Trump administration's budget proposal for fiscal year 2020 contained further drug price control measures that could be enacted during the budget process or in other future legislation. Further, the Trump administration released a "Blueprint" to lower drug prices and reduce out of pocket costs of drugs that contains additional proposals to increase drug manufacturer competition, increase the negotiating power of certain federal healthcare programs, incentivize manufacturers to lower the list price of their products, and reduce the out of pocket costs of drug products paid by consumers. The Department of Health and Human Services, or HHS, has solicited feedback on some of these measures and has implemented others under its existing authority. While some of these and other measures may require additional authorization to become effective, Congress and the Trump administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. At the state level, legislatures are increasingly passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability or commercialize our drugs.

Legislative and regulatory proposals have been made to expand post-approval requirements and restrict sales and promotional activities for drugs. 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 drug 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-marketing testing and other requirements.

Governments outside the United States tend to impose strict price controls, which may adversely affect our revenue, if any.

In some countries, particularly in the EU, the pricing of prescription pharmaceuticals is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after the receipt of marketing approval for a drug. To obtain coverage and reimbursement or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost-effectiveness of our drug candidate to other available therapies. If reimbursement of our drugs is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our business could be harmed, possibly materially.

If we fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could harm our business.

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 operations involve the use of hazardous and flammable materials, including chemicals and biological materials. Our operations also produce hazardous waste products. We generally contract with third parties for the disposal of these materials and wastes. We cannot eliminate the risk of contamination or injury from these materials. In the event of contamination or injury resulting from our use of hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties for failure to comply with such laws and regulations.

Although we maintain workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous 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 in connection with our storage or disposal of biological, hazardous or radioactive materials.

In addition, we may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations. These current or future laws and regulations may impair our research, development or production efforts. Our failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions.

Risks Related to Employee Matters and Managing Our Growth

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 management, research and development, clinical, financial and business development expertise of Rachel King, our President and Chief Executive Officer; John Magnani, our Senior Vice President of Research and Chief Scientific Officer; Helen Thackray, our Senior Vice President of Clinical Development and Chief Medical Officer; Armand Girard, our Senior Vice President and Chief Business Officer; and Brian Hahn, our Senior Vice President of Finance and Chief Financial Officer, as well as the other members of our scientific and clinical teams. In particular, we are dependent upon Dr. Magnani for key expertise in carbohydrate chemistry and knowledge of carbohydrate biology with respect to our glycomimetics platform, and the loss of his services would materially impair our future drug discovery efforts. Although we have entered into employment agreements with our executive officers, each of them may currently terminate their employment with us at any time. We do not maintain "key person" insurance for any of our executives or employees.

Recruiting and retaining qualified scientific and clinical personnel and, if we progress the development of our drug pipeline toward scaling up for commercialization, sales and marketing personnel, will also be critical to our success. The loss of the services of our executive officers or other key employees could impede the achievement of our research, development and commercialization objectives and seriously harm our ability to successfully implement our business strategy. Furthermore, replacing executive officers and key employees may be difficult and may take an extended period of time because of the limited number of individuals in our industry with the breadth of skills and experience required to successfully develop, gain regulatory approval for and commercialize our drug candidates. Competition to hire qualified personnel in our industry is intense, and we may be unable to hire, train, retain or motivate these key personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar

personnel. We also experience competition for the hiring of scientific and clinical personnel from universities and research institutions. 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 have commitments under consulting or advisory contracts with other entities that may limit their availability to us. If we are unable to continue to attract and retain high quality personnel, our ability to pursue our growth strategy will be limited.

We expect to expand our development and regulatory capabilities and potentially implement sales, marketing and distribution capabilities, and as a result, we may encounter difficulties in managing our growth, which could disrupt our operations.

As our development progresses, we expect to experience significant growth in the number of our employees and the scope of our operations, particularly in the areas of research, drug development, regulatory affairs and, if any of our drug candidates receives marketing approval, sales, marketing and distribution. To manage our anticipated future growth, we must continue to implement and improve our managerial, operational and financial systems, expand our facilities and continue to recruit and train additional qualified personnel. Due to our limited financial resources and the limited experience of our management team in managing a company with such anticipated growth, we may not be able to effectively manage the expansion of our operations or recruit and train additional qualified personnel. The expansion of our operations may lead to significant costs and may divert our management and business development resources. Any inability to manage growth could delay the execution of our business plans or disrupt our operations.

Our employees and employees of our collaborators may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements.

We and our collaborators are exposed to the risk of employee fraud or other misconduct. Misconduct by employees could include intentional failures to comply with the FDA regulations, to provide accurate information to the FDA, to comply with manufacturing standards we have established, to comply with federal and state healthcare fraud and abuse laws and regulations, to report financial information or data accurately or to disclose unauthorized activities to us. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Employee misconduct could also involve the improper use of individually identifiable information, including, without limitation, information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. We have adopted a code of business conduct and ethics, but it is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent improper activities 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 be in compliance with such laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, or any such actions are instituted against any of our collaborators, those actions could have a significant impact on our business, including the imposition of significant fines or other sanctions and diminished royalties.

Risks Related to Ownership of Our Common Stock

An active trading market for our common stock may not be sustained.

Although our common stock is listed on The Nasdaq Global Market, we cannot assure you that an active trading market for our shares will be sustained. If an active market for our common stock is not sustained, it may be difficult for investors in our common stock to sell shares without depressing the market price for the shares or to sell the shares at all.

The trading price of our common stock has been and is likely to continue to be volatile.

Since our IPO in January 2014, our stock price has been volatile. The stock market in general and the market for biopharmaceutical companies in particular have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. As a result of this volatility, investors may not be able to sell their

common stock at or above the price paid for the shares. The market price for our common stock may be influenced by many factors, including:

- announcements relating to development, regulatory approvals or commercialization of our drug candidates;
- actual or anticipated variations in our operating results;
- changes in financial estimates by us or by any securities analysts who might cover our stock;
- conditions or trends in our industry;
- changes in laws or other regulatory actions affecting us or our industry, such as drug pricing and reimbursement;
- stock market price and volume fluctuations of comparable companies and, in particular, those that operate in the biopharmaceutical industry;
- announcements by us or our competitors of significant acquisitions, strategic partnerships or divestitures;
- announcements of investigations or regulatory scrutiny of our operations or lawsuits filed against us;
- capital commitments;
- investors' general perception of our company and our business;
- disputes concerning our intellectual property or other proprietary rights;
- recruitment or departure of key personnel; and
- sales of our common stock, including sales by our directors and officers or specific stockholders.

In addition, in the past, stockholders have initiated class action lawsuits against pharmaceutical and biotechnology companies following periods of volatility in the market prices of these companies' stock. Such litigation, if instituted against us, could cause us to incur substantial costs and divert management's attention and resources from our business.

If equity research analysts do not publish research or reports, or publish unfavorable research or reports, about us, our business or our market, our stock price and trading volume could decline.

The trading market for our common stock is influenced by the research and reports that equity research analysts publish about us and our business. We have only limited research coverage by equity research analysts. Equity research analysts may elect not to initiate or continue to provide research coverage of our common stock, and such lack of research coverage may adversely affect the market price of our common stock. Even if we have equity research analyst coverage, we will not have any control over the analysts or the content and opinions included in their reports. The price of our stock could decline if one or more equity research analysts downgrade our stock or issue other unfavorable commentary or research. If one or more equity research analysts ceases coverage of our company or fails to publish reports on us regularly, demand for our stock could decrease, which in turn could cause our stock price or trading volume to decline.

The issuance of additional stock in connection with financings, acquisitions, investments, our stock incentive plan, our employee stock purchase plan or otherwise will dilute all other stockholders.

Our certificate of incorporation authorizes us to issue up to 100,000,000 shares of common stock and up to 5,000,000 shares of preferred stock with such rights and preferences as may be determined by our board of directors. Subject to compliance with applicable rules and regulations, we may issue our shares of common stock or securities convertible into our common stock from time to time in connection with a financing, acquisition, investment, our stock incentive plan, our employee stock purchase plan or otherwise. Any such issuance could result in substantial dilution to our existing stockholders and cause the trading price of our common stock to decline.

If a substantial number of our total outstanding shares are sold into the market, or if the market perceives that such sales may occur, it could cause the market price of our common stock to drop significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock in the public market could occur at any time. If our stockholders sell, or if the market perceives that our stockholders intend to sell, substantial amounts of our common stock in the public market, the market price of our common stock could decline significantly. All of our outstanding shares of common stock are available for sale in the public market, subject only to the restrictions of Rule 144 under the Securities Act in the case of our affiliates.

In addition, we have filed registration statements on Form S-8 registering the issuance of shares of common stock subject to options or other equity awards issued or reserved for future issuance under our equity incentive plans. Shares registered under these registration statements are available for sale in the public market subject to vesting arrangements and exercise of options, as well as Rule 144 in the case of our affiliates.

Additionally, some of the holders of our common stock who acquired their shares of our stock prior to the IPO, or their transferees, have rights, subject to some conditions, to require us to file one or more registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders. If we were to register the resale of these shares, they could be freely sold in the public market. If these additional shares are sold, or if it is perceived that they will be sold, in the public market, the trading price of our common stock could decline.

Provisions in our corporate charter documents and under Delaware law may prevent or frustrate attempts by our stockholders to change our management and hinder efforts to acquire a controlling interest in us, and the market price of our common stock may be lower as a result.

There are provisions in our certificate of incorporation and bylaws that may make it difficult for a third party to acquire, or attempt to acquire, control of our company, even if a change in control was considered favorable by some or all of our stockholders. For example, our board of directors has the authority to issue up to 5,000,000 shares of preferred stock. The board of directors can fix the price, rights, preferences, privileges and restrictions of the preferred stock without any further vote or action by our stockholders. The issuance of shares of preferred stock may delay or prevent a change in control transaction. As a result, the market price of our common stock and the voting and other rights of our stockholders may be adversely affected. An issuance of shares of preferred stock may result in the loss of voting control to other stockholders.

Our charter documents also contain other provisions that could have an anti-takeover effect, including:

- only one of our three classes of directors is elected each year;
- stockholders are not entitled to remove directors other than by a 66 2/3% vote and only for cause;
- stockholders are not permitted to take actions by written consent;
- stockholders cannot call a special meeting of stockholders; and
- stockholders must give advance notice to nominate directors or submit proposals for consideration at stockholder meetings.

In addition, we are subject to the anti-takeover provisions of Section 203 of the Delaware General Corporation Law, which regulates corporate acquisitions by prohibiting Delaware corporations from engaging in specified business combinations with particular stockholders of those companies. These provisions could discourage potential acquisition proposals and could delay or prevent a change in control transaction. They could also have the effect of discouraging others from making tender offers for our common stock, including transactions that may be in your best interests. These provisions may also prevent changes in our management or limit the price that investors are willing to pay for our stock.

Our certificate of incorporation also provides that the Court of Chancery of the State of Delaware will be the exclusive forum for substantially all disputes between us and our stockholders.

Concentration of ownership of our common stock among our existing executive officers, directors and principal stockholders may prevent new investors from influencing significant corporate decisions.

Our executive officers, directors and current beneficial owners of 5% or more of our common stock and their respective affiliates beneficially own a majority of our common stock. Further, funds controlled by one investor, New Enterprise Associates, or NEA, beneficially own approximately 21% of our common stock. As a result, NEA is able to significantly influence matters requiring stockholder approval, including the election and removal of directors, any merger, consolidation, sale of all or substantially all of our assets or other significant corporate transactions. The interests of this group of stockholders may not coincide with our interests or the interests of other stockholders.

If we fail to maintain proper and effective internal controls, our ability to produce accurate financial statements on a timely basis could be impaired.

We are subject to the reporting requirements of the Securities Exchange Act of 1934, the Sarbanes-Oxley Act of 2002, the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 and the rules and regulations of The Nasdaq Global Market. The Sarbanes-Oxley Act requires, among other things, that we maintain effective disclosure controls and procedures and internal control over financial reporting and perform system and process evaluation and testing of our internal control over financial reporting to allow management to report on the effectiveness of our internal control over financial reporting, which must then be evaluated by our independent registered public accounting firm. This requires that we incur substantial additional professional fees and internal costs to expand our accounting and finance functions and that we expend significant management efforts.

We may in the future discover areas of our internal financial and accounting controls and procedures that need improvement. Our internal control over financial reporting will not prevent or detect all errors and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud will be detected.

If we are unable to maintain proper and effective internal controls in the future, we may not be able to produce timely and accurate financial statements, and we may conclude that our internal controls over financial reporting are not effective. If that were to happen, the market price of our stock could decline and we could be subject to sanctions or investigations by Nasdaq, the SEC or other regulatory authorities.

We do not anticipate paying any cash dividends on our common stock in the foreseeable future and our stock may not appreciate in value.

We have not declared or paid cash dividends on our common stock to date. We currently intend to retain our future earnings, if any, to fund the development and growth of our business. In addition, the terms of any future debt agreements may preclude us from paying dividends. There is no guarantee that shares of our common stock will appreciate in value or that the price at which our stockholders have purchased their shares will be able to be maintained.

We incur increased costs and demands upon management as a result of being a public company.

As a public company listed in the United States, we incur, and will continue to incur now that we have ceased to be an "emerging growth company," significant legal, accounting and other costs. These costs could negatively affect our financial results. In addition, changing laws, regulations and standards relating to corporate governance and public disclosure, including regulations implemented by the SEC and Nasdaq, may increase legal and financial compliance costs and make some activities more time-consuming. These laws, regulations and standards are subject to varying interpretations and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies.

We intend to invest resources to comply with evolving laws, regulations and standards, and this investment may result in increased general and administrative expenses and a diversion of management's time and attention from revenue-generating activities to compliance activities. If we do not comply with new laws, regulations and standards, regulatory authorities may initiate legal proceedings against us and our business may be harmed.

Failure to comply with these rules might also make it more difficult for us to obtain some types of insurance, including director and officer liability insurance, and we might be forced to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. The impact of these events could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors, on committees of our board of directors or as members of senior management.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our principal offices occupy approximately 42,000 square feet of leased office space in Rockville, Maryland, pursuant to a lease agreement that expires in October 2023. We believe that our properties are generally in good condition, well maintained, suitable and adequate to carry on our business. We believe our capital resources are sufficient to lease any additional facilities required to meet our expected growth needs.

ITEM 3. LEGAL PROCEEDINGS

From time to time, we are subject to litigation and claims arising in the ordinary course of business. We are not currently a party to any material legal proceedings and we are not aware of any pending or threatened legal proceeding against us that we believe could have a material adverse effect on our business, operating results, cash flows or financial condition.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information for Common Stock

Our common stock is listed on The Nasdaq Global Market under the symbol "GLYC."

Dividend Policy

We have never declared or paid any dividends on our common stock. We anticipate that we will retain all of our future earnings, if any, for use in the operation and expansion of our business and do not anticipate paying cash dividends in the foreseeable future.

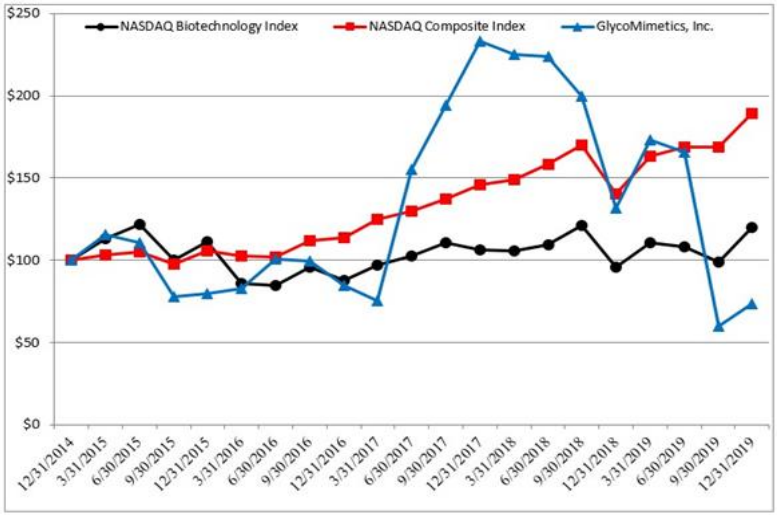
Stockholders

As of February 26, 2020, we had 43,582,979 shares of common stock outstanding held by 25 holders of record. 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. This number of holders of record also does not include stockholders whose shares may be held in trust by other entities.

Performance Graph

The following graph compares the five-year cumulative total return of our common stock with the Nasdaq Composite Index (U.S.) and the Nasdaq Biotechnology Index. The comparison assumes a $100 investment on December 31, 2014 in our common stock, the stocks comprising the Nasdaq Composite Index, and the stocks comprising the Nasdaq Biotechnology Index, and assumes reinvestment of the full amount of all dividends, if any. Historical stockholder return is not necessarily indicative of the performance to be expected for any future periods.

Comparison of Cumulative Total Return
Among GlycoMimetics, Inc., the Nasdaq Composite Index and the Nasdaq Biotechnology Index



The performance graph shall not be deemed to be incorporated by reference by means of any general statement incorporating by reference this Form 10-K into any filing under the Securities Act of 1933, as amended or the Exchange Act, except to the extent that we specifically incorporate such information by reference, and shall not otherwise be deemed filed under such acts.

Recent Sales of Unregistered Securities

None.

Purchases of Equity Securities by the Issuer and Affiliated Parties

None.

ITEM 6. SELECTED FINANCIAL DATA

The following selected financial data as of and for the years ended December 31, 2019, 2018, 2017, 2016 and 2015 are derived from our audited financial statements, which have been audited by Ernst & Young LLP, independent registered public accounting firm. The statement of operations data for the years ended December 31, 2016 and 2015, and the balance sheet data as of December 31, 2017, 2016 and 2015, have been derived from our audited financial statements which are not included herein. Our historical results are not necessarily indicative of the results to be expected in the future. The selected financial data should be read together with Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations" and in conjunction with the financial statements, related notes, and other financial information included elsewhere in this Annual Report.

	Year Ended December 31,				
(in thousands, except share and per share data)	2019	2018	2017	2016	2015
Statement of Operations Data:					
Revenue	$ —	$ —	$ —	$ 18	$ 20,071
Costs and expenses:					
Research and development expense	47,029	40,092	24,100	23,282	25,050
General and administrative expense	14,360	11,413	9,832	8,650	7,805
Total costs and expenses	61,389	51,505	33,932	31,932	32,855
Loss from operations	(61,389)	(51,505)	(33,932)	(31,914)	(12,784)
Other income	3,497	3,231	651	104	15
Net loss and comprehensive loss	$ (57,892)	$ (48,274)	$ (33,281)	$ (31,810)	$ (12,769)
Net loss per share of common stock—basic and diluted	$ (1.34)	$ (1.18)	$ (1.13)	$ (1.50)	$ (0.67)
Weighted average common shares outstanding, basic and diluted	43,254,782	41,044,621	29,395,756	21,256,312	19,010,587

	As of December 31,				
(in thousands)	2019	2018	2017	2016	2015
Balance Sheet Data:					
Cash and cash equivalents	$ 158,201	$ 209,918	$ 123,925	$ 40,042	$ 46,803
Total assets	167,970	214,839	128,583	42,388	48,462
Total liabilities	13,769	9,375	8,882	7,087	7,991
Total stockholders' equity	154,201	205,464	119,701	35,301	40,472

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion and analysis of our financial condition and results of operations together with our consolidated financial statements and the related notes and other financial information included elsewhere in this Annual Report. Some of the information contained in this discussion and analysis or set forth elsewhere in this Annual Report, including information with respect to our plans and strategy for our business, includes forward-looking statements that involve risks and uncertainties. You should review Item 1A. "Risk Factors" and "Special Note Regarding Forward-Looking Statements" in this Annual Report for a discussion of important factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

For the discussion of our financial condition and results of operations for the year ended December 31, 2018 compared to the year ended December 31, 2017, please refer to Part II, Item 7, "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, 2018 filed with the SEC on March 6, 2019.

Overview

We are a clinical-stage biotechnology company focused on the discovery and development of novel glycomimetic drugs to address unmet medical needs resulting from diseases in which carbohydrate biology plays a key role. We are developing a pipeline of glycomimetics, which are molecules that mimic the structure of carbohydrates involved in important biological processes, to inhibit disease-related functions of carbohydrates such as the roles they play in inflammation, cancer and infection. We believe this represents an innovative approach to drug discovery to treat a wide range of diseases. We are focusing our efforts on drug candidates for rare diseases that we believe will qualify for orphan drug designation.

Our proprietary glycomimetics platform is based on our expertise in carbohydrate chemistry and our understanding of the role carbohydrates play in key biological processes. Most human proteins are modified by the addition of complex carbohydrate structures to the surface of such proteins, which affects the functions of the proteins and their interactions with other molecules. Our initial research and development efforts have focused on drug candidates targeting selectins, which are proteins that serve as adhesion molecules and bind to carbohydrates that are involved in the inflammatory component and progression of a wide range of diseases, including hematologic disorders, cancer and cardiovascular disease. For example, we believe that members of the selectin family play a key role in tumor metastasis and resistance to chemotherapy. Inhibiting specific carbohydrates from binding to selectins has long been viewed as a potentially attractive approach for therapeutic intervention. The ability to successfully develop drug-like compounds that inhibit binding with selectins, known as selectin antagonists, has historically been limited by the complexities of carbohydrate chemistry. We believe our expertise in carbohydrate chemistry enables us to design selectin antagonists and other glycomimetics that may inhibit the disease-related functions of certain carbohydrates in order to develop novel drug candidates to address orphan diseases with high unmet medical need.

Our lead glycomimetic drug candidate, uproleselan, is a specific E-selectin inhibitor that we are developing to be used in combination with chemotherapy to treat patients with acute myeloid leukemia, or AML, a life-threatening hematologic cancer, and potentially other hematologic cancers. We completed an initial Phase 1 trial in healthy volunteers for uproleselan, and in May 2017 we completed enrollment in a Phase 1/2 clinical trial in patients with either relapsed/refractory or de novo/secondary AML. In December 2018, at the annual meeting of the American Society of Hematology, or ASH, we presented clinical data from this Phase 1/2 clinical trial that showed high remission rates, improved overall survival and improved event-free survival, all compared to historical controls derived from third-party clinical trials evaluating treatment with standard chemotherapy.

In March 2018, we announced our design for a randomized, double-blind, placebo-controlled Phase 3 clinical trial to evaluate uproleselan in individuals with relapsed/refractory AML, which design is aligned with guidance received from the U.S. Food and Drug Administration, or FDA. Based on consultations with the FDA, the single pivotal trial is planned to enroll approximately 380 adult patients with relapsed or refractory AML at centers in the United States, Canada, Europe and Australia. We dosed the first patient in this trial in November 2018. The primary efficacy endpoint

will be overall survival; importantly, the FDA has advised us that data on overall survival will not need to be censored for transplant in the primary efficacy analysis, meaning that patients who proceed to transplant will continue to be included as part of the survival analysis. All patients will be treated with standard chemotherapy of either MEC (mitoxantrone, etoposide and cytarabine) or FAI (fludarabine, cytarabine and idarubicin), with approximately one-half of the patients randomized to receive uproleselan in addition to chemotherapy. Patients receiving uproleselan will be dosed for one day prior to initiation of chemotherapy, twice a day through the chemotherapy regimen, and then for two days after the end of chemotherapy, which was the same regimen as in the Phase 1/2 trial. The dose regimen will be fixed, rather than weight-based, which we believe will simplify administration. We plan to offer up to three cycles of consolidation therapy in both arms of the trial for patients who achieve remission. We believe that multiple cycles of treatment in patients who respond may drive an even deeper response in patients treated with uproleselan. If this is the case, it could lengthen the duration of remission with potential for additional benefit on survival. Key secondary endpoints of the Phase 3 trial will include the incidence of severe mucositis and remission rate, which will be assessed in a hierarchical fashion which may provide supportive data. We expect to complete enrollment of the trial in the second half of 2021.

Uproleselan received orphan drug designation from the FDA in May 2015 for the treatment of patients with AML. In June 2016, uproleselan received fast track designation from the FDA for the treatment of adult patients with relapsed or refractory AML and elderly patients aged 60 years or older with AML. In May 2017, uproleselan received Breakthrough Therapy designation from the FDA for the treatment of adult patients with relapsed or refractory AML. In May 2017, the European Commission, based on a favorable recommendation from the EMA Committee for Orphan Medicinal Products, granted orphan designation for uproleselan for the treatment of patients with AML. In June 2018, we received a response from the EMA to our request for scientific advice with respect to our Marketing Authorization Application, or MAA, development plan. Based on this guidance, we are conducting the global Phase 3 clinical trial and intend to pursue regulatory approval of uproleselan for the treatment of AML.

In May 2018, we signed a Cooperative Research and Development Agreement, or CRADA, with the National Cancer Institute, or NCI, part of the National Institutes of Health. Under the terms of the CRADA, we will collaborate with both the NCI and the Alliance for Clinical Trials in Oncology to conduct a Phase 2/3 randomized, controlled clinical trial testing the addition of uproleselan to a standard cytarabine/daunorubicin chemotherapy regimen (7&3) in older adults with previously untreated AML who are suitable for intensive chemotherapy. The primary endpoint will be overall survival, which is defined as the time from the date of randomization to death from any cause, with a planned interim analysis based on event-free survival after the first 250 patients have been enrolled in the trial. The full trial is expected to enroll approximately 670 patients. Under the terms of the CRADA, the NCI may also fund additional research, including clinical trials involving pediatric patients with AML as well as preclinical experiments and clinical trials evaluating alternative populations and chemotherapy regimens. We will supply uproleselan as well as provide financial support to augment data analysis and monitoring for the Phase 3 program. The trial opened for enrollment in early 2019 and enrolled the first patient in April 2019.

As a potential life-cycle extension to uproleselan, our scientists have rationally designed an innovative antagonist of E-selectin, GMI-1687, that could be suitable for subcutaneous administration. When given by subcutaneous injection in animal models, GMI-1687 has been observed to have equivalent activity to uproleselan, but at an approximately 1,000-fold lower dose. We believe that GMI-1687 could be developed to broaden the clinical usefulness of an E-selectin antagonist to conditions where outpatient treatment is preferred or required. We are currently conducting studies with GMI-1687 to support our planned submission of an investigational new drug application, or IND, to the FDA.

We are developing an additional drug candidate, GMI-1359, that simultaneously targets both E-selectin and a chemokine receptor known as CXCR4. Since E-selectin and CXCR4 are implicated in the retention of cancer cells in the bone and bone marrow, we believe that targeting both E-selectin and CXCR4 with a single compound could improve efficacy in the treatment of cancers that affect the bone and bone marrow, particularly solid tumors that have a propensity to metastasize to bone, such as breast and prostate cancer. We completed a Phase 1 randomized, double-blind, placebo-controlled, single-dose escalation trial of GMI-1359 in healthy volunteers. In this trial, volunteer participants received a single injection of either GMI-1359 or placebo, after which they were evaluated for safety, tolerability and pharmacokinetics, or PK. This trial was conducted at a single site in the United States. GMI-1359 was generally well tolerated in this trial, with no participants experiencing serious adverse events. In the fourth quarter of 2019, we initiated a Phase 1b trial of GMI-1359 in hormone receptor positive breast cancer patients whose tumors have spread to bone, and the first patient was dosed in January 2020. The trial is being conducted at Duke University and will evaluate dose

escalation as well as safety, PK and pharmacodynamics markers of biologic activity in these patients. In January 2020, the FDA granted GMI-1359 orphan drug designation and rare pediatric disease designation for the treatment of osteosarcoma, a rare cancer affecting approximately 900 adolescents each year in the United States. These designations are expected to make GMI-1359 eligible for priority review by the FDA.

In addition to our programs described above, we are also advancing other preclinical-stage programs. These programs include small-molecule glycomimetic compounds that inhibit the protein galectin-3, which we believe may have potential to be used for the treatment of fibrosis, cancer and cardiovascular disease.

We previously developed another glycomimetic drug candidate, rivipansel, a pan-selectin antagonist for the potential treatment of vaso-occlusive crisis, a debilitating and painful condition that occurs periodically throughout the life of a person with sickle cell disease, or SCD. Rivipansel received fast track designation from the FDA as well as orphan drug designation from the FDA in the United States and from the European Medicines Agency, or EMA, in the European Union. We entered into an exclusive license agreement with Pfizer Inc., or the Pfizer Agreement, for Pfizer to further develop, obtain regulatory approval and potentially commercialize rivipansel worldwide. Pfizer conducted a pivotal Phase 3 clinical trial to evaluate the efficacy and safety of rivipansel in patients aged six and older with SCD who were hospitalized for a vaso-occlusive crisis and required treatment with intravenous opioids. The clinical trial did not meet its primary or key secondary efficacy endpoints. We will work with Pfizer to effectuate any necessary transition activities in connection with the Pfizer Agreement, and will be determining what, if any, next steps to take with respect to the rivipansel program after reviewing the Phase 3 data more completely.

We commenced operations in 2003, and our operations to date have been limited to organizing and staffing our company, business planning, raising capital, developing our glycomimetics platform, identifying potential drug candidates, undertaking preclinical studies and conducting, both alone and in collaboration with third parties, clinical trials of uproleselan, GMI-1359 and rivipansel. To date, we have financed our operations primarily through private placements of our securities, up-front and milestone payments under our license and collaboration agreements and the net proceeds from public offerings of common stock, including sales of common stock under at-the-market sales facilities with Cowen and Company LLC, or Cowen. We have no approved drugs currently available for sale, and substantially all of our revenue to date has been revenue from up-front and milestone payments, although we have received nominal amounts of revenue under research grants.

Since inception, we have incurred significant operating losses. We had an accumulated deficit of $258.4 million as of December 31, 2019, and we expect to continue to incur significant expenses and operating losses over at least the next several years. Our net losses may fluctuate significantly from quarter to quarter and year to year, depending on the timing of our clinical trials and our expenditures on other research and development activities. We anticipate that our expenses will increase substantially as we:

- initiate and conduct our planned clinical trials of uproleselan, GMI-1359 and GMI-1687, including fulfilling our funding and supply commitments related to the clinical trial of uproleselan being conducted in collaboration with NCI;
- further NDA-enabling activities related to manufacture, toxicology and clinical pharmacology;
- manufacture additional uproleselan drug supplies for validation and prepare for commercialization;
- seek to discover and develop additional drug candidates;
- seek regulatory approvals for any drug candidates that successfully complete clinical trials;
- ultimately establish a sales, marketing and distribution infrastructure and scale up external manufacturing capabilities to commercialize any drug candidates for which we may obtain regulatory approval;
- maintain, expand and protect our intellectual property portfolio;
- hire additional clinical, quality control, regulatory and scientific personnel; and
- add operational, financial and management information systems and personnel, including personnel to support our drug development and potential future commercialization efforts.

To fund further operations, we will need to raise capital. We may obtain additional financing in the future through the issuance of our common stock, through other equity or debt financings, potentially including the use of our at-the-market sales facility with Cowen, or through collaborations or partnerships with other companies. We may not be able to raise additional capital on terms acceptable to us, or at all, and any failure to raise capital as and when needed could compromise our ability to execute on our business plan. Although it is difficult to predict future liquidity requirements, we believe that our existing cash and cash equivalents will be sufficient to fund our operations into 2022. However, our ability to successfully transition to profitability will be dependent upon achieving a level of revenues adequate to support our cost structure. We cannot assure you that we will ever be profitable or generate positive cash flow from operating activities.

Our Collaboration and License Agreements

In January 2020, we entered into an exclusive collaboration and license agreement with Apollomics (Hong Kong) Limited, or Apollomics, for the development and commercialization of uproleselan and GMI-1687 in Mainland China, Hong Kong, Macau and Taiwan, also known as Greater China. Under the terms of the agreement, Apollomics will be responsible for clinical development and commercialization in Greater China. We will also collaborate with Apollomics to advance the preclinical and clinical development of GMI-1687. We received an upfront cash payment of $9.0 million and, subject to the terms of the agreement, will be eligible to receive potential milestone payments totaling approximately $180.0 million, as well as tiered royalties ranging from the high single digits to 15%, as a percentage of net sales. Apollomics will be responsible for all costs related to development, regulatory approvals, and commercialization activities for uproleselan and GMI-1687 in Greater China, and we and Apollomics expect to enter into clinical and commercial supply agreements with respect to our provision of uproleselan and GMI-1687 to Apollomics. We retain all rights for both compounds in the rest of the world.

In October 2011, we entered into the Pfizer Agreement, under which we granted Pfizer an exclusive worldwide license to develop and commercialize products containing rivipansel for all fields and uses. Pfizer was required to use commercially reasonable efforts, at its expense, to develop, obtain regulatory approval for and commercialize rivipansel for SCD in the United States. On August 2, 2019, Pfizer announced that its pivotal Phase 3 clinical trial to evaluate the efficacy and safety of rivipansel in patients aged six and older with SCD who were hospitalized for a vaso-occlusive crisis and required treatment with intravenous opioids did not meet its primary or key secondary efficacy endpoints. On February 5, 2020, Pfizer delivered notice to us of its termination of the Pfizer Agreement, which termination will be effective as of April 5, 2020. Following the effective date of the termination of the Pfizer Agreement, we will retain all rights to the potential future development and commercialization of rivipansel. We did not earn any revenue or receive any payments from Pfizer during the years ended December 31, 2019, 2018 and 2017 and will not be eligible to receive any future payments from Pfizer following the termination of the Pfizer Agreement.

We have entered into a research services agreement, or the Research Agreement, with the University of Basel, or the University, for biological evaluation of selectin antagonists. While the scope of work under the Research Agreement ended in 2017, certain patents covering the rivipansel compound are subject to provisions of the Research Agreement. Under the terms of the Research Agreement, we owed the University 10% of any milestone and royalty payments received from Pfizer with respect to rivipansel. There were no payments due to the University for the years ended December 31, 2019, 2018 or 2017, and as a result of the termination of the Pfizer Agreement, we do not expect to make any future payments to the University.

Critical Accounting Policies and Significant Judgments and Estimates

Our management’s discussion and analysis of our financial condition and results of operations is based on our financial statements, which have been prepared in accordance with generally accepted accounting principles in the United States, or GAAP. The preparation of these financial statements requires us to make estimates, judgments and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities as of the dates of the balance sheets and the reported amounts of revenue and expenses during the reporting periods. In accordance with GAAP, we base our estimates on historical experience and on various other assumptions that we believe are reasonable under the circumstances at the time such estimates are made. Actual results may differ materially from our estimates and judgments under different assumptions or conditions. We periodically review our estimates in light of changes in circumstances, facts and experience. The effects of material revisions in estimates are reflected in our financial statements prospectively from the date of the change in estimate.

We define our critical accounting policies as those accounting principles generally accepted in the United States that require us to make subjective estimates and judgments about matters that are uncertain and are likely to have a material impact on our financial condition and results of operations, as well as the specific manner in which we apply those principles. While our significant accounting policies are more fully described in Note 2 to our financial statements appearing elsewhere in this Annual Report, we believe the following are the critical accounting policies used in the preparation of our financial statements that require significant judgments and estimates.

Revenue Recognition

Effective January 1, 2018, we adopted Topic 606, *Revenue from Contracts with Customers*. This standard applies to all contracts with customers, except for contracts that are within the scope of other standards, such as leases, insurance, collaboration agreements and financial instruments. Under Topic 606, an entity recognizes revenue when its customer obtains control of promised goods and services, in an amount that reflects the consideration which the entity expects to receive in exchange for those goods and services. To determine revenue recognition for arrangements that an entity determines is within the scope of Topic 606, we perform the following five steps: (i) identify the contract(s) with the customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligation in the contract; and (v) recognize revenue when (or as) we satisfy a performance obligation. We only apply the five-step model to contracts when it is probable that we will collect the consideration we are entitled to in exchange for the goods or services we transfer to the customer. At contract inception, once the contract is determined to be within the scope of Topic 606, we assess the goods or services promised within each contract and identify, as a performance obligation, and assess whether each promised good or service is distinct. We then recognize as revenue the amount of the transaction price that is allocated to the respective performance obligation when (or as) the performance obligation is satisfied.

We enter into licensing agreements which are within the scope of Topic 606, under which we license certain of our product candidates' rights to third parties. The terms of these arrangements typically include payment of one or more of the following: non-refundable, up-front license fees; development, regulatory and commercial milestone payments; and royalties on net sales of the licensed product. In determining the appropriate amount of revenue to be recognized as we fulfill our obligation under our agreements, we perform the five steps described above. As part of the accounting for these arrangements, we must develop assumptions that require judgment to determine the stand-alone selling price, which may include forecasted revenues, development timelines, reimbursement of personnel costs, discount rates and probabilities of technical and regulatory success.

Licensing of Intellectual Property: If the license to our intellectual property is determined to be distinct from the other performance obligations identified in the arrangement, we will recognize revenue from non-refundable, up-front fees allocated to the license when the license is transferred to the licensee and the licensee is able to use and benefit from the license. For licenses that are bundled with other promises, we utilize judgment to assess the nature of the combined performance obligation to determine whether the combined performance obligation is satisfied over time or at a point in time and, if over time, the appropriate method of measuring progress for purposes of recognizing revenue from non-refundable, up-front-fees. We evaluate the measure of progress each reporting period, and, if necessary, adjust the measure of performance and related revenue recognition.

Milestone Payments: At the inception of each arrangement that includes development 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. If it is probable that a significant revenue reversal will not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within our control or the licensee's control, such as regulatory approvals, are not considered probable of being achieved until those approvals are received. The transaction price is then allocated to each performance obligation on a relative stand-alone selling price basis, for which we recognize revenue as or when the performance obligations under the contract are satisfied. At the end of each subsequent reporting period, we re-evaluate the probability of achievement of such development milestones and any related constraint, and if necessary, adjust our estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which would affect license, collaboration and other revenues and earnings in their period of adjustment.

Royalties: For arrangements that include sales-based royalties, including milestone payments based on the level of sales, for which the license is deemed to be the predominant item to which royalties relate, we recognize revenue at the

later of (i) when the related sales occur, or (ii) when the performance obligation to which some of all of the royalty has been allocated has been satisfied (or partially satisfied). To date, we have not recognized any royalty revenue from our license agreements.

Stock-Based Compensation

We issue stock-based compensation awards to our employees and non-employee directors, including stock options. We measure stock-based compensation expense related to these awards based on the fair value of the award on the date of grant and recognize stock-based compensation expense on a straight-line basis over the requisite service period of the awards, which generally equals the vesting period. We grant stock options with exercise prices equal to the estimated fair value of our common stock on the date of grant. Effective on January 1, 2017 with the adoption of Accounting Standards Update, or ASU, No. 2016-09, we account for forfeitures as they occur. We have selected the Black-Scholes-Merton option pricing model to determine the fair value of stock option awards, which requires the input of various assumptions that require management to apply judgment and make assumptions and estimates, including:

Risk-Free Interest Rate—The risk-free interest rate assumption is based on observed interest rates for constant maturity U.S. Treasury securities consistent with the expected life of our employee stock options.

Expected Term—The expected life represents the period of time the stock options are expected to be outstanding and is based on the simplified method. Under the simplified method, the expected life of an option is presumed to be the midpoint between the vesting date and the end of the contractual term. We used the simplified method due to the lack of sufficient historical exercise data to provide a reasonable basis upon which to otherwise estimate the expected life of the stock options.

Expected Volatility—Expected volatility is based on the historical volatilities of a peer group of comparable publicly traded companies with drug candidates in similar stages of development along with our historical volatility since our public offering.

Expected Dividend Yield—We have assumed no dividend yield because we do not expect to pay dividends in the future, which is consistent with our history of not paying dividends.

Research and Development Expenses, Including Clinical Trial Accruals/Expenses

Research and development costs consist of salaries and benefits, including related stock-based compensation, laboratory supplies and facility costs, as well as fees paid to other entities that conduct certain research and development activities on our behalf, such as clinical research organizations, or CROs, and contract manufacturing organizations, or CMOs. Research and development costs are expensed as incurred.

Clinical trial expenses are a significant component of research and development expenses, and we outsource a significant portion of these clinical trial activities to third parties. Third-party clinical trial expenses include investigator fees, site and patient costs, CRO costs, and costs for central laboratory testing and data management. The accrual for site and patient costs includes inputs such as estimates of patient enrollment, patient cycles incurred, clinical site activations, and other pass-through costs. These inputs are required to be estimated due to a lag in receiving the actual clinical information from third parties. Payments for these activities are based on the terms of the individual arrangements, which may differ from the pattern of costs incurred, and are reflected on the balance sheets as prepaid assets or accrued expenses. These third-party agreements are generally cancelable, and related costs are recorded as research and development expenses as incurred. Non-refundable advance clinical payments for goods or services that will be used or rendered for future research and development activities are recorded as a prepaid asset and recognized as expense as the related goods are delivered or the related services are performed. When evaluating the adequacy of the accrued expenses, we analyze progress of the studies, including the phase or completion of events, invoices received and contracted costs. Significant judgments and estimates may be made in determining the accrued balances at the end of any reporting period. Actual results could differ from the estimates made. Our historical clinical accrual estimates have not been materially different from our actual costs.

Components of Operating Results

Revenue

To date, we have not generated any revenue from the sale of our drug candidates and do not expect to generate any revenue from the sale of drugs in the near future. Substantially all of our historical revenue consisted of the upfront and milestone payments under the Pfizer Agreement.

Research and Development

Research and development expenses consist of expenses incurred in performing research and development activities, including compensation and benefits for full-time research and development employees, facilities expenses, overhead expenses, cost of laboratory supplies, clinical trial and related clinical manufacturing expenses, fees paid to CROs and other consultants and other outside expenses. Other preclinical research and platform programs include activities related to exploratory efforts, target validation, lead optimization for our earlier programs and our proprietary glycomimetics platform. Our research and development expenses have related primarily to the development of rivipansel, uproleselan and our other drug candidates.

We do not currently utilize a formal time allocation system to capture expenses on a project-by-project basis because we are organized and record expense by functional department and our employees may allocate time to more than one development project. Accordingly, we only allocate a portion of our research and development expenses by functional area and by drug candidate.

Research and development costs are expensed as incurred. Non-refundable advance payments for goods or services to be received in the future for use in research and development activities are deferred and capitalized. The capitalized amounts are expensed as the related goods are delivered or the services are performed.

Research and development activities are central to our business model. Drug candidates in later stages of clinical development generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size and duration of later stage clinical trials. We expect our research and development expenses to increase over the next several years as we seek to progress uproleselan, GMI-1359 and our other drug candidates into and through clinical development. However, it is difficult to determine with certainty the duration and completion costs of our current or future preclinical studies and clinical trials of our drug candidates, or if, when or to what extent we will generate revenues from the commercialization and sale of any of our drug candidates that obtain regulatory approval. We may never succeed in achieving regulatory approval for any of our drug candidates.

The duration, costs and timing of clinical trials and development of our drug candidates will depend on a variety of factors that include:

- per patient trial costs;
- the number of patients that participate in the trials;
- the number of sites included in the trials;
- the countries in which the trial is conducted;
- the length of time required to enroll eligible patients;
- the number of doses that patients receive;
- the drop-out or discontinuation rates of patients;
- potential additional safety monitoring or other studies requested by regulatory agencies;
- the duration of patient follow-up; and
- the safety and efficacy profile of the drug candidate.

In addition, the probability of success for each drug candidate will depend on numerous factors, including competition, manufacturing capability and commercial viability. We will determine which programs to pursue and how

much to fund each program in response to the scientific and clinical success of each drug candidate, as well as an assessment of each drug candidate's commercial potential.

General and Administrative

General and administrative expenses consist primarily of salaries and other related costs, including stock-based compensation, for personnel in executive, finance, accounting, business development and human resources functions. Other significant costs include facility costs not otherwise included in research and development expenses, legal fees relating to patent and corporate matters and fees for accounting and consulting services. We anticipate that our general and administrative expenses will increase in the future to support our continued research and development activities.

Interest Income

Other income consists of interest income earned on our cash and cash equivalents.

Results of Operations for the Years Ended December 31, 2019 and 2018

The following table sets forth our results of operations for the years ended December 31, 2019 and 2018.

(in thousands)	YEAR ENDED DECEMBER 31, 2019	2018	PERIOD-TO PERIOD CHANGE
Revenue	$ —	$ —	$ —
Costs and expenses:			
Research and development expense	47,029	40,092	6,937
General and administrative expense	14,360	11,413	2,947
Total costs and expenses	61,389	51,505	9,884
Loss from operations	(61,389)	(51,505)	(9,884)
Interest income	3,497	3,231	266
Net loss and comprehensive loss	$ (57,892)	$ (48,274)	$ (9,618)

Research and Development Expense

The following table summarizes our research and development expense by functional area for the years ended December 31, 2019 and 2018:

(in thousands)	YEAR ENDED DECEMBER 31, 2019	2018	PERIOD-TO PERIOD CHANGE
Clinical development	$ 11,898	$ 5,450	$ 6,448
Manufacturing and formulation	18,077	20,692	(2,615)
Contract research services, consulting and other costs	2,644	2,511	133
Laboratory costs	2,146	2,004	142
Personnel-related	9,862	7,726	2,136
Stock-based compensation	2,402	1,709	693
Research and development expense	$ 47,029	$ 40,092	$ 6,937

The following table summarizes our research and development expense by drug candidate for the years ended December 31, 2019 and 2018:

(in thousands)	YEAR ENDED DECEMBER 31, 2019	2018	PERIOD-TO-PERIOD CHANGE
Uproleselan	$ 30,033	$ 26,775	$ 3,258
GMI-1359	425	348	77
Other research and development	4,307	3,534	773
Personnel-related and stock-based compensation	12,264	9,435	2,829
Research and development expense	$ 47,029	$ 40,092	$ 6,937

Research and development expense increased by $6.9 million, or 17%, to $47.0 million for the year ended December 31, 2019 from $40.1 million for the year ended December 31, 2018. Clinical development expenses increased by $6.4 million, primarily as a result of increased clinical costs related to our ongoing global Phase 3 clinical trial of uproleselan in individuals with relapsed/refractory AML and the Phase 2/3 clinical trial being conducted by the NCI, which opened for enrollment in early 2019. Personnel-related and stock-based compensation expenses increased due to an increase in clinical headcount and stock option and restricted stock unit awards granted in 2019. These increases were offset in part by a $2.6 million decrease in manufacturing and formulation due to lower raw material costs in 2019 as compared to 2018.

General and Administrative Expense

The following table sets forth the components of our general and administrative expense for the years ended December 31, 2019 and 2018:

(in thousands)	YEAR ENDED DECEMBER 31, 2019	2018	PERIOD-TO-PERIOD CHANGE
Personnel-related	$ 4,783	$ 3,553	$ 1,230
Stock-based compensation	3,813	2,878	935
Legal, consulting and other professional expenses	4,849	4,157	692
Other	915	825	90
General and administrative expense	$ 14,360	$ 11,413	$ 2,947

General and administrative expense increased for the year ended December 31, 2019 by $2.9 million, or 26%, compared to 2018 primarily due to an increase in personnel-related costs, stock-based compensation expense, legal and patent expenses. Personnel-related and stock-based compensation expenses increased due to additional headcount in 2019, annual salary adjustments for general and administrative personnel and stock option and restricted stock unit awards granted in 2019. Legal expenses increased due to increased review of third-party contracts in 2019.

Interest Income

Interest income increased by $266,000 to $3.5 million for the year ended December 31, 2019 from $3.2 million for the year ended December 31, 2018, due to higher cash balances in 2019 over 2018.

Liquidity and Capital Resources

Sources of Liquidity

We have historically financed our operations primarily through public offerings and private placements of our capital stock, including sales agreements with Cowen, and upfront and milestone payments from our license and collaboration agreements. As of December 31, 2019, we had $158.2 million in cash and cash equivalents.

In March 2018, we completed a public offering in which we sold 8,050,000 shares of our common stock at a price to the public of $17.00 per share. We received net proceeds of $128.4 million from this offering, after deducting underwriting discounts, commissions and other offering expenses.

In May 2017, we completed a public offering in which we sold 8,050,000 shares of our common stock at a price to the public of $11.50 per share. We received net proceeds of $86.8 million from this offering, after deducting underwriting discounts, commissions and other offering expenses.

In March 2016, we entered into an at-the-market sales agreement with Cowen to sell shares of our common stock having an aggregate offering price of up to $40.0 million through Cowen acting as our sales agent. During the year ended December 31, 2017, we sold an aggregate of 1,388,647 shares of our common stock under the at-the-market facility, for net proceeds of $7.4 million. We and Cowen terminated the agreement in May 2017. As of its termination, we had sold an aggregate of 2,057,438 shares for net proceeds of $11.3 million under the at-the-market facility.

In September 2017, we entered into a new at-the-market sales agreement with Cowen, under which we may offer and sell, from time to time at our sole discretion, shares of our common stock having an aggregate offering price of up to $100.0 million through Cowen acting as our sales agent. During the year ended December 31, 2017, we sold an aggregate of 1,600,000 shares of our common stock under the at-the-market facility for net proceeds of $19.3 million. There were no sales under this agreement in the years ended December 31, 2019 and 2018. As of December 31, 2019, we have the ability to sell up to $80.0 million of common stock under the at-the-market sales agreement with Cowen.

As described above, we entered into a collaboration and license agreement with Apollomics in January 2020 and are potentially eligible to earn milestone payments and royalties under that agreement. In January 2020, Apollomics made an upfront payment to the Company of $9.0 million. Our ability to earn these payments and their timing will be dependent upon the outcome of Apollomics' activities and is uncertain at this time.

Funding Requirements

Our primary uses of capital are, and we expect will continue to be, compensation and related expenses, third-party clinical research and development services, laboratory and related supplies, clinical costs, legal and other regulatory expenses and general overhead costs.

The successful development of any of our drug candidates is highly uncertain. As such, at this time, we cannot reasonably estimate or know the nature, timing and costs of the efforts that will be necessary to complete the remainder of the development of uproleselan or our other drug candidates. We are also unable to predict when, if ever, material net cash inflows will commence from uproleselan or our other drug candidates. This is due to the numerous risks and uncertainties associated with developing drugs, including the uncertainty of:

- successful enrollment in, and completion of, clinical trials;
- receipt of marketing approvals from applicable regulatory authorities;
- establishing commercial manufacturing capabilities or making arrangements with third-party manufacturers;
- obtaining and maintaining patent and trade secret protection and regulatory exclusivity for drug candidates;
- launching commercial sales of drugs, if and when approved, whether alone or in collaboration with others; and
- obtaining and maintaining healthcare coverage and adequate reimbursement.

A change in the outcome of any of these variables with respect to the development of any of our drug candidates would significantly change the costs and timing associated with the development of that drug candidate. Because our drug candidates are in various stages of clinical and preclinical development and the outcome of these efforts is uncertain, we cannot estimate the actual amounts necessary to successfully complete the development and commercialization of our drug candidates or whether, or when, we may achieve profitability. Until such time, if ever, as

we can generate substantial product revenues, we expect to finance our cash needs through a combination of equity or debt financings and collaboration arrangements, including our existing license agreement with Apollomics. Except for Apollomics' obligation to make milestone and royalty payments under our license agreement, we do not have any committed external source of liquidity.

To the extent that we raise additional capital through the future sale of equity or debt, the ownership interest of our stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our existing common stockholders. If we raise additional funds through the issuance of convertible debt securities, these securities could contain covenants that would restrict our operations.

We may require additional capital beyond our currently anticipated amounts. Additional capital may not be available on reasonable terms, or at all. If we raise additional funds through collaboration arrangements in the future, we may have to relinquish valuable rights to our drug candidates or grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our drug development or future commercialization efforts or grant rights to develop and market drug candidates that we would otherwise prefer to develop and market ourselves.

Outlook

Based on our research and development plans and our timing expectations related to the progress of our programs, we expect that our existing cash and cash equivalents will enable us to fund our operating expenses and capital expenditure requirements into 2022. We have based this estimate on assumptions that may prove to be wrong, and we could use our capital resources sooner than we expect. Additionally, the process of testing drug candidates in clinical trials is costly, and the timing of progress in these trials is uncertain.

Cash Flows

The following table summarizes our cash flows for the years ended December 31, 2019, 2018 and 2017.

	YEAR ENDED DECEMBER 31,		
(in thousands)	**2019**	**2018**	**2017**
Net cash provided by (used in):			
Operating activities	$ (51,984)	$ (43,331)	$ (29,768)
Investing activities	(145)	(126)	(294)
Financing activities	413	129,450	113,945
Net change in cash and cash equivalents	$ (51,716)	$ 85,993	$ 83,883

In assessing cash used in operating activities, we consider several principal factors: (i) net loss for the period; (ii) adjustments for non-cash charges including stock-based compensation expense and depreciation and amortization of property and equipment; and (iii) the extent to which receivables, accounts payable and other liabilities, or other working capital components increase or decrease.

Year Ended December 31, 2019 Compared to Year Ended December 31, 2018

Operating Activities

Net cash used in operating activities was $52.0 million during the year ended December 31, 2019 compared to $43.3 million during the year ended December 31, 2018. The increase was primarily the result of ongoing costs associated with our uproleselan clinical development programs, which for 2019 also included significant costs associated with the start-up activities and enrollment for the global Phase 3 clinical trial and the NCI-sponsored Phase 2/3 trial, as described above.

Investing Activities

Net cash used in investing activities, consisting of purchases of scientific equipment and computers, was $145,000 for the year ended December 31, 2019 compared to $126,000 during the year ended December 31, 2018.

Financing Activities

Net cash provided by financing activities of $413,000 during the year ended December 31, 2019 consisted of proceeds from stock option exercises. Net cash provided by financing activities of $129.4 million during the year ended December 31, 2018 consisted of the net proceeds of $128.4 million from our public offering in March 2018 and $1.0 million in proceeds from stock option and warrant exercises.

Contractual Obligations

As of December 31, 2019, our significant contractual obligations consisted solely of rent obligations under a non-cancelable lease, as amended, for our current office space in Rockville, Maryland, which has a term through October 2023.

The following table depicts our obligations under this lease as of December 31, 2019.

	Payments Due by Period						
	Total	2020	2021	2022	2023	2024	After 2024
	(In thousands)						
Operating leases	$4,174	$1,051	$1,078	$1,104	$ 941	$ —	$ —

The foregoing table does not include various agreements that we have entered into for services with third-party vendors, including agreements to conduct clinical trials, to manufacture products, and for consulting and other contracted services due to the cancelable nature of the services. We accrue the costs of these agreements based on estimates of work completed to date.

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 under SEC rules.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The market risk inherent in our financial instruments and in our financial position represents the potential loss arising from adverse changes in interest rates. As of December 31, 2019 and 2018, we had cash and cash equivalents of $158.2 million and $209.9 million, respectively. We generally hold our cash in interest-bearing money market accounts. Our primary exposure to market risk is interest rate sensitivity, which is affected by changes in the general level of U.S. interest rates. Due to the short-term maturities of our cash equivalents and the low risk profile of our investments, an immediate 100 basis point change in interest rates would not have a material effect on the fair market value of our cash equivalents.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The financial statements and related financial statement schedules required to be filed are listed in Part IV, Item 15 of this Form 10-K.

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

Under the supervision of and with the participation of our management, including our chief executive officer, who is our principal executive officer, and our chief financial officer, who is our principal financial officer, we conducted an

evaluation of the effectiveness of our disclosure controls and procedures as of December 31, 2019, the end of the period covered by this Annual Report. The term "disclosure controls and procedures," as set forth in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, or the Exchange Act, means controls and other procedures of a company that are designed to provide reasonable assurance that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the rules and forms promulgated by the SEC. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives, and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of December 31, 2019, our chief executive officer and chief financial officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Management's Report on Internal Control over Financial Reporting and Attestation Report of the Registered Public Accounting Firm

Our management is responsible for establishing and maintaining an adequate system of internal control over financial reporting, as defined in the Exchange Act Rule 13a-15(f). Management conducted an assessment of our internal control over financial reporting based on the original framework established in 2013 by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control—Integrated Framework. Based on the assessment, management concluded that, as of December 31, 2019, our internal control over financial reporting was effective.

The effectiveness of our internal control over financial reporting as of December 31, 2019 has been audited by Ernst & Young, LLP, an independent registered public accounting firm, as stated in their report which is included herein on page 74.

Changes in Internal Control over Financial Reporting

There was no change in our internal control over financial reporting identified in connection with the evaluation required by Rule 13a-15(d) and 15d-15(d) of the Exchange Act that occurred during the quarter ended December 31, 2019 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

PART III

We will file a definitive proxy statement for our 2020 annual meeting of stockholders, or the 2020 Proxy Statement, with the SEC, pursuant to Regulation 14A, not later than 120 days after the end of our fiscal year. Accordingly, certain information required by Part III has been omitted under General Instruction G(3) to Form 10-K. Only those sections of the 2020 Proxy Statement that specifically address the items set forth herein are incorporated by reference.

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by Item 10 is hereby incorporated by reference to the relevant information to be included in the 2020 Proxy Statement under the captions "Information Regarding the Board of Directors and Corporate Governance," "Election of Directors" and "Executive Officers."

ITEM 11. EXECUTIVE COMPENSATION

The information required by Item 11 is hereby incorporated by reference to the relevant information to be included in the 2020 Proxy Statement under the captions “Executive Compensation” and “Non-Employee Director Compensation.”

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by Item 12 is hereby incorporated by reference to the relevant information to be included in the 2020 Proxy Statement under the captions “Security Ownership of Certain Beneficial Owners and Management” and “Securities Authorized for Issuance under Equity Compensation Plans.”

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by Item 13 is hereby incorporated by reference to the relevant information to be included in the 2020 Proxy Statement under the captions “Transactions with Related Persons” and “Independence of the Board of Directors.”

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by Item 14 is hereby incorporated by reference to the relevant information to be included in the 2020 Proxy Statement under the caption “Ratification of Selection of Independent Auditors.”

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

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

(1) Financial Statements:

(2) Financial Statement Schedules:

All financial statement schedules have been omitted because they are not applicable, not required or the information required is shown in the financial statements or the notes thereto.

(3) Exhibits

Exhibit Number	Description of Document
3.1(1)	Amended and Restated Certificate of Incorporation.
3.2(2)	Amended and Restated Bylaws.
4.1(3)	Specimen stock certificate evidencing shares of Common Stock.
4.2	Description of Certain of Registrant’s Securities.

Exhibit Number	Description of Document
10.1*(4)	License Agreement, dated as of October 7, 2011, as amended to date, by and between the Registrant and Pfizer Inc.
10.2(5)	Second Amended and Restated Investor Rights Agreement, dated as of October 20, 2009, by and among the Registrant and certain of its stockholders.
10.3+(6)	2003 Stock Incentive Plan, as amended.
10.4+(7)	Form of Incentive Stock Option Agreement under 2003 Stock Incentive Plan.
10.5+(8)	Form of Nonqualified Stock Option Agreement under 2003 Stock Incentive Plan.
10.6+(9)	2013 Equity Incentive Plan.
10.7+(10)	Form of Stock Option Grant Notice and Stock Option Agreement under 2013 Equity Incentive Plan.
10.8+(11)	Form of Restricted Stock Unit Grant Notice and Restricted Stock Unit Award Agreement under 2013 Equity Incentive Plan.
10.9+(12)	2013 Employee Stock Purchase Plan.
10.10+(13)	Form of Indemnification Agreement.
10.11+(14)	Amended and Restated Executive Employment Agreement, dated as of July 30, 2019, by and between the Registrant and Rachel King.
10.12+(15)	Amended and Restated Executive Employment Agreement, dated as of July 30, 2019, by and between the Registrant and Brian Hahn.
10.13+(16)	Amended and Restated Executive Employment Agreement, dated as of July 30, 2019, by and between the Registrant and John Magnani.
10.14+(17)	Amended and Restated Executive Employment Agreement, dated as of July 30, 2019, by and between the Registrant and Helen Thackray.
10.15+(18)	Amended and Restated Executive Employment Agreement, dated as of July 30, 2019, by and between the Registrant and Armand Girard.
10.16+(19)	Amended and Restated Non-Employee Director Compensation Policy.
10.17(20)	Lease Agreement, dated July 23, 2014, by and between the Registrant and BMR-Medical Center Drive, LLC.
10.18(21)	Sales Agreement, dated September 28, 2017 by and between the Registrant and Cowen and Company, LLC.
10.19(22)	First Amendment to Lease, dated March 24, 2016, by and between the Registrant and BMR-Medical Center Drive LLC.
10.20**	Collaboration and License Agreement, dated January 2, 2020, by and between the Registrant and Apollomics (Hong Kong) Limited.
10.21+	GlycoMimetics, Inc. Inducement Plan.
10.22+	Form of Stock Option Grant Notice and Stock Option Agreement under the GlycoMimetics, Inc. Inducement Plan.
23.1	Consent of Ernst & Young LLP, independent registered public accounting firm.
24.1	Power of Attorney (contained on signature page hereto).
31.1	Certification of Principal Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) promulgated under the Securities Exchange Act of 1934, as adopted pursuant to section 302 of the Sarbanes-Oxley Act of 2002.

Exhibit Number	Description of Document
31.2	Certification of Principal Financial Officer pursuant to Rules 13a-14(a) and 15d-14(a) promulgated 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 and Principal Financial Officer pursuant to Rules 13a-14(b) and 15d-14(b) promulgated under the Securities Exchange Act of 1934 and 18 U.S.C. Section 1350, as adopted pursuant to section 906 of The Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

^ These certifications are being furnished solely to accompany this Annual Report pursuant to 18 U.S.C. Section 1350, and are not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and are not to be incorporated by reference into any filing of the registrant, whether made before or after the date hereof, regardless of any general incorporation language in such filing.

\+ Indicates management contract or compensatory plan.

* Confidential treatment has been granted with respect to portions of this exhibit (indicated by asterisks) and those portions have been separately filed with the Securities and Exchange Commission.

** Certain portions of this exhibit (indicated by asterisks) have been omitted because they are not material and would likely cause competitive harm to the registrant if publicly disclosed.

(1) Previously filed as Exhibit 3.1 to the Registrant's Current Report on Form 8-K (File No. 001-36177), filed with the Commission on January 15, 2014, and incorporated by reference herein.

(2) Previously filed as Exhibit 3.2 to the Registrant's Current Report on Form 8-K (File No. 001-36177), filed with the Commission on January 15, 2014, and incorporated by reference herein.

(3) Previously filed as Exhibit 4.2 to Amendment No. 2 to the Registrant's Registration Statement on Form S-1 (File No. 333-191567), filed with the Commission on October 31, 2013, and incorporated by reference herein.

(4) Previously filed as Exhibit 10.1 to Amendment No. 2 to the Registrant's Registration Statement on Form S-1 (File No. 333-191567), filed with the Commission on October 31, 2013, and incorporated by reference herein.

(5) Previously filed as Exhibit 10.2 to the Registrant's Registration Statement on Form S-1 (File No. 333-191567), filed with the Commission on October 4, 2013, and incorporated by reference herein.

(6) Previously filed as Exhibit 10.8 to the Registrant's Registration Statement on Form S-1 (File No. 333-191567), filed with the Commission on October 4, 2013, and incorporated by reference herein.

(7) Previously filed as Exhibit 10.9 to the Registrant's Registration Statement on Form S-1 (File No. 333-191567), filed with the Commission on October 4, 2013, and incorporated by reference herein.

(8) Previously filed as Exhibit 10.10 to the Registrant's Registration Statement on Form S-1 (File No. 333-191567), filed with the Commission on October 4, 2013, and incorporated by reference herein.

(9) Previously filed as Exhibit 10.11 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-191567), filed with the Commission on October 28, 2013, and incorporated by reference herein.

(10) Previously filed as Exhibit 10.12 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-191567), filed with the Commission on October 28, 2013, and incorporated by reference herein.

(11) Previously filed as Exhibit 10.13 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-191567), filed with the Commission on October 28, 2013, and incorporated by reference herein.

(12) Previously filed as Exhibit 10.14 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-191567), filed with the Commission on October 28, 2013, and incorporated by reference herein.

(13) Previously filed as Exhibit 10.15 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-191567), filed with the Commission on October 28, 2013, and incorporated by reference herein.

(14) Previously filed as Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-36177), filed with the Commission on August 1, 2019, and incorporated by reference herein.

(15) Previously filed as Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-36177), filed with the Commission on August 1, 2019, and incorporated by reference herein.

(16) Previously filed as Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-36177), filed with the Commission on August 1, 2019, and incorporated by reference herein.

(17) Previously filed as Exhibit 10.5 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-36177), filed with the Commission on August 1, 2019, and incorporated by reference herein.

(18) Previously filed as Exhibit 10.6 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-36177), filed with the Commission on August 1, 2019, and incorporated by reference herein.

(19) Previously filed as Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-36177), filed with the Commission on August 1, 2019, and incorporated by reference herein.

(20) Previously filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-36177), filed with the Commission on July 28, 2014, and incorporated by reference herein.

(21) Previously filed as Exhibit 1.2 to the Registrant's Registration Statement on Form S-3 (File No. 333-220697), filed with the Commission on September 28, 2017, and incorporated by reference herein.

(22) Previously filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-36177), filed with the Commission on March 29, 2016, and incorporated by reference herein.

ITEM 16. FORM 10-K SUMMARY

Not applicable

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.

GLYCOMIMETICS, INC.

By: /s/ Rachel K. King
Rachel K. King
President and Chief Executive Officer

February 28, 2020

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Rachel K. King and Brian M. Hahn, jointly and severally, as his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign this Annual Report on Form 10-K of GlycoMimetics, Inc., and any or all amendments thereto, 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 or necessary to be done in and about the premises hereby ratifying and confirming all that said attorneys-in-fact and agents, or his, her or their 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 and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Rachel K. King Rachel K. King	President, Chief Executive Officer and Director *(Principal Executive Officer)*	February 28, 2020
/s/ Brian M. Hahn Brian M. Hahn	Chief Financial Officer (*Principal Financial Officer and Principal Accounting Officer)*	February 28, 2020
/s/ Patricia S. Andrews Patricia S. Andrews	Director	February 28, 2020
/s/ Mark A. Goldberg M.D. Mark A. Goldberg M.D.	Director	February 28, 2020
/s/ Scott T. Jackson Scott T. Jackson	Director	February 28, 2020
/s/ Daniel M. Junius Daniel M. Junius	Director	February 28, 2020
/s/ Scott Koenig, M.D., Ph.D. Scott Koenig, M.D., Ph.D.	Director	February 28, 2020
/s/ Timothy Pearson Timothy Pearson	Director	February 28, 2020

INDEX TO FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm –
Opinion on Internal Controls over Financial Reporting

To the Shareholders and the Board of Directors of GlycoMimetics, Inc.

Opinion on Internal Control over Financial Reporting

We have audited GlycoMimetics, Inc.'s internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, GlycoMimetics, Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the balance sheets of the Company as of December 31, 2019 and 2018, the related statements of operations and comprehensive loss, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2019, and the related notes and our report dated February 28, 2020 expressed an unqualified opinion thereon.

Basis for Opinion
The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the 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 audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting
A company's internal control over financial reporting is a process designed 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. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP

Baltimore, Maryland
February 28, 2020

Report of Independent Registered Public Accounting Firm – Opinion on the Financial Statements

To the Shareholders and the Board of Directors of GlycoMimetics, Inc.

Opinion on the Financial Statements

We have audited the accompanying balance sheets of GlycoMimetics, Inc. (the Company) as of December 31, 2019 and 2018, the related statements of operations and comprehensive loss, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2019, 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 at December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 28, 2020 expressed an unqualified opinion thereon.

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 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. 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/ Ernst & Young LLP
We have served as the Company's auditor since 2011.
Baltimore, Maryland
February 28, 2020

GLYCOMIMETICS, INC.

Balance Sheets

	December 31,	
	2019	**2018**
Assets		
Current assets:		
Cash and cash equivalents	$ 158,201,441	$ 209,917,595
Prepaid expenses and other current assets	4,326,322	2,351,524
Total current assets	162,527,763	212,269,119
Property and equipment, net	822,920	957,226
Prepaid research and development expenses	1,560,607	1,560,607
Deposits	52,320	52,320
Operating lease right-of-use asset	3,006,069	—
Total assets	$ 167,969,679	$ 214,839,272
Liabilities & stockholders' equity		
Current liabilities:		
Accounts payable	$ 1,435,660	$ 2,663,579
Accrued expenses	8,710,790	6,000,804
Operating lease liabilities	804,126	—
Deferred rent	—	98,771
Total current liabilities	10,950,576	8,763,154
Noncurrent operating lease liabilities	2,818,516	—
Deferred rent, net of current portion	—	611,623
Total liabilities	13,769,092	9,374,777
Stockholders' equity:		
Preferred stock; $0.001 par value; 5,000,000 shares authorized, no shares issued and outstanding at December 31, 2019 and December 31, 2018	—	—
Common stock; $0.001 par value; 100,000,000 shares authorized, 43,466,933 shares issued and outstanding at December 31, 2019; 100,000,000 shares authorized, 43,160,751 shares issued and outstanding at December 31, 2018	43,465	43,159
Additional paid-in capital	412,599,772	405,972,075
Accumulated deficit	(258,442,650)	(200,550,739)
Total stockholders' equity	154,200,587	205,464,495
Total liabilities and stockholders' equity	$ 167,969,679	$ 214,839,272

See accompanying notes.

GLYCOMIMETICS, INC.

Statements of Operations and Comprehensive Loss

	Year Ended December 31,		
	2019	2018	2017
Revenue	$ —	$ —	$ —
Costs and expenses:			
Research and development expense	47,029,264	40,091,773	24,100,092
General and administrative expense	14,360,038	11,413,050	9,832,188
Total costs and expenses	61,389,302	51,504,823	33,932,280
Loss from operations	(61,389,302)	(51,504,823)	(33,932,280)
Interest income	3,497,391	3,231,190	651,212
Net loss and comprehensive loss	$ (57,891,911)	$ (48,273,633)	$ (33,281,068)
Basic and diluted net loss per common share	$ (1.34)	$ (1.18)	$ (1.13)
Basic and diluted weighted-average number of common shares	43,254,782	41,044,621	29,395,756

See accompanying notes.

GLYCOMIMETICS, INC.

Statements of Stockholders' Equity

	Common Stock		Additional Paid-In	Accumulated	Total Stockholders'
	Shares	Amount	Capital	Deficit	Equity
Balance at December 31, 2016	23,250,023	$ 23,249	$154,254,193	$(118,976,311)	$ 35,301,131
Cumulative adjustment upon implementation of ASU No. 2016-09	—	—	19,727	(19,727)	—
Issuance of common stock, net of issuance costs	11,038,647	11,038	113,536,146	—	113,547,184
Exercise of options and vesting of RSUs	71,129	71	373,305	—	373,376
Stock-based compensation	—	—	3,760,802	—	3,760,802
Net loss	—	—	—	(33,281,068)	(33,281,068)
Balance at December 31, 2017	34,359,799	34,358	271,944,173	(152,277,106)	119,701,425
Issuance of common stock, net of issuance costs	8,050,000	8,050	128,417,030	—	128,425,080
Exercise of options and warrants, and vesting of RSUs	750,952	751	1,023,774	—	1,024,525
Stock-based compensation	—	—	4,587,098	—	4,587,098
Net loss	—	—	—	(48,273,633)	(48,273,633)
Balance at December 31, 2018	43,160,751	43,159	405,972,075	(200,550,739)	205,464,495
Exercise of options and vesting of RSUs	306,182	306	412,607	—	412,913
Stock-based compensation	—	—	6,215,090	—	6,215,090
Net loss	—	—	—	(57,891,911)	(57,891,911)
Balance at December 31, 2019	43,466,933	$ 43,465	$412,599,772	$(258,442,650)	$154,200,587

See accompanying notes.

GLYCOMIMETICS, INC.

Statements of Cash Flows

	Year Ended December 31,		
	2019	2018	2017
Operating activities			
Net loss	$ (57,891,911)	$ (48,273,633)	$ (33,281,068)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation	279,234	275,123	263,541
Loss on disposal of property and equipment	—	168	—
Non-cash lease expense	620,068	—	—
Stock-based compensation expense	6,215,090	4,587,098	3,760,802
Changes in assets and liabilities:			
Prepaid expenses and other current assets	(2,059,260)	943,360	(2,816,381)
Prepaid research and development expenses	—	(1,356,243)	555,167
Accounts payable	(1,227,919)	16,488	1,061,880
Accrued expenses	2,709,986	551,146	724,797
Operating lease liabilities	(629,427)	—	—
Deferred rent	—	(74,637)	(37,099)
Net cash used in operating activities	(51,984,139)	(43,331,130)	(29,768,361)
Investing activities			
Purchases of property and equipment	(144,928)	(125,618)	(294,107)
Net cash used in investing activities	(144,928)	(125,618)	(294,107)
Financing activities			
Proceeds from issuance of common stock, net of issuance costs	—	128,425,080	113,572,189
Proceeds from exercise of stock options and warrants	412,913	1,024,525	373,376
Net cash provided by financing activities	412,913	129,449,605	113,945,565
Net change in cash and cash equivalents	(51,716,154)	85,992,857	83,883,097
Cash and cash equivalents, beginning of period	209,917,595	123,924,738	40,041,641
Cash and cash equivalents, end of period	$ 158,201,441	$ 209,917,595	$ 123,924,738
Non-cash investing and financing activities			
Property acquisition costs included in accrued expenses	$ —	$ —	$ 20,000
Issuance costs associated with financing included in accrued expenses	$ —	$ —	$ 25,005

See accompanying notes.

GLYCOMIMETICS, INC.

Notes to Financial Statements

1. Description of the Business

GlycoMimetics, Inc. (the Company), a Delaware corporation headquartered in Rockville, Maryland, was incorporated in 2003. The company is a clinical stage biotechnology company focused on the discovery and development of novel glycomimetic drugs to address unmet medical needs resulting from diseases in which carbohydrate biology plays a key role. Glycomimetics are molecules that mimic the structure of carbohydrates involved in important biological processes. Using its expertise in carbohydrate chemistry and knowledge of carbohydrate biology, the Company is developing a pipeline of proprietary glycomimetics that inhibit disease-related functions of carbohydrates, such as the roles they play in inflammation, cancer and infection.

The Company's executive personnel have devoted substantially all of their time to date to the planning and organization of the Company, the process of hiring scientists, initiating research and development programs and securing adequate capital for anticipated growth and operations. The Company has not commercialized any of its drug candidates and planned commercial operations have not commenced. The Company has incurred significant losses in the development of its drug candidates. The Company has not generated revenues from product sales. As a result, the Company has consistently reported negative cash flows from operating activities and net losses, had an accumulated deficit of $258.4 million at December 31, 2019 and expects to continue incurring losses for the foreseeable future.

2. Summary of Significant Accounting Policies

Basis of Accounting

The accompanying financial statements were prepared based on the accrual method of accounting in accordance with U.S. generally accepted accounting principles (GAAP).

Segment Information

Operating segments are defined as components of an enterprise about which separate discrete information is available for evaluation by the chief operating decision maker, or decision-making group, in deciding how to allocate resources and in assessing performance. The Company views its operations and manages its business in one segment, which is the identification and development of glycomimetic compounds.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting periods. Although actual results could differ from those estimates, management does not believe that such differences would be material.

Cash and Cash Equivalents

Cash and cash equivalents consist of investment in money market funds with commercial banks and financial institutions. The Company considers all investments in highly liquid financial instruments with an original maturity of three months or less at the date of purchase to be cash equivalents. Cash equivalents are stated at amortized cost, plus accrued interest, which approximates fair value.

Fair Value Measurements

The Company's financial instruments include cash and cash equivalents. The fair values of the financial instruments approximated their carrying values at December 31, 2019 and 2018, due to their short-term maturities. The Company accounts for recurring and nonrecurring fair value measurements in accordance with ASC 820, *Fair Value Measurements*. ASC 820 defines fair value, establishes a fair value hierarchy for assets and liabilities measured at fair value, and requires expanded disclosures about fair value measurements. The ASC hierarchy ranks the quality of

reliability of inputs, or assumptions, used in the determination of fair value, and requires assets and liabilities carried at fair value to be classified and disclosed in one of the following three categories:

- Level 1—Fair value is determined by using unadjusted quoted prices that are available in active markets for identical assets and liabilities.
- Level 2—Fair value is determined by using inputs, other than Level 1 quoted prices, that are directly and indirectly observable. Inputs can include quoted prices for similar assets and liabilities in active markets or quoted prices for identical assets and liabilities in inactive markets. Related inputs can also include those used in valuation or other pricing models that can be corroborated by observable market data.
- Level 3—Fair value is determined by inputs that are unobservable and not corroborated by market data. Use of these inputs involves significant and subjective judgments to be made by a reporting entity. In instances where the determination of the fair value measurement is based on inputs from different levels of fair value hierarchy, the fair value measurement will fall within the lowest level input that is significant to the fair value measurement in its entirety.

The Company periodically evaluates financial assets and liabilities subject to fair value measurements to determine the appropriate level at which to classify them each reporting period. This determination requires the Company to make subjective judgments as to the significance of inputs used in determining fair value and where such inputs lie within the ASC 820 hierarchy.

The Company had no assets or liabilities that were measured using quoted prices for similar assets and liabilities or significant unobservable inputs (Level 2 and Level 3 assets and liabilities, respectively) as of December 31, 2019 and 2018. The carrying value of cash held in money market funds of approximately $156.2 million and $207.9 million as of December 31, 2019 and 2018, respectively, is included in cash and cash equivalents and approximates market values based on quoted market prices (Level 1 inputs).

Concentration of Credit Risk

Credit risk represents the risk that the Company would incur a loss if counterparties failed to perform pursuant to the terms of their agreements. Financial instruments that potentially expose the Company to concentrations of credit risk consist primarily of cash and cash equivalents. Cash and cash equivalents consist of investment in money market funds with major financial institutions in the United States. These deposits and funds may be redeemed upon demand and, therefore, bear minimal risk. The Company does not anticipate any losses on such balances.

Property and Equipment

Property and equipment are recorded at cost and depreciated on a straight-line basis over estimated useful lives ranging from three to seven years. Upon retirement or disposition of assets, the costs and related accumulated depreciation are removed from the accounts and any resulting gain or loss is included in the results of operations. Expenditures for repairs and maintenance are charged to operations as incurred; major replacements that extend the useful life are capitalized. Depreciation and amortization are computed using the straight-line method over the following estimated useful lives:

	ESTIMATED USEFUL LIVES
Furniture and fixtures	7 years
Laboratory equipment	5 years
Office equipment	5 years
Computer equipment	5 years
Computer software	3 years
Leasehold improvements	Shorter of lease term or useful life

Impairment of Long-Lived Assets

The Company periodically assesses the recoverability of the carrying value of its long-lived assets in accordance with the provisions of ASC 360, *Property, Plant, and Equipment*. ASC 360 requires that long-lived assets and certain identifiable intangible assets be reviewed for impairment whenever events or changes in circumstances indicate that the

carrying amount of an asset may not be recoverable. Recoverability of the long-lived asset is measured by a comparison of the carrying amount of the asset to future undiscounted net cash flows expected to be generated by the asset. If the carrying value exceeds the sum of undiscounted cash flows, the Company then determines the fair value of the underlying asset. Any impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the estimated fair value of the assets. Assets to be disposed of are reported at the lower of the carrying amount or fair value, less costs to sell. As of December 31, 2019 and 2018, the Company determined that there were no impaired assets and it had no assets held for sale.

Revenue Recognition

Effective January 1, 2018, the Company adopted Accounting Standards Codification, or ASC, Topic 606, *Revenue from Contracts with Customers* (Topic 606). This standard applies to all contracts with customers, except for contracts that are within the scope of other standards, such as leases, insurance, collaboration arrangements and financial instruments. Under Topic 606, an entity recognizes revenue when its customer obtains control of promised goods or services in an amount that reflects the consideration which the entity expects to receive in exchange for those goods and services. To determine revenue recognition for arrangements that an entity determines are within the scope of Topic 606, the entity performs the following five steps: (i) identify the contract(s) with the customer(s); (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (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 only applies the five-step model to contracts when it is probable that the entity will collect the consideration it is entitled to in exchange for the goods and services it transfers to the customer. At contract inception, the Company assesses the goods or services promised within each contract that falls under the scope of Topic 606, determines those that are performance obligations and assesses whether each promised good or service is distinct. The Company then recognizes as revenue the amount of the transaction price that is allocated to the respective performance obligation when (or as) the performance obligation is satisfied.

The Company enters into licensing agreements which are within the scope of Topic 606, under which it licenses certain of its product candidates' rights to third parties. The terms of these arrangements typically include payment of one or more of the following: non-refundable, up-front license fees; development, regulatory and commercial milestone payments; and royalties on net sales of the licensed product, if and when earned. In determining the appropriate amount of revenue to be recognized as it fulfills its obligation under each of its agreements, the Company performs the five steps under ASC 606 as described above. As part of the accounting for these arrangements, the Company must develop assumptions that require judgment to determine the stand-alone selling price, which may include forecasted revenues, development timelines, reimbursement of personnel costs, discount rates and probabilities of technical and regulatory success.

Licensing of Intellectual Property: If the license to the Company's intellectual property is determined to be distinct from the other performance obligations identified in the arrangement, the Company recognizes revenue from non-refundable, up-front fees allocated to the license when the license is transferred to the licensee and the licensee is able to use and benefit from the license. For licenses that are bundled with other promises, the Company utilizes judgment to assess the nature of the combined performance obligation to determine whether the combined performance obligation is satisfied over time or at a point in time and, if over time, the appropriate method of measuring progress for purposes of recognizing revenue from non-refundable, up-front fees. The Company evaluates the measure of progress each reporting period, and, if necessary, adjusts the measure of performance and related revenue recognition.

Milestone Payments: At the inception of each arrangement that includes development 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. If it is probable that a significant revenue reversal will not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within the control of the Company or the licensee, such as regulatory approvals, are not considered probable of being achieved until those approvals are received. The transaction price is then allocated to each performance obligation on a relative stand-alone selling price basis, for which the Company recognizes revenue as or when the performance obligations under the contract are satisfied. At the end of each subsequent reporting period, the Company re-evaluates the probability of achievement of such development milestones and any related constraint and, if necessary, adjusts its estimate of the

overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which would affect license, collaboration and other revenues and earnings in their period of adjustment.

Royalties: For arrangements that include sales-based royalties, including milestone payments based on the level of sales, and for which the license is deemed to be the predominant item to which royalties relate, the Company recognizes revenue at the later of (i) when the related sales occur or (ii) when the performance obligation to which some or all of the royalty has been allocated has been satisfied (or partially satisfied). To date, the Company has not recognized any royalty revenue from its license agreements.

Research and Development Costs Including Clinical Trial Accruals/Expenses

Except for payments made in advance of services, research and development costs are expensed as incurred. Research and development costs primarily consist of employee-related expenses, including salaries and benefits, expenses incurred under agreements with contract research organizations (CROs), investigative sites and consultants that conduct the Company's clinical trials, the cost of acquiring and manufacturing clinical trial materials, including costs incurred under agreements with contract manufacturing organizations (CMOs), and other allocated expenses, stock-based compensation expense, and costs associated with non-clinical activities and regulatory approvals.

Clinical trial expenses are a significant component of research and development expenses, and the Company outsources a significant portion of these clinical trial activities to third parties. Third-party clinical trial expenses include investigator fees, site and patient costs, CRO costs, and costs for central laboratory testing and data management. The accrual for site and patient costs includes inputs such as estimates of patient enrollment, patient cycles incurred, clinical site activations, and other pass-through costs. These inputs are required to be estimated due to a lag in receiving the actual clinical information from third parties. Payments for these activities are based on the terms of the individual arrangements, which may differ from the pattern of costs incurred, and are reflected on the balance sheets as a prepaid asset or accrued expenses. These third-party agreements are generally cancellable, and related costs are recorded as research and development expenses as incurred. Non-refundable advance clinical payments for goods or services that will be used or rendered for future research and development activities are recorded as a prepaid asset and recognized as expense as the related goods are delivered or the related services are performed. When evaluating the adequacy of the accrued expenses, management assessments include: (i) an evaluation by the project manager of the work that has been completed during the period; (ii) measurement of progress prepared internally and/or provided by the third-party service provider; (iii) analyses of data that justify the progress; and (iv) the Company’s judgment. Significant judgments and estimates may be made in determining the accrued balances at the end of any reporting period. Actual results could differ from the estimates made. The Company’s historical clinical accrual estimates have not been materially different from the actual costs.

Stock-Based Compensation

Stock-based payments are accounted for in accordance with the provisions of ASC 718, *Compensation—Stock Compensation*. The fair value of stock-based payments is estimated, on the date of grant, using the Black-Scholes-Merton model. The resulting fair value is recognized ratably over the requisite service period, which is generally the vesting period of the option. The Company has elected to account for forfeitures as they occur.

The Company has elected to use the Black-Scholes-Merton option pricing model to value any options granted. The Company will reconsider use of the Black-Scholes-Merton model if additional information becomes available in the future that indicates another model would be more appropriate or if grants issued in future periods have characteristics that prevent their value from being reasonably estimated using this model.

A discussion of management’s methodology for developing some of the assumptions used in the valuation model follows:

Expected Dividend Yield—The Company has never declared or paid dividends and has no plans to do so in the foreseeable future.

Expected Volatility—Volatility is a measure of the amount by which a financial variable such as share price has fluctuated (historical volatility) or is expected to fluctuate (expected volatility) during a period. Prior to the Company’s initial public offering, there was not a market for the Company’s shares. The Company utilizes the historical volatilities

of a peer group (e.g., several public entities of similar size, complexity, and stage of development), along with the Company's historical volatility since its initial public offering to determine its expected volatility.

Risk-Free Interest Rate—This is the U.S. Treasury rate for the week of each option grant during the year, having a term that most closely resembles the expected life of the option.

Expected Term—This is a period of time that the options granted are expected to remain unexercised. Options granted have a maximum term of 10 years. The Company estimates the expected life of the option term to be 6.25 years. The Company uses a simplified method to calculate the average expected term.

Income Taxes

The Company accounts for income taxes using the asset and liability method in accordance with ASC 740, *Income Taxes*. Deferred income taxes are recognized for the tax consequences in future years of differences between the tax bases of assets and liabilities and the financial reporting amounts at each year-end based on enacted tax laws and statutory tax rates applicable to the periods in which the differences are expected to affect taxable income. A valuation allowance is established when necessary to reduce deferred tax assets to the amount expected to be realized.

The Company accounts for uncertain tax positions pursuant to ASC 740. Financial statement recognition of a tax position taken or expected to be taken in a tax return is determined based on a more-likely-than-not threshold of that tax position being sustained. If the tax position meets this threshold, the benefit to be recognized is measured as the tax benefit having the highest likelihood of being realized upon ultimate settlement with the taxing authority. The Company recognizes interest accrued related to unrecognized tax benefits and penalties in the provision for income taxes.

Comprehensive Loss

Comprehensive loss comprises net loss and other changes in equity that are excluded from net loss. For the years ended December 31, 2019, 2018 and 2017, the Company's net loss was equal to comprehensive loss and, accordingly, no additional disclosure is presented.

Adopted Accounting Standards

In February 2016, the Financial Accounting Standards Board (FASB) issued ASU No. 2016-02, *Leases (Topic 842)*, which generally requires all leases, including operating leases, to be recognized in the statement of financial position as right-of-use assets and lease liabilities by lessees. The provisions of ASU No. 2016-02 were applied using a modified retrospective approach and were adopted by the Company effective January 1, 2019. The Company elected the transition option provided under ASU No. 2018-11, which did not require adjustments to comparative periods or modified disclosures in those comparative periods. The Company elected the practical expedient as an accounting policy election by class of underlying asset to account for each separate lease component of a contract and its associated non-lease component as a single lease component. This practical expedient was applied to all underlying asset classes. Upon adoption of the standard, the Company recorded right-of-use assets and related lease liabilities for operating leases of approximately $3.6 million and $4.3 million, respectively, as of January 1, 2019. The difference between these amounts is comprised of adjustments related to unamortized balances of deferred rent, lease incentives, and prepaid rent existing as of the effective date. The adoption of the standard did not materially affect the Company's net earnings or the statement of cash flows. For further discussion on the adoption of this standard, see Note 6, "Leases."

In June 2018, the FASB issued ASU No. 2018-07, *Compensation – Stock Compensation (Topic 718): Improvements to Nonemployee Share-based Payment Accounting*, to simplify the accounting for share-based payments to nonemployees by aligning it with the accounting for share-based payments to employees, with certain exceptions. The Company adopted this ASU as of January 1, 2019. Upon transition, the Company measured nonemployee awards at fair value as of the adoption date. The adoption of the standard did not materially affect the Company's operating results, cash flows or financial position.

Accounting Standards Not Yet Adopted

In November 2018, the FASB issued ASU No. 2018-18, *Collaborative Arrangements (Topic 808): Clarifying the Interaction between Topic 808 and Topic 606*. The amendment clarifies that certain transactions between collaborative arrangement participants should be accounted for as revenue under Topic 606 when the collaborative arrangement participant is a customer in the context of a unit of account. In those situations, all the guidance in Topic 606 should be applied, including recognition, measurement, presentation and disclosure requirements. The amendment also adds unit-of-account guidance in Topic 808 to align with the guidance in Topic 606 (that is, a distinct good or service) when an entity is assessing whether the collaborative arrangement or a part of the arrangement is within the scope of Topic 606. Lastly, the amendment requires that in a transaction with a collaborative arrangement participant that is not directly related to sales to third parties, presenting the transaction together with revenue recognized under Topic 606 is precluded if the collaborative arrangement participant is not a customer. For public business entities, the amendments are effective for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. The Company is currently evaluating these clarifications in the accounting and presentation for its collaborative arrangements within the scope of Topic 808 but does not expect it will have any material impact.

With the exception of the new standards discussed above, there have been no new accounting pronouncements that have significance, or potential significance, to the Company's financial statements.

3. Net Loss Per Share of Common Stock

Basic net loss per common share is determined by dividing net loss by the weighted-average number of common shares outstanding during the period, without consideration of common stock equivalents. Diluted net income per share is computed by dividing net income by the weighted-average number of common stock equivalents outstanding for the period. The treasury stock method was used to determine the dilutive effect of the Company's stock option grants, restricted stock units and warrants.

The following table sets forth the computation of basic and diluted earnings per share for the years ended December 31, 2019, 2018 and 2017:

	2019	2018	2017
Net loss	$ (57,891,911)	$ (48,273,633)	$ (33,281,068)
Basic and diluted net loss per common share	$ (1.34)	$ (1.18)	$ (1.13)
Basic and diluted weighted average common shares outstanding	43,254,782	41,044,621	29,395,756

The following potentially dilutive securities outstanding at December 31, 2019, 2018 and 2017 have been excluded from the computation of diluted weighted average shares outstanding, as they would be anti-dilutive:

	2019	2018	2017
Warrants	—	—	553,868
Stock options and restricted stock units	5,106,493	3,937,167	3,399,124

4. Prepaid Expenses and Other Current Assets

The following is a summary of the Company's prepaid expenses and other current assets at December 31:

	2019	2018
Prepaid research and development expenses	$ 3,838,835	$ 1,608,768
Other prepaid expenses	301,534	329,634
Other receivables	185,953	413,122
Prepaid expenses and other current assets	$ 4,326,322	$ 2,351,524

5. Property and Equipment

Property and equipment, net consisted of the following at December 31:

	2019	2018
Furniture and fixtures	$ 345,712	$ 334,300
Laboratory equipment	1,409,526	1,389,036
Office equipment	11,085	11,085
Computer equipment	302,009	233,282
Leasehold improvements	616,133	573,165
Property and equipment	2,684,465	2,540,868
Less accumulated depreciation	(1,861,545)	(1,583,642)
Property and equipment, net	$ 822,920	$ 957,226

Depreciation of property and equipment totaled $279,234, $275,123 and $263,541 for the years ended December 31, 2019, 2018 and 2017, respectively.

6. Accrued Expenses

The following is a summary of the Company's accrued expenses at December 31:

	2019	2018
Accrued research and development expenses	$ 5,149,697	$ 3,483,741
Accrued bonuses	2,677,288	1,727,184
Accrued consulting and other professional fees	320,935	140,397
Accrued employee benefits	351,966	385,789
Other accrued expenses	210,904	263,693
Accrued expenses	$ 8,710,790	$ 6,000,804

7. Operating Leases

At the inception of an arrangement, the Company determines whether the arrangement is or contains a lease based on the circumstances present. The Company determines a lease exists if the contract conveys the right to control an identified asset for a period of time in exchange for consideration. Control is considered to exist when the lessee has the right to obtain substantially all of the economic benefits from the use of an identified asset as well as direct the right to use of that asset. Leases with a term greater than one year are recognized on the balance sheet as right-of-use assets, lease liabilities and, if applicable, long-term lease liabilities. The Company has elected not to recognize on the balance sheet leases with terms of one year or less on the lease commencement date. If a contract is considered to be a lease, the Company recognizes a lease liability based on the present value of the future lease payments over the expected lease term, with an offsetting entry to recognize a right-of-use asset.

The interest rate implicit in lease contracts is typically not readily determinable. As such, the Company utilizes the appropriate incremental borrowing rate, which is the rate incurred to borrow on a collateralized basis over a term similar to the term of the lease for which the rate is estimated. Certain adjustments to the right-of-use asset may be required for items such as initial direct costs paid or incentives received.

The Company leases office and research space in Rockville, Maryland under an operating lease with a term from June 15, 2015 through October 31, 2023 (the Lease) that is subject to annual rent increases. The Company has the right to sublease or assign all or a portion of the premises, subject to the conditions set forth in the Lease. The Lease may be terminated early by either the landlord or the Company in certain circumstances. In connection with the Lease, the Company received rent abatement as a lease incentive in the initial year of the Lease.

In March 2016, the Company amended the Lease (the Lease Amendment) to lease additional space as of June 1, 2016. In May 2016, the Company also paid a security deposit of $52,320 to be held until the expiration or termination of the Company's obligations under the Lease. The term of the Lease Amendment for the additional space continues

through October 31, 2023, the same date as for the premises originally leased under the Lease, subject to the Company's renewal option set forth in the Lease. The Company's one-time option to terminate the Lease effective as of October 31, 2020 also applies to the additional space.

The Company identified and applied the following significant assumptions in recognizing the right-of-use asset and corresponding liability for the Lease and Lease Amendment:

- Lease term – The lease term includes both the noncancelable period and, when applicable, cancelable option periods where failure to exercise such option would result in an economic penalty. The Company's renewal option to extend is not reasonably certain of being exercised as of December 31, 2019.

- Incremental borrowing rate – As the Company's lease does not provide an implicit rate, the Company used an incremental borrowing rate (IBR), which is the rate incurred to borrow on a collateralized basis over a term similar to the term of the lease for which the rate is estimated. The Company determined the IBR based on an estimated rate that considered the Company's credit risk in the United States for a collateralized borrowing and lease term similar to the Lease.

With the adoption of ASU 2016-02 on January 1, 2019, the Company recorded a right-of use asset of $3.6 million and corresponding lease liability of $4.3 million by calculating the present value of lease payments, discounted at 8.0%, the Company's IBR, over the expected term of 4.8 years. The Company has elected to use the practical expedient and account for each lease component and related non-lease component as one single component. The lease component results in a right-of-use asset being recorded on the balance sheet and amortized as lease expense on a straight-line basis.

As of December 31, 2019 the weighted-average remaining lease term was 3.83 years. There were no additional operating leases entered into during the year ended December 31, 2019.

The components of lease expense and related cash flows were as follows:

	Year Ended December 31, 2019
Operating lease cost	927,957
Variable lease cost	465,028
Total operating lease cost	$ 1,392,985
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash flows for operating leases	$ 941,089

Maturities of lease liability due under these lease agreements as of December 31, 2019 were as follows:

	Operating Lease Obligation
2020	$ 1,051,142
2021	1,077,420
2022	1,104,356
2023	940,842
2024	—
Thereafter	—
Total	4,173,760
Present value adjustment	(551,118)
Present value of lease payments	$ 3,622,642

8. Stockholders' Equity

Common Stock

At-The-Market Equity Offerings

On March 1, 2016, the Company entered into an at-the-market sales agreement with Cowen and Company, LLC to sell the Company's securities under a shelf registration statement filed in March 2015. During the period from January 1, 2017 through May 23, 2017, the Company issued and sold 1,388,647 shares of common stock under the at-the-market sales agreement. The shares were sold at a weighted average price per share of $5.55, for aggregate net proceeds of $7.4 million, after deducting commissions and offering expenses. The at-the market sales agreement was terminated on May 23, 2017.

On September 28, 2017, the Company entered into a new at-the-market sales agreement with Cowen and Company, LLC to sell the Company's securities under a shelf registration statement filed in September 2017. As of December 31, 2017, the Company had issued and sold 1,600,000 shares of common stock under the at-the-market sales agreement. The shares were sold at a weighted average price per share of $12.50, for aggregate net proceeds of $19.3 million, after deducting commissions and offering expenses. As of December 31, 2019, $80.0 million remained available to be sold under the terms of the September 2017 at-the-market sales agreement. There were no shares sold under the September 2017 Sales Agreement during the years ended December 31, 2019 or 2018.

Public Offerings of Common Stock

In May 2017, the Company completed a public offering in which the Company sold 8,050,000 shares of its common stock at a price to the public of $11.50 per share. The Company received net proceeds of $86.8 million from this offering, after deducting underwriting discounts, commissions and other offering expenses.

In March 2018, the Company completed a public offering in which the Company sold 8,050,000 shares of its common stock at a price to the public of $17.00 per share. The Company received net proceeds of $128.4 million from this offering, after deducting underwriting discounts, commissions and other offering expenses.

Warrants to Acquire Company Stock

In connection with the prior issuance of convertible unsecured promissory notes, the Company issued warrants to purchase shares of common stock. As of December 31, 2017, warrants to purchase an aggregate of 553,868 shares were outstanding, each with an exercise price of $0.33 per share. During the year ended December 31, 2018, all of the outstanding warrants were exercised; a total of 536,564 shares of common stock were issued to stockholders upon the net exercise of 546,709 outstanding warrants, and 7,159 shares of common stock were issued to stockholders upon the cash exercise of outstanding warrants, for total proceeds to the Company of $2,336. The Company no longer has any outstanding warrants to purchase shares of its capital stock.

2003 Stock Incentive Plan

The 2003 Stock Incentive Plan (the 2003 Plan) provided for the grant of incentives and nonqualified stock options and restricted stock awards. The exercise price for incentive stock options must be at least equal to the fair value of the common stock on the grant date. Unless otherwise stated in a stock option agreement, 25% of the shares subject to an option grant will vest upon the first anniversary of the vesting start date and thereafter at the rate of one forty-eighth of the option shares per month as of the first day of each month after the first anniversary. Upon termination of employment by reasons other than death, cause, or disability, any vested options shall terminate 60 days after the termination date. Stock options terminate 10 years from the date of grant. The 2003 Plan expired on May 21, 2013.

A summary of the Company's stock option activity under the 2003 Plan for the year ended December 31, 2019 is as follows:

	OUTSTANDING OPTIONS	WEIGHTED-AVERAGE EXERCISE PRICE	WEIGHTED-AVERAGE REMAINING CONTRACTUAL TERM (YEARS)	AGGREGATE INTRINSIC VALUE (IN THOUSANDS)
Outstanding as of December 31, 2018	667,080	$ 1.24	2.2	
Options exercised	(284,743)	1.12		
Options forfeited	—			
Outstanding, Vested and Exercisable as of December 31, 2019	382,337	1.33	1.3	$ 1,512

During 2019, 2018 and 2017 the Company issued 284,743, 46,131 and 16,608 shares of common stock, respectively, in conjunction with exercises of stock options granted under the 2003 Plan. The Company received cash proceeds from the exercise of these stock options of $318,912, $59,659 and $27,357 during 2019, 2018 and 2017, respectively. Total intrinsic value of the options exercised during the years ended December 31, 2019, 2018 and 2017 was $924,688, $716,920 and $103,638, respectively.

As of December 31, 2019, the options under the 2003 Plan were fully expensed and all options outstanding under the 2003 Plan were fully vested as of December 31, 2017. The total fair value of options that vested in the year ended December 31, 2017 was $1,573. There were no options granted under the 2003 Plan in 2019, 2018 or 2017.

2013 Equity Incentive Plan

The Company's board of directors adopted, and its stockholders approved, its 2013 Equity Incentive Plan (the 2013 Plan) effective on January 9, 2014. The 2013 Plan provides for the grant of incentive stock options within the meaning of Section 422 of the Internal Revenue Code (the Code), to the Company's employees and its parent and subsidiary corporations' employees, and for the grant of nonstatutory stock options, restricted stock awards, restricted stock unit awards, stock appreciation rights, performance stock awards and other forms of stock compensation to its employees, including officers, consultants and directors. The 2013 Plan also provides for the grant of performance cash awards to the Company's employees, consultants and directors. Unless otherwise stated in a stock option agreement, 25% of the shares subject to an option grant will typically vest upon the first anniversary of the vesting start date and thereafter at the rate of one forty-eighth of the option shares per month as of the first day of each month after the first anniversary. Upon termination of employment by reasons other than death, cause, or disability, any vested options shall terminate 90 days after the termination date, unless otherwise set forth in a stock option agreement. Stock options generally terminate 10 years from the date of grant.

Authorized Shares

The maximum number of shares of common stock that may be issued under the 2013 Plan was 1,000,000 shares, plus any shares subject to stock options or similar awards granted under the 2003 Plan that expire or terminate without having been exercised in full or are forfeited to or repurchased by the Company. The number of shares of common stock reserved for issuance under the 2013 Plan will automatically increase on January 1 of each year, beginning on January 1, 2015 and ending on January 1, 2023, by 3% of the total number of shares of common stock outstanding on December 31 of the preceding calendar year, or a lesser number of shares as may be determined by the Company's board of directors. The maximum number of shares that may be issued pursuant to exercise of incentive stock options under the 2013 Plan is 20,000,000. As of January 1, 2020, the number of shares of common stock that may be issued under the 2013 Plan was automatically increased by 1,304,007 shares, representing 3% of the total number of shares of common stock outstanding on January 1, 2020, increasing the number of shares of common stock available for issuance under the 2013 Plan to 6,466,823 shares.

Shares issued under the 2013 Plan may be authorized but unissued or reacquired shares of common stock. Shares subject to stock awards granted under the 2013 Plan that expire or terminate without being exercised in full, or that are paid out in cash rather than in shares, will not reduce the number of shares available for issuance under the 2013 Plan. Additionally, shares issued pursuant to stock awards under the 2013 Plan that the Company repurchases or that are forfeited, as well as shares reacquired by the Company as consideration for the exercise or purchase price of a stock

award or to satisfy tax withholding obligations related to a stock award, will become available for future grant under the 2013 Plan.

Stock Options

A summary of the Company's stock option activity under the 2013 Plan for the year ended December 31, 2019 is as follows:

	OUTSTANDING OPTIONS	WEIGHTED-AVERAGE EXERCISE PRICE	WEIGHTED-AVERAGE REMAINING CONTRACTUAL TERM(YEARS)	AGGREGATE INTRINSIC VALUE (IN THOUSANDS)
Outstanding as of December 31, 2018	3,265,254	$ 8.39	7.1	
Options granted	1,191,071	10.96		
Options exercised	(16,606)	5.66		
Options forfeited	(40,113)	12.86		
Outstanding as of December 31, 2019	4,399,606	10.43	6.8	$ 74
Vested or expected to vest as of December 31, 2019	4,399,606	10.43	6.8	$ 74
Exercisable as of December 31, 2019	2,671,995	9.21	5.6	$ 68

The weighted-average fair value of the options granted during the years ended December 31, 2019, 2018 and 2017 was $7.17, $12.90 and $4.76 per share, respectively, applying the Black-Scholes-Merton option pricing model utilizing the following weighted-average assumptions:

	2019	2018	2017
Expected term	6.25 years	6.25 years	6.25 years
Expected volatility	71.15%	73.75%	75.20%
Risk-free interest rate	2.54%	2.55%	2.08%
Expected dividend yield	0%	0%	0%

As of December 31, 2019, there was $11,385,475 of total unrecognized compensation expense related to unvested options that will be recognized over a weighted-average period of approximately 2.5 years. The total fair value of options that vested in the years ended December 31, 2019, 2018 and 2017 was $6,159,610, $3,003,632 and $3,506,568, respectively. During the years ended December 31, 2019, 2018 and 2017, the Company received cash of $94,001, $962,530 and $346,019, respectively, and issued 16,606, 144,182 and 54,521 shares of common stock, respectively, in conjunction with exercises of stock options granted under the 2013 Plan. The intrinsic value of the options exercised for the years ended December 31, 2019, 2018 and 2017 was $97,429, $1,344,026 and $385,701, respectively.

Restricted Stock Units (RSUs)

A restricted stock unit (RSU) is a stock award that entitles the holder to receive shares of the Company's common stock as the award vests. The fair value of each RSU is based on the closing price of the Company's common stock on the date of grant. In September 2019, the Company granted an aggregate of 332,106 RSUs with service conditions to the Company's non-executive employees. The RSUs granted in September 2019 vest over a two-year period, with one-third vesting on the first anniversary of the date of grant and the remaining two-thirds vesting on the second anniversary of the date of grant, provided that the employee remains employed with the Company at the applicable vesting date. As of

December 31, 2019, there was $1,258,743 of total unrecognized compensation expense associated with these RSU grants that will be recognized over a weighted-average period of approximately 1.7 years.

The following is a summary of RSU activity for the 2013 Plan for the year ended December 31, 2019:

	Number of Shares Underlying RSUs	Weighted-Average Grant Date Fair Value
Unvested at December 31, 2018	4,833	$ 4.61
Granted	332,106	4.53
Forfeited	(7,556)	4.53
Vested	(4,833)	4.61
Unvested at December 31, 2019	324,550	4.53

Total stock-based compensation expense associated with stock options and RSUs was classified as follows on the statement of operations for the years ended December 31:

	2019	2018	2017
Research and development expense	$ 2,402,242	$ 1,709,390	$ 1,280,909
General and administrative expense	3,812,848	2,877,708	2,479,893
Total stock-based compensation expense	$ 6,215,090	$ 4,587,098	$ 3,760,802

9. Income Taxes

The components of the gross deferred tax asset and related valuation allowance at December 31 were as follows:

	2019	2018
Deferred income tax assets:		
Net operating loss carryforward	$ 53,391,629	$ 41,687,577
Capitalized start-up costs	1,308,102	1,501,895
Patent amortization	104,419	119,888
Research and orphan drug credits	35,211,702	28,123,082
Stock-based compensation	4,935,232	3,293,221
Operating lease liabilities	996,861	—
Accrued bonus	736,723	—
Other	136,641	146,964
Gross deferred income tax assets	96,821,309	74,872,627
Valuation allowance	(95,850,031)	(74,872,627)
Net deferred income tax assets	971,278	—
Deferred income tax liabilities:		
Operating lease right-of-use assets	(827,195)	—
Property and equipment	(144,083)	—
Gross deferred income tax liabilities	(971,278)	—
Net deferred income tax asset/(liability)	$ —	$ —

Based on the Company's operating history and management's expectation regarding future profitability, management believes the Company's deferred tax assets will not be realizable under ASC 740, *Income Taxes*. Accordingly, a full valuation allowance has been established as of December 31, 2019 and 2018.

As of December 31, 2019, the Company had $194.0 million of U.S. Federal and state net operating losses, $9.1 million of research and development tax credits and $26.1 million of orphan drug tax credits available to carry forward. A portion of the net operating loss carryforwards will begin to expire in 2026, the research and development tax credits in 2023 and the orphan drug tax credit in 2033. Under current federal income tax laws, federal net operating losses incurred in 2018 and in future years may be carried forward, indefinitely, but the deductibility of such federal net operating losses is limited.

The Company's tax attributes, including net operating losses and credits, are subject to any ownership changes as defined under Internal Revenue Code Sections 382 and 383. A change in ownership could affect the Company's ability to utilize its net operating losses and credits. As of December 31, 2019, the Company does not believe that an ownership change has occurred. Any future ownership changes may cause a limitation on the Company's ability to utilize existing tax attributes.

The Company files income tax returns in the U.S. federal jurisdiction and in the State of Maryland. The Company's federal income tax returns for tax years 2003 and after remain subject to examination by the U.S. Internal Revenue Service. The Company's Maryland income tax returns for the tax years 2006 and thereafter remain subject to examination by the Comptroller of Maryland. In addition, all of the net operating losses, research and development tax credit and orphan drug credit carryforwards that may be used in future years are still subject to adjustment.

The Company did not have unrecognized tax benefits as of December 31, 2019 and 2018, and does not anticipate this to change significantly over the next 12 months. The Company will recognize interest and penalties accrued on any unrecognized tax benefits as a component of income tax expense. Reconciliations between the statutory federal income tax rate and the effective income tax rate of income tax expense is as follows as of December 31:

	2019	2018	2017
U.S. Federal statutory tax rate	21.0 %	21.0 %	34.0 %
State taxes	5.7	5.7	4.4
Research credit	0.8	0.8	1.3
Orphan drug credit	8.8	10.4	11.5
Other	(0.1)	0.6	0.3
Stock-based compensation	—	(0.1)	(0.7)
Change in valuation allowance	(36.2)	(38.4)	(5.1)
Effective change due to corporate tax rate reduction	—	—	(45.7)
Provision for income taxes	— %	— %	— %

10. Research and License Agreements

The Company and Pfizer Inc. (Pfizer) entered into a license agreement (the Pfizer Agreement) in October 2011, which provided Pfizer an exclusive worldwide license to rivipansel for vaso-occlusive crisis associated with sickle cell disease and for other diseases for which the drug candidate may be developed. The Company was responsible for completion of a Phase 2 clinical trial, after which Pfizer assumed all further development and commercialization responsibilities. Upon execution of the Pfizer Agreement, the Company received an up-front payment of $22.5 million. The Pfizer Agreement also provided for potential payments upon the achievement of specified development, regulatory and commercial milestones. The Company did not recognize any revenue under the Pfizer Agreement during the years ended December 31, 2019, 2018 or 2017. On August 2, 2019, Pfizer announced that the pivotal Phase 3 clinical trial to evaluate the efficacy and safety of rivipansel did not meet its primary or key secondary efficacy endpoints. On February 5, 2020, the Company received written notice from Pfizer of the termination of the Pfizer Agreement effective as of April 5, 2020. The Company will work with Pfizer to effectuate any necessary transition activities regarding the subject matter of the License Agreement, and will be determining what, if any, next steps to take with respect to the rivipansel program after reviewing the Phase 3 data more completely.

The Company has entered into a research services agreement (the Research Agreement) with the University of Basel (the University) for biological evaluation of selectin antagonists. Certain patents covering the rivipansel compound remain subject to provisions of the Research Agreement. Under the terms of the Research Agreement, the Company will owe a 10% payment to the University for all future milestone and royalty payments received from Pfizer with respect to rivipansel. No payments were due to the University during the years ended December 31, 2019, 2018 and 2017. Although the Research Agreement remains in effect, following the termination of the Pfizer Agreement, the Company does not expect that it will be obligated to make any future payments to the University.

11. Employee Benefit Plan

The Company has a defined contribution plan under the Internal Revenue Code Section 401(k). This plan covers substantially all employees who meet minimum age and service requirements and allows participants to defer a portion of their annual compensation on a pre-tax basis. For the years ended December 31, 2018 and 2017, the Company made a discretionary match of 50% up to the first 3% of employee contributions. For the year ended December 31, 2019, the Company matched 50% up to the first 6% of employee contributions. All matching contributions have been paid by the Company. The Company's matching contributions vest in full at the employee's third anniversary of employment and all employer contributions thereafter vest immediately. The total Company matching contributions were approximately $219,000, $94,000 and $88,000 for the years ended December 31, 2019, 2018 and 2017, respectively.

12. Quarterly Financial Information (Unaudited)

Summarized quarterly financial information for each of the years ended December 31, 2019 and 2018 are as follows:

	Quarter Ended			
	December 31, 2019	September 30, 2019	June 30, 2019	March 31, 2019
Revenue	$ —	$ —	$ —	$ —
Net loss	$ (14,726,317)	$ (13,251,882)	$ (15,829,815)	$ (14,083,897)
Loss per share—basic and diluted	$ (0.34)	$ (0.31)	$ (0.37)	$ (0.33)

	Quarter Ended			
	December 31, 2018	September 30, 2018	June 30, 2018	March 31, 2018
Revenue	$ —	$ —	$ —	$ —
Net loss	$ (13,906,915)	$ (11,575,111)	$ (11,278,763)	$ (11,512,844)
Loss per share—basic and diluted	$ (0.32)	$ (0.27)	$ (0.26)	$ (0.33)

13. Subsequent Events

On January 2, 2020, the Company entered into a collaboration and license agreement with Apollomics (Hong Kong) Limited (Apollomics) for the exclusive right to develop, manufacture and commercialize the Company's drug candidates uproleselan and GMI-1687 within the territories of China, Taiwan, Hong Kong and Macau (collectively, Greater China). In addition, the Company has granted to Apollomics a non-exclusive license to conduct preclinical research outside of Greater China with respect to the licensed drug candidates for the purpose of developing them for use in Greater China. Apollomics made an upfront payment to the Company of $9.0 million. In addition to the upfront payment, the Company is entitled to receive up to an aggregate of (i) $35.0 million upon the achievement of specified milestones related to the development and regulatory approval of uproleselan in Greater China, (ii) $40.0 million upon the achievement of specified milestones related to the development and regulatory approval of GMI-1687 in Greater China and (iii) $105.0 million upon the achievement of specified net sales thresholds for all licensed products in Greater China. In the event that uproleselan or GMI-1687 is approved for marketing in Greater China, the Company will be entitled to receive royalty payments based on a tiered percentage of annual net sales in each region within Greater China, with such percentage ranging from the high single digits to 15% subject to reduction in the event of generic competition in a particular region and in other specified circumstances.

Exhibit 4.2

DESCRIPTION OF CERTAIN OF REGISTRANT'S SECURITIES

General

The following is a summary of information concerning the capital stock of GlycoMimetics, Inc. The summaries and descriptions below do not purport to be complete statements of the relevant provisions of our amended and restated certificate of incorporation (our "restated certificate") and amended and restated bylaws (our "restated bylaws"), and are entirely qualified by these documents.

Authorized Capital Stock

Our restated certificate authorizes us to issue up to 100,000,000 shares of common stock, $0.001 par value per share, and 5,000,000 shares of preferred stock, $0.001 par value per share, all of which shares of preferred stock are undesignated. Our board of directors may establish the rights and preferences of the preferred stock from time to time.

Description of Common Stock

Voting Rights

Each holder of our common stock is entitled to one vote for each share on all matters submitted to a vote of the stockholders, including the election of directors. Under the restated certificate and our restated bylaws, our stockholders do not have cumulative voting rights. Because of this, the holders of a majority of the shares of our common stock entitled to vote in any election of directors can elect all of the directors standing for election, if they should so choose.

Dividends

Subject to preferences that may be applicable to any then-outstanding shares of preferred stock, holders of common stock are entitled to receive ratably those dividends, if any, as may be declared from time to time by the board of directors out of legally available funds.

Liquidation

In the event of our liquidation, dissolution or winding up, holders of common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities and the satisfaction of any liquidation preference granted to the holders of any then-outstanding shares of preferred stock.

Rights and Preferences

Holders of common stock have no preemptive, conversion or subscription rights and there are no redemption or sinking fund provisions applicable to the common stock. The rights, preferences and privileges of the holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate in the future.

Description of Preferred Stock

Our board of directors has the authority, without further action by our stockholders, to issue up to 5,000,000 shares of preferred stock in one or more series, to establish from time to time the number of shares to be included in each such series, to fix the rights, preferences and privileges of the shares of each wholly unissued series and any qualifications, limitations or restrictions thereon, and to increase or decrease the number of shares of any such series, but not below the number of shares of such series then outstanding.

Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of our common stock. The purpose of authorizing our board of directors to issue preferred stock and determine its rights and preferences is to eliminate delays associated with a stockholder vote on specific issuances. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring or preventing a change in control of us and may adversely affect the market price of our common stock and the voting and other rights of the holders of our common stock. It is not possible to state the actual effect of the issuance of any shares of preferred stock on the rights of holders of common stock until the board of directors determines the specific rights attached to that preferred stock.

Anti-Takeover Provisions

Our restated certificate provides for our board of directors to be divided into three classes with staggered three-year terms. Only one class of directors is elected at each annual meeting of our stockholders, with the other classes continuing for the remainder of their respective three-year terms. Because our stockholders do not have cumulative voting rights, stockholders holding a majority of the shares of common stock outstanding are able to elect all of our directors. The restated certificate and the restated bylaws also provide that directors may be removed by the stockholders only for cause upon the vote of 66 2/3% or more of our outstanding common stock. Furthermore, the authorized number of directors may be changed only by resolution of the board of directors, and vacancies and newly created directorships on the board of directors may, except as otherwise required by law or determined by the board, only be filled by a majority vote of the directors then serving on the board, even though less than a quorum.

The restated certificate and restated bylaws provide that all stockholder actions must be effected at a duly called meeting of stockholders and eliminate the right of stockholders to act by written consent without a meeting. Our restated bylaws also provide that only our chairman of the board, chief executive officer or the board of directors pursuant to a resolution adopted by a majority of the total number of authorized directors may call a special meeting of stockholders.

The restated bylaws provide that stockholders seeking to present proposals before a meeting of stockholders to nominate candidates for election as directors at a meeting of stockholders must provide timely advance notice in writing, and specify requirements as to the form and content of a stockholder’s notice.

The restated certificate and restated bylaws provide that the stockholders cannot amend many of the provisions described above except by a vote of 66 2/3% or more of our outstanding common stock.
The combination of these provisions makes it more difficult for our existing stockholders to replace our board of directors as well as for another party to obtain control of us by replacing our board of directors. Since our board of directors has the power to retain and discharge our officers, these provisions could also make it more difficult for existing stockholders or another party to effect a change in management. In addition, the authorization of undesignated preferred stock makes it possible for our board of directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change our control.

These provisions are intended to enhance the likelihood of continued stability in the composition of our board of directors and its policies and to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to reduce our vulnerability to hostile takeovers and to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and may have the effect of delaying changes in our control or management. As a consequence, these provisions may also inhibit fluctuations in the market price of our stock that could result from actual or rumored takeover attempts. We believe that the benefits of these provisions, including increased protection of our potential ability to negotiate with the proponent of an unfriendly or unsolicited proposal to acquire or restructure our company, outweigh the disadvantages of discouraging takeover proposals, because negotiation of takeover proposals could result in an improvement of their terms.

Choice of Forum

The restated certificate provides that the Court of Chancery of the State of Delaware will be the exclusive forum for:

- any derivative action or proceeding brought on our behalf;
- any action asserting a breach of fiduciary duty;
- any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, the restated certificate or the restated bylaws; or
- any action asserting a claim against us that is governed by the internal affairs doctrine.

The enforceability of similar choice of forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that, in connection with any action, a court could find the choice of forum provisions contained in our restated certificate to be inapplicable or unenforceable in such action.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company. The transfer agent's address is 6201 15th Avenue, Brooklyn, NY 11219.

Nasdaq Global Market Listing

Our common stock is listed on the Nasdaq Global Market under the trading symbol "GLYC."

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT , MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO GLYCOMIMETICS, INC. IF PUBLICLY DISCLOSED.

COLLABORATION AND LICENSE AGREEMENT[1]

This **COLLABORATION AND LICENSE AGREEMENT** (the "**Agreement**") is entered into as of January 2, 2020 (the "**Effective Date**") by and between **GLYCOMIMETICS, INC.,** a corporation organized and existing under the laws of Delaware and having a place of business at 9708 Medical Center Drive, Rockville, MD 20850 ("**GlycoMimetics**"), and **APOLLOMICS (HONG KONG), LIMITED,** a Hong Kong entity along with its Affiliates having one of its places of business at 989 East Hillsdale Blvd. Suite 220, Foster City, CA 94404 ("**Apollomics**"). GlycoMimetics and Apollomics are sometimes referred to herein individually as a "**Party**" and collectively as the "**Parties**."

RECITALS

WHEREAS, GlycoMimetics is currently conducting research and development of Uproleselan (referred to internally by GlycoMimetics as GMI-1271) and a follow-on compound (referred to internally by GlycoMimetics as GMI-1687);

WHEREAS, Apollomics is a biopharmaceutical company with experience in developing biopharmaceutical products in Greater China; and

WHEREAS, Apollomics desires to obtain from GlycoMimetics an exclusive license to Develop, Manufacture, and Commercialize Licensed Products in the Apollomics Territory (with each capitalized term as respectively defined below), and a non-exclusive license to conduct pre-clinical research in the GlycoMimetics Territory (for the purposes stated herein) and GlycoMimetics is willing to grant such license to Apollomics, all under the terms and conditions of this Agreement.

NOW, THEREFORE, in consideration of the foregoing premises and the mutual promises, covenants and conditions contained in this Agreement, the Parties agree as follows:

ARTICLE 1
DEFINITIONS

1.1 "**Accounting Standards**" means U.S. generally accepted accounting principles ("**GAAP**") or, to the extent that Apollomics adopts International Financial Reporting Standards ("**IFRS**"), then "Accounting Standards" means IFRS, in either case consistently applied.

[1] Exhibits and schedules have been omitted pursuant to Item 601(a)(5) of Regulation S-K and will be furnished on a supplemental basis to the Securities and Exchange Commission upon request.

1.2 "**Act**" shall mean, as applicable, the United States Federal Food, Drug and Cosmetic Act, 21 U.S.C. §§301 et seq., and/or the Public Health Service Act, 42 U.S.C. §§262 et seq., as such may be amended from time to time.

1.3 "**Adverse Risk**" means any risk of a [*******] adverse effect on the Development, procurement, or maintenance of Regulatory Approval, Manufacture, or Commercialization of Licensed Products [*******].

1.4 "**Affiliate**" means, with respect to a particular Party, a Person that controls, is controlled by, or is under common control with such Party. For the purposes of this definition, the word "control" (including, with correlative meaning, the terms "controlled by" or "under common control with") means the actual power, either directly or indirectly through one (1) or more intermediaries, to direct or cause the direction of the management and policies of such entity, whether by the ownership of fifty percent (50%) or more of the voting stock of such entity, or by contract, or otherwise. For clarity, once a Person ceases to be an Affiliate of a Party, then, without any further action, such Person shall cease to have any rights, including license and sublicense rights, under this Agreement by reason of being an Affiliate of such Party.

1.5 "**Anti-Corruption Laws**" means laws, regulations, or orders prohibiting the provision of a financial or other advantage for a corrupt purpose or otherwise in connection with the improper performance of a relevant function, including without limitation, the *Corruption of Foreign Public Officials Act (CFPOA)*, the *US Foreign Corrupt Practices Act (FCPA)*, the *UK Bribery Act 2010*, and similar laws governing corruption and bribery, whether public, commercial or both, to the extent applicable.

1.6 "**Apollomics Patents**" means any Patents that claim Apollomics Inventions.

1.7 "**Apollomics Territory**" means, collectively, mainland China, Taiwan, Hong Kong and Macau (each a "**Region**").

1.8 "**Applicable Law**" means, with respect to a given country, the applicable Laws that may be in effect from time to time in such country and that relate to a Party's activities under this Agreement, including any Laws of the Regulatory Authorities of such country.

1.9 "**Background Intellectual Property**" means, with respect to a Party, any and all Information, inventions, and discoveries, in each case whether or not patentable, and any Patents or other intellectual property rights therein, in each case Controlled by such Party as of the Effective Date or acquired, made, conceived, or reduced to practice during the Term independent of this Agreement.

1.10 "**Business Day**" means a day other than Saturday, Sunday or any day that banks in Rockville, Maryland USA or Shanghai, China are required or permitted to be closed.

1.11 "**Calendar Quarter**" means each successive period of three (3) consecutive calendar months ending on March 31, June 30, September 30, or December 31.

1.12 "**Change of Control**" means, with respect to either Party: (a) the sale of all or substantially all of such Party's assets or business relating to this Agreement (other than to an

Affiliate of such Party); (b) a merger, reorganization, or consolidation involving such Party in which the voting securities of such Party outstanding immediately prior thereto cease to represent at least fifty percent (50%) of the combined voting power of the surviving entity immediately after such merger, reorganization, or consolidation; or (c) a Person, or group of Persons, acting in concert acquire more than fifty percent (50%) of the voting equity securities or management control of such Party. Notwithstanding anything to the contrary herein, an initial public offering shall not constitute a Change of Control for purposes of this Agreement.

1.13 "**Clinical Trial**" means a Phase 1 Clinical Trial, Phase 2 Clinical Trial, Phase 3 Clinical Trial, Phase 4 Clinical Trial, or Pivotal Clinical Trial, or any combination thereof.

1.14 "**CMC Information**" means Information related to the chemistry, manufacturing and controls of the Licensed Products, as specified by the FDA, NMPA and other applicable Regulatory Authorities.

1.15 "**Commercialization**" means all activities undertaken before and after obtaining Regulatory Approvals relating specifically to the pre-launch, launch, promotion, detailing, medical education and medical liaison activities, marketing, pricing, reimbursement, sale, and distribution of Licensed Products, including strategic marketing, sales force detailing, advertising, market Licensed Product support, all customer support, Licensed Product distribution, and invoicing and sales activities; *provided*, *however*, "**Commercialization**" shall exclude any activities relating to the Manufacture or Development of Licensed Product. "**Commercialize**" and "**Commercializing**" shall have the correlative meanings. For clarity, "**Commercialization**" shall exclude all activities undertaken in connection with Voluntary Phase 4 Clinical Trials.

1.16 "**Commercially Reasonable Efforts**" means, with respect to either Party's obligations under this Agreement, the carrying out of such obligations with a level of efforts and resources consistent with the commercially reasonable practices of a similarly situated company in the pharmaceutical industry for the active and diligent commercialization of a similarly situated branded pharmaceutical product as the Licensed Product at a similar stage of commercialization, taking into account efficacy, safety, present and future market potential, competitive market conditions, the profitability of the product in light of pricing and reimbursement issues, and all other relevant factors (but not taking in account any payment owed to GlycoMimetics under this Agreement or any other pharmaceutical product that Apollomics is then researching, developing or commercializing, alone or with one or more collaborators).

1.17 "**Common Technical Document**" or "**CTD**" means a set of specifications for application dossier adopted by the ICH for organizing applications of pharmaceuticals for human use to regulatory authorities.

1.18 "**Competing Product**" means any product or compound, other than a Licensed Product, that [*******].

1.19 "**Completion**" means, with respect to a Clinical Trial, trial database lock.

1.20 "**Confidential Information**" of a Party means any and all Information of such Party or its Affiliates that is disclosed to the other Party or its Affiliates under this Agreement, whether in oral, written, graphic, or electronic form except for Information that meets the

exceptions under Section 12.1(a)-12.1(e). In addition, all Information disclosed by a Party or its Affiliates pursuant to the confidentiality agreement between the Parties dated [***] (the "**Confidentiality Agreement**") shall be deemed to be Confidential Information of such Party disclosed hereunder; *provided, however,* that any use or disclosure of any such Information that is authorized under Article 12, including the exceptions under Section 12.1(a)-12.1(e), shall not be restricted by, or be deemed a violation of, the Confidentiality Agreement. For clarity, GlycoMimetics Licensed Know-How shall be deemed Confidential Information of GlycoMimetics.

1.21 "**Control**" means, with respect to any material, Information, Patent or other intellectual property right, possession of the right, whether directly or indirectly, and whether by ownership, license, or otherwise, to grant a license, sublicense, or other right to or under, such material, Information, Patent, or intellectual property right without violating the terms of any existing agreement or other arrangement with any Third Party; *provided* that, with respect to any material, Information, Patent or other intellectual property right obtained by GlycoMimetics after the Effective Date from a Third Party, GlycoMimetics shall be deemed to Control such material, Information, Patent or other intellectual property right only if it possesses the right to grant such license, sublicense, or other right thereto [***].

1.22 "**Cover**" means, with respect to a Patent and a Licensed Product, that the Manufacture, use, offer for sale, sale or importation of such Licensed Product, absent a license to such Patent or Licensed Product, would infringe a Valid Claim in such Patent; *provided, however,* that in determining whether a claim of a pending patent application would be infringed, it shall be treated as if issued in the form then currently being prosecuted. "**Covered**" and "**Covering**" shall have the correlative meanings.

1.23 "**CTA**" means a Clinical Trial Application which provides comprehensive information about the investigational medicinal product(s) and planned trial, enabling Regulatory Authorities to assess the acceptability of conducting the applicable study.

1.24 "**Data**" means all data, including CMC data, non-clinical data, preclinical data and clinical data, generated by or on behalf of a Party or its Affiliates or their respective sublicensees pursuant to activities conducted under this Agreement. For clarity, Data does not include any patentable inventions.

1.25 "**Development**" means all activities conducted after the Effective Date relating to preclinical and clinical trials, toxicology testing, statistical analysis, publication and presentation of study results with respect to Licensed Products, and the reporting, preparation and submission of regulatory applications (including any CMC Information) for obtaining, registering and maintaining Regulatory Approval of Licensed Products, including the conduct of Phase 4 Clinical Trials; *provided, however*, "**Development**" shall exclude any activities relating to the Manufacture of Licensed Product or Commercialization of the Licensed Product. "**Develop**" and "**Developing**" shall have the correlative meanings. For clarity, "**Development**" shall include all activities undertaken in connection with Voluntary Phase 4 Clinical Trials.

1.26 "**Divest**" means, for purposes of Section 2.5, the sale or transfer of rights to the Competing Program to a Third Party where neither the assigning Party nor its assignee have the

right to engage, and neither the assigning Party nor its assignee in fact engage, in any management, governance or decision-making activities in connection with such Competing Program in the Apollomics Territory. "**Divestiture**" shall have the correlative meaning.

1.27 "**Executive Officers**" means the Chief Executive Officer of GlycoMimetics and Chief Executive Officer of Apollomics or their respective designees.

1.28 "**FDA**" means the U.S. Food and Drug Administration or any successor entity thereto.

1.29 "**Field**" means all therapeutic and prophylactic uses of the Licensed Compounds in humans (regardless of form or method of administration).

1.30 "**First Commercial Sale**" means the first sale of a Licensed Product in the Apollomics Territory to a Third Party after Regulatory Approval has been obtained in the Apollomics Territory.

1.31 "**Fiscal Year**" means Apollomics' fiscal year that starts on January 1 and ends on December 31.

1.32 "**GCP**" or "**Good Clinical Practices**" means the then-current standards, practices and procedures promulgated or endorsed by the FDA as set forth in the guidelines entitled "Guidance for Industry E6 Good Clinical Practice: Consolidated Guidance," including related regulatory requirements imposed by the FDA and comparable regulatory standards, practices and procedures promulgated by the NMPA or other Regulatory Authority applicable to the Apollomics Territory, as they may be updated from time to time, including applicable quality guidelines promulgated under the ICH.

1.33 "**GLP**" or "**Good Laboratory Practices**" means the then-current good laboratory practice standards promulgated or endorsed by the FDA as defined in 21 C.F.R. Part 58, and comparable regulatory standards promulgated by NMPA or other Regulatory Authority applicable to the Apollomics Territory, as may be updated from time to time, including applicable quality guidelines promulgated under the ICH.

1.34 "**GlycoMimetics Development Technology**" means (a) all Information (including Data and Regulatory Materials) that (i) (1) is Controlled by GlycoMimetics or its Affiliates as of the Effective Date or (2) becomes Controlled by GlycoMimetics or its Affiliates during the Term, and (ii) is reasonably necessary or useful for preclinical research of Licensed Products in the Field in the GlycoMimetics Territory; and (b) all Patents that (i) (1) are Controlled by GlycoMimetics or its Affiliates as of the Effective Date or (2) become Controlled by GlycoMimetics or its Affiliates during the Term, and (ii) Cover preclinical research of Licensed Products in the Field in the GlycoMimetics Territory, including GlycoMimetics' interest in the Joint Patents and any Patents claiming any GlycoMimetics Inventions in the Field in the GlycoMimetics Territory.

1.35 "**GlycoMimetics Licensed Know-How**" means all Information (including Data and Regulatory Materials) that (a) (i) is Controlled by GlycoMimetics or its Affiliates as of the Effective Date or (ii) becomes Controlled by GlycoMimetics or its Affiliates during the Term, and

(b) is reasonably necessary or useful for the Development, Manufacture, or Commercialization of Licensed Products in the Field in the Apollomics Territory.

1.36 "**GlycoMimetics Licensed Patents**" means all Patents that (a) (i) are Controlled by GlycoMimetics or its Affiliates as of the Effective Date or (ii) become Controlled by GlycoMimetics or its Affiliates during the Term, and (b) Cover the Development, Manufacture, or Commercialization of Licensed Products in the Field in the Apollomics Territory, including GlycoMimetics' interest in the Joint Patents and any Patents claiming any GlycoMimetics Inventions in the Field in the Apollomics Territory. GlycoMimetics Licensed Patents existing as of the Effective Date are set forth in **Exhibit A**, which GlycoMimetics shall keep updated from time to time during the Term.

1.37 "**GlycoMimetics Technology**" means the GlycoMimetics Licensed Know-How and GlycoMimetics Licensed Patents.

1.38 "**GlycoMimetics Territory**" means the world except for the Apollomics Territory.

1.39 "**GMI-1271**" means GlycoMimetics' proprietary compound Uproleselan, an E-selectin antagonist, having the chemical structure set forth in **Exhibit B**.

1.40 "**GMI-1687**" means GlycoMimetics' proprietary antagonist of E-selectin and follow-on compound to GMI-1271, having the chemical structure set forth in **Exhibit B**.

1.41 "**Government Official**" means (a) any official or employee of any Governmental Authority, or any department, agency, or instrumentality thereof (including without limitation commercial entities owned or controlled, directly or indirectly, by a Governmental Authority), (b) any political party or official thereof, or any candidate for political office, or (c) any official or employee of any public international organization.

1.42 "**Governmental Authority**" means any multi-national, national, federal, state, local, municipal, provincial or other governmental authority of any nature (including any governmental division, prefecture, subdivision, department, agency, bureau, branch, office, commission, council, court or other tribunal).

1.43 "**ICH**" means International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use.

1.44 "**Indication**" means a separately defined, well-categorized class of human disease or condition for which a separate MAA (including any extensions or supplements) is required to be filed with a Regulatory Authority. For clarity, if an MAA is approved for a Licensed Product in a particular Indication and patient population, a label expansion for such Licensed Product to include such Indication in a different patient population shall not be considered a separate Indication.

1.45 "**Information**" means any data, results, technology, business or financial information or information of any type whatsoever, in any tangible or intangible form, including know-how, copyrights, trade secrets, practices, techniques, methods, processes, inventions, developments, specifications, formulae, software, algorithms, marketing reports, expertise,

technology, test data (including pharmacological, biological, chemical, biochemical, clinical test data and data resulting from non-clinical studies), CMC Information, stability data and other study data and procedures.

1.46 "**Initiation**" means, with respect to a Clinical Trial, the first screening visit for the first patient in such Clinical Trial.

1.47 "**Inventions**" means any inventions and/or discoveries, including processes, manufacture, composition of matter, Information, methods, assays, designs, protocols, and formulas, and improvements or modifications thereof, patentable or otherwise, that are generated, developed, conceived or reduced to practice (constructively or actually) by or on behalf of a Party or its Affiliates or their respective sublicensees (a) pursuant to activities conducted under this Agreement, or (b) in connection with the Development, Manufacture, and Commercialization of Licensed Product, in each case of (a) and (b), including all rights, title and interest in and to the intellectual property rights therein and thereto; *provided*, *however,* that Inventions shall exclude Data.

1.48 "**Joint Patents**" means any Patents that claim Joint Inventions.

1.49 "**Laws**" means all laws, statutes, rules, regulations, ordinances and other pronouncements having the effect of law of any federal, national, multinational, state, provincial, county, municipal, city or other political subdivision, domestic or foreign.

1.50 "**Licensed Compound**" means (a) GMI-1271, or (b) GMI-1687, including salt forms of any of the foregoing.

1.51 "**Licensed Product**" shall mean (a) the Licensed Compound, or (b) any pharmaceutical composition or preparation containing or comprising the Licensed Compound as an active pharmaceutical ingredient ("**API**"), whether as its sole API or in combination with one (1) or more other APIs, in final finished form.

1.52 "**Manufacture**" and "**Manufacturing**" mean activities directed to manufacturing, processing, filling, finishing, packaging, labeling, quality control, quality assurance testing and release, post-marketing validation testing, inventory control and management, storing and transporting any Licensed Product, including oversight and management of vendors therefor.

1.53 "**Manufacturing Cost**" means, with respect to a particular Licensed Product (whether as active pharmaceutical ingredient or finished form) supplied by GlycoMimetics pursuant to Section 7.1: (a) if GlycoMimetics or its Affiliate Manufactures the applicable Licensed Product, the actual manufacturing cost of such Licensed Product (as determined in accordance with U.S. GAAP consistently applied with its other products); or (b) if a Third Party Manufactures such Licensed Product, the actual transfer price paid by GlycoMimetics or its Affiliate to such Third Party for the Manufacture of such Licensed Product without mark-up.

1.54 "**Marketing Authorization Application**" or "**MAA**" means a New Drug Application ("**NDA**") or any other application to the appropriate Regulatory Authority for approval to market a Licensed Product, but excluding pricing approvals.

1.55 "**Net Sales**" means [***].

Notwithstanding the foregoing, amounts received or invoiced by Apollomics, its Affiliates, or their respective sublicensees for the sale of Licensed Product among Apollomics, its Affiliates or their respective sublicensees shall not be included in the computation of Net Sales hereunder unless the purchasing entity is the end-user. For purposes of determining Net Sales, the Licensed Product shall be deemed to be sold when billed or invoiced. Net Sales shall be accounted for in accordance with standard Apollomics practices for operation by Apollomics, its Affiliates or their respective sublicensees, as practiced in the Apollomics Territory, but in any event in accordance with Accounting Standards consistently applied in the Apollomics Territory. For clarity, a particular item may only be deducted once in the calculation of Net Sales. Notwithstanding anything to the contrary in the foregoing, to the extent any amounts deducted pursuant to subsections (d) or (g) above are subsequently recovered by Apollomics, its Affiliates, or their respective sublicensees during the Term, such recovered amounts shall be deemed "Net Sales" for the subsequent Calendar Quarter; *provided* that, if no royalties are owed by Apollomics for such subsequent Calendar Quarter pursuant to Section 8.4, Apollomics shall promptly refund such recovered amounts to GlycoMimetics.

The transfer of any Licensed Product to an Affiliate, sublicensee, or other Third Party (x) in connection with the research, development or testing of a Licensed Product (including, without limitation, the conduct of Clinical Trials), (y) for purposes of distribution as promotional samples, or (z) at no charge for indigent or similar public support or compassionate use programs, will not, in any case, be considered a Net Sale of a Licensed Product under this Agreement.

With respect to any transfer of any Licensed Product in the Apollomics Territory for any substantive consideration other than monetary consideration on arm's length terms, for the purposes of calculating the Net Sales under this Agreement, such Licensed Product shall be deemed to be sold exclusively for money at the average Net Sales price charged to Third Parties for cash sales in the Apollomics Territory during the applicable reporting period (or if there were only de minimus cash sales in the Apollomics Territory, at the fair market value as determined by comparable markets).

Apollomics, its Affiliates, and their respective sublicensees shall not sell the Licensed Product as part of a bundle with other products or offer packaged arrangements to customers that include the Licensed Product, except with GlycoMimetics' prior written consent.

Where a Licensed Product is sold in combination with other pharmaceutical or biologics products, diagnostic products, or active ingredients (each a "**Combination Component**" and together with the Licensed Product a "**Combination Product**"), the Net Sales applicable to such Combination Product shall be calculated by multiplying the total Net Sales of such Combination Product by the fraction A/(A+B), where A is the actual price of the Licensed Product in the same dosage amount or quantities in the applicable country during the applicable quarter if sold separately, and B is the sum of the actual prices of all Combination Components with which the Licensed Product is combined, in the same dosage amount or quantities in the applicable country during the applicable quarter if sold separately. If A or B cannot be determined because values for the Licensed Product or Combination Components with which the Licensed Product is combined are not available separately in a particular country, then Apollomics shall in good faith make a

determination of the respective fair market values of the Licensed Product and all other Combination Components included in the Combination Product and shall notify GlycoMimetics of such determination and provide GlycoMimetics with data to support such determination. GlycoMimetics shall have the right to review such determination and supporting data to notify Apollomics if it disagrees with such determination. If GlycoMimetics does not agree with such determination and if the Parties are unable to agree in good faith as to such respective fair market values (a "**Combination Product Dispute**"), then such Combination Product Dispute shall be resolved pursuant to Section 14.2(b).

1.56 "**NMPA**" means the National Medical Product Administration of the People's Republic of China, formerly known as the China National Drug Administration, or any successor agency or authority thereto.

1.57 "**Patents**" means (a) pending patent applications, issued patents, utility models and designs; (b) reissues, substitutions, confirmations, registrations, validations, re-examinations, additions, continuations, continued prosecution applications, continuations-in-part, or divisions of or to any of the foregoing; and (c) extensions, renewals or restorations of any of the foregoing by existing or future extension, renewal or restoration mechanisms, including supplementary protection certificate, patent term additions, patent term extensions or the equivalent thereof.

1.58 "**Person**" means an individual, corporation, partnership, limited liability company, limited partnership, trust, business trust, association, joint stock company, joint venture, pool, syndicate, sole proprietorship, unincorporated organization, Governmental Authority or any other form of entity not specifically listed herein.

1.59 "**Phase 1 Clinical Trial**" means any human clinical trial of a Licensed Compound conducted mainly to evaluate the safety of chemical or biologic agents or other types of interventions (e.g., a new radiation therapy technique) that would satisfy the requirements of 21 C.F.R. § 312.21(a) or its non-United States equivalents.

1.60 "**Phase 2 Clinical Trial**" means any human clinical trial of a Licensed Compound conducted mainly to test the effectiveness of chemical or biologic agents or other types of interventions for purposes of identifying the appropriate dose for a Phase 3 Clinical Trial for a particular Indication or Indications that would satisfy the requirements of 21 CFR § 312.21(b) or its non-United States equivalents.

1.61 "**Phase 3 Clinical Trial**" means any human clinical trial of a Licensed Compound designed to: (a) establish that such Licensed Compound is safe and efficacious for its intended use; (b) define warnings, precautions and adverse reactions that are associated with the Licensed Compound in the dosage range to be prescribed; and (c) support regulatory approval of such Licensed Compound, that would satisfy the requirements of 21 CFR § 312.21(c) or its non-United States equivalents.

1.62 "**Phase 4 Clinical Trial**" means any human clinical trial of a Licensed Compound that is: (a) designed to satisfy a requirement of a Regulatory Authority in order to maintain a Regulatory Approval for such Licensed Compound or (b) conducted after the first Regulatory

Approval of a Licensed Compound in the same Indication for which a Licensed Compound received Regulatory Approval.

1.63 "**Pivotal Clinical Trial**" means a clinical trial of a Licensed Compound in human patients (whether or not designated a Phase 3 Clinical Trial) in any Region with a defined dose or a set of defined doses of a Licensed Compound designed to ascertain efficacy and safety of such Licensed Compound and intended (if successful) to provide the evidence and data sufficient for (a) market approval to the applicable Regulatory Authorities or (b) satisfying or meeting the requirements for the preparation and filing of an MAA with the Regulatory Authorities to support Regulatory Approval of such Licensed Compound.

1.64 "**Proper Conduct Practices**" means, with respect to a Party, each of its Representatives not, directly or indirectly, (a) making, offering, authorizing, providing or paying anything of value in any form, whether in money, property, services or otherwise to any Government Official, or other Person charged with similar public or quasi-public duties, or to any customer, supplier, or any other Person, or to any employee thereof, or failing to disclose fully any such payments in violation of the laws of any relevant jurisdiction to (i) obtain favorable treatment in obtaining or retaining business for it or any of its Affiliates, (ii) pay for favorable treatment for business secured, (iii) obtain special concessions or for special concessions already obtained, for or in respect of it or any of its Affiliates, in each case which would have been in violation of any Applicable Law, (iv) influence an act or decision of the recipient (including a decision not to act) in connection with the Person's or its Affiliate's business, (v) induce the recipient to use his or her influence to affect any government act or decision in connection with the Person's or its Affiliate's business or (vi) induce the recipient to violate his or her duty of loyalty to his or her organization, or as a reward for having done so; (b) engaging in any transactions, establishing or maintaining any fund or assets in which it or any of its Affiliates shall have proprietary rights that have not been recorded in the books and records of it or any of its Affiliates; (c) making any unlawful payment to any agent, employee, officer or director of any Person with which it or any of its Affiliates does business for the purpose of influencing such agent, employee, officer or director to do business with it or any of its Affiliates; (d) violating any provision of applicable Anti-Corruption Laws; (e) making any payment in the nature of bribery, fraud, or any other unlawful payment under the Applicable Law of any jurisdiction where it or any of its Affiliates conducts business or is registered; or, (f) if such Person or any of its Representatives is a Government Official, improperly using his or her position as a Government Official to influence the award of business or regulatory approvals to or for the benefit of such Person, its Representatives or any of their business operations, or failing to recuse himself or herself from any participation as a Government Official in decisions relating to such Person, its Representatives or any of their business operations.

1.65 "**Regulatory Approval**" means any and all approvals (including marketing authorization approvals, supplements, amendments, pre- and post-approvals, and pricing and reimbursement approvals), licenses, registrations or authorizations of any national, supra-national, regional, state or local regulatory agency, department, bureau, commission, council or other governmental entity, that are necessary for the Manufacture, distribution, use or commercial sale of a Licensed Product in a given country or regulatory jurisdiction.

1.66 "**Regulatory Authority**" means, in a particular country or jurisdiction, any applicable Governmental Authority involved in granting Regulatory Approval in such country or jurisdiction.

1.67 "**Regulatory Materials**" means regulatory applications (including MAA), submissions, notifications, communications, correspondence, registrations, Regulatory Approvals and/or other filings made to, received from or otherwise conducted with a Regulatory Authority in order to Develop, Manufacture, market, sell or otherwise Commercialize Licensed Products in a particular country or jurisdiction.

1.68 "**Representatives**" means, as to any Person, such Person's Affiliates and its and their successors, controlling Persons, directors, officers and employees.

1.69 "**Tax Withholding**" means any tax deduction, tax withholding or similar payment from any amount paid or payable by Apollomics to GlycoMimetics.

1.70 "**Third Party**" means any Person other than a Party or an Affiliate of a Party.

1.71 "**U.S. Dollar**" means a U.S. dollar, and "**US$**" shall be interpreted accordingly.

1.72 "**U.S.**" or "**USA**" means the United States of America, including all possessions and territories thereof.

1.73 "**Valid Claim**" means a claim (including a process, use, or composition of matter claim) of (a) an issued and unexpired patent that has not (i) irretrievably lapsed or been revoked, dedicated to the public or disclaimed or (ii) been held invalid, unenforceable or not patentable by a court, governmental agency, national or regional patent office or other appropriate body that has competent jurisdiction, which holding, finding or decision is final and unappealable or unappealed within the time allowed for appeal, or (b) a pending patent application that has been pending for no more than [*******] years since its priority date and has not been abandoned or finally disallowed without the possibility of appeal.

1.74 "**Voluntary Phase 4 Clinical Trial**" means a Phase 4 Clinical Trial that is not conducted to satisfy a requirement of a Regulatory Authority in order to maintain a Regulatory Approval for such Licensed Product.

1.75 **Additional Definitions**: The following table identifies the location of definitions set forth in various Sections of the Agreement:

Defined Terms	**Section**
Agreement	Preamble
Alliance Manager	3.1
API	1.51
Apollomics	Preamble
Apollomics Indemnitees	11.1
Apollomics Inventions	9.1(d)(ii)
Apollomics Sublicense	2.1(d)

Defined Terms	Section
Claims	11.1
Combination Product Dispute	1.55
Commercialization Plan	6.2(a)
Competing Program	2.5
Confidentiality Agreement	1.20
CTD	1.17
Development Notice	4.7(b)
Development Opt-In Notice	4.7(b)
Development Participation Costs Dispute	4.7(b)
Development Participation Right	4.7(b)
Development Plan	4.2
Dispute	14.1
Effective Date	Preamble
Enforcing Party	9.4(b)
GAAP	1.1
GDP	3.2(a)(vi)
GlycoMimetics	Preamble
GlycoMimetics Indemnitees	11.2
GlycoMimetics Inventions	9.1(d)(i)
GlycoMimetics Partner	2.2
IFRS	1.1
Indemnified Party	11.3
Indemnifying Party	11.3
Infringement	9.4(a)
Initial Development Plan	4.2
Joint Clinical Trial Costs Dispute	4.3(b)(iii)
Joint Development Committee (JDC)	3.2(a)
Joint Inventions	9.1(d)(iii)
Licensed Mark	9.6(a)
Losses	11.1
Manufacturing Technology Transfer Agreement	7.2
NDA	1.54
Party	Preamble
Pharmacovigilance Agreement	5.8
Product Materials	4.7(a)
Region	1.7
Remedial Action	5.9
Reversion Background IP	13.6(f)
Reversion Collaboration IP	13.6(f)

Defined Terms	Section
[***]	[***]
Royalty Term	8.4(b)
Rules	14.2(a)
SEC	12.3(c)
Study	4.3(b)(i)
Supply Agreement	7.1
Term	13.1
Third Party Infringement Actions	9.5
Step-In Rights	9.2(d)
VAT	8.10(c)

ARTICLE 2
LICENSE

2.1 License to Apollomics.

(a) License Grant in the Apollomics Territory. Subject to the terms and conditions of this Agreement, GlycoMimetics hereby grants Apollomics an exclusive (even as to GlycoMimetics except as provided in Section 2.1(b) below) license, with the right to sublicense (solely as provided in Section 2.1(d)), under the GlycoMimetics Technology, to Develop, Manufacture and have Manufactured (solely to the extent set forth in Section 7.2), distribute, market, promote, sell, have sold, offer for sale, import, label, package and otherwise Commercialize Licensed Products in the Field in the Apollomics Territory. As consideration for the foregoing license and access to and transfers of Information, including know-how, under this Agreement, Apollomics will make certain payments to GlycoMimetics as set out in, and subject to the terms and conditions of Article 8.

(b) Development License. Subject to the terms and conditions of this Agreement, including Section 4.3(a)(i), GlycoMimetics hereby grants, and shall cause its Affiliates to grant to, Apollomics, a non-exclusive license under (i) the GlycoMimetics Technology and (ii) the GlycoMimetics Development Technology to conduct preclinical research with respect to Licensed Products in the Field in the GlycoMimetics Territory for the purpose of developing such Licensed Products for use in the Apollomics Territory.

(c) GlycoMimetics Retained Rights. Notwithstanding the rights granted to Apollomics in Section 2.1(a)-(b), GlycoMimetics and its Affiliates shall retain:

(i) the right to practice the GlycoMimetics Technology within the scope of the license granted to Apollomics under Section 2.1(a) in order to perform, or have performed by a Third Party, GlycoMimetics' obligations under this Agreement; *provided* that GlycoMimetics shall remain solely responsible for such Third Party's performance of or failures to perform any obligations of GlycoMimetics under this Agreement;

(ii) the right to conduct preclinical Development activities for a Licensed Product in the Field in the Apollomics Territory for the purpose of obtaining or maintaining Regulatory Approval of Licensed Products in the GlycoMimetics Territory;

(iii) the right to conduct clinical Development activities, excluding Phase 4 Clinical Trial activities, for a Licensed Product in the Field in the Apollomics Territory for the purpose of obtaining or maintaining Regulatory Approval of Licensed Products in the GlycoMimetics Territory, *provided* that GlycoMimetics shall obtain Apollomics' written consent prior to conducting any such clinical Development activities, not to be unreasonably withheld; and

(iv) the right to Manufacture or have Manufactured Licensed Products anywhere in the world, for sale and use in the GlycoMimetics Territory

For purposes of clarity, nothing in this Section 2.1(c) is intended to reserve for or give to GlycoMimetics any rights of Commercialization in the Apollomics Territory.

(d) Sublicense Rights. Apollomics shall have the right to grant sublicenses of the license granted in Section 2.1(a), including sublicenses to a subset of the rights given in Section 2.1(a) to a third party, only with GlycoMimetics' express prior written consent, such consent not to be unreasonably withheld. Notwithstanding the foregoing, Apollomics may sublicense any of its rights under Sections 2.1(a) or 2.1(b) to an Affiliate of Apollomics (e.g. a sublicense from Apollomics (Hong Kong) Limited to Apollomics China entity), under this Agreement without written consent from GlycoMimetics. If and upon GlycoMimetics' grant of such consent (or with respect to any grant by Apollomics of a sublicense to an Affiliate), Apollomics shall, within thirty (30) days after granting any sublicense under Section 2.1(a), notify GlycoMimetics of the execution of such sublicense and provide GlycoMimetics with a true and complete copy of the sublicense agreement (which may have financial and commercial terms reasonably redacted) (each, an "**Apollomics Sublicense**"). Each Apollomics Sublicense shall be consistent with the terms and conditions of this Agreement, and Apollomics shall be solely responsible for all of its sublicensees' activities and any and all failures by its sublicensees to comply with the terms of this Agreement. Without limiting the foregoing, each Apollomics Sublicense shall include the following additional terms and conditions:

(i) the sublicensee shall be bound by confidentiality obligations no less stringent than those set forth in this Agreement;

(ii) the sublicensee shall not have any right to grant further sublicenses to the GlycoMimetics Technology (excluding sublicenses to Third Party contractors and Apollomics' Affiliates);

(iii) the sublicensee shall not have any right to prosecute or maintain or enforce any GlycoMimetics Licensed Patents or Joint Patents (excluding sublicenses to Apollomics' Affiliates); and

(iv) the sublicensee shall assign or license to Apollomics all Data and Inventions generated by such sublicensee, and shall grant Apollomics all of the rights necessary for Apollomics to fulfill its obligations under Section 9.1; and

(v) Apollomics shall use Commercially Reasonable Efforts to include in each Apollomics Sublicense a provision that, if this Agreement terminates, GlycoMimetics may assume Apollomics' rights and obligations under the Apollomics Sublicense.

2.2 GlycoMimetics Partner. GlycoMimetics has the right, in its sole discretion, to enter into one (1) or more agreements with Third Parties and grant such Third Parties the right to Develop, Manufacture, and Commercialize Licensed Products in one or more countries in the GlycoMimetics Territory (each such Third Party, a "**GlycoMimetics Partner**"). In addition, GlycoMimetics shall have the right (but not the obligation) to exercise any or all of its rights and to fulfill any or all of its obligations under this Agreement through one (1) or more GlycoMimetics Partners; *provided* that (a) any such GlycoMimetics Partner is not actively developing, manufacturing, or commercializing a Competing Product in the Apollomics Territory, and (b) GlycoMimetics shall remain solely responsible for any GlycoMimetics Partner(s)'s performance of or failures to perform any obligations of GlycoMimetics under this Agreement. Apollomics shall cooperate fully with GlycoMimetics Partner(s) to the extent that Apollomics has the obligation under this Agreement to cooperate with GlycoMimetics.

2.3 Negative Covenant. Apollomics covenants that it will not, and will not permit any of its Affiliates or sublicensees to, use or practice any GlycoMimetics Technology outside the scope of the licenses granted to it under Sections 2.1(a) and 2.1(b).

2.4 No Implied Licenses. Except as explicitly set forth in this Agreement, neither Party shall be deemed by estoppel, implication, or otherwise to have granted the other Party any license or other right to any intellectual property of such Party.

2.5 Exclusivity. During the Term, neither Party shall, directly or indirectly, either by itself or with or through any of its Affiliates or any Third Party (including via any arrangement or series of arrangements with a Third Party), Develop, Manufacture or Commercialize any Competing Product in the Apollomics Territory. Notwithstanding the foregoing, if GlycoMimetics intends to license Commercialization rights with respect to its compound, GMI-1359 in the Apollomics Territory, GlycoMimetics agrees to notify Apollomics of such intent at least [*******] prior to such event, and Apollomics will have a first right of negotiation as to Commercialization of GMI-1359 in the Apollomics Territory. Notwithstanding Section 15.5, either Party may without such consent but with prior written notice to the other Party, assign this Agreement and its rights and obligations hereunder in connection with a Change of Control, *provided* that, however, if either Party's assignee has an active program for developing, manufacturing or commercializing a Competing Product (a "**Competing Program**"), then, within [*******] after the closing of such Change of Control transaction, such assignee shall either: (i) Divest the Competing Program (including all rights to the Competing Product) to a Third Party with respect to the Apollomics Territory, or (ii) discontinue the Competing Program in the Apollomics Territory. The assigning Party shall have the right to extend such [*******] period up to an additional [*******] by submitting documentation supporting the extension of such request to the other Party and using Commercially Reasonable Efforts to Divest or discontinue the Competing Program. If such assignee fails to either Divest or discontinue the Competing Program in the Apollomics Territory within such [*******] period, then the non-assigning Party shall have the right to terminate this Agreement upon written notice to the assigning Party without any obligation to such Party (*provided*, that such notice of termination must be provided within [*******] after expiration of such [*******] period). If the GlycoMimetics assignee

fails to either Divest or discontinue the Competing Program in the Apollomics Territory in the applicable time period, then, if Apollomics has not elected to terminate the Agreement, Apollomics has the right to offset any future milestone payments under Sections 8.2 and 8.3 and future royalty payments under Section 8.4 (in each case following the expiration of the applicable time period to Divest or discontinue the Competing Program) by an amount equal to [*******] Apollomics' actual, direct damages resulting directly from GlycoMimetics' failure to either Divest or discontinue the Competing Program in the Apollomics Territory in the applicable time period. If the Apollomics assignee fails to either Divest or discontinue the Competing Program in the Apollomics Territory in the applicable time period, then, if GlycoMimetics has not elected to terminate the Agreement, Apollomics' obligations to pay any future milestone payments under Sections 8.2 and 8.3 and future royalty payments under Section 8.4 (in each case following the expiration of the applicable time period to Divest or discontinue the Competing Program) will increase by [*******]. The foregoing shall apply to any Change of Control of either Party, regardless of whether this Agreement is assigned to any such Third party acquiror provided such acquiror has a Competing Program as of the consummation of the Change of Control transaction. For clarity, notwithstanding anything to the contrary, the non-assigning Party retains the right under Section 12.5 to seek specific performance of the assigning Party's obligation to Divest or discontinue the Competing Program.

2.6 Transfer of GlycoMimetics Licensed Know-How. Promptly after the Effective Date, GlycoMimetics shall, to the extent expressly provided for in **Exhibit C**, provide Apollomics with complete and accurate copies of the GlycoMimetics Licensed Know-How set forth in **Exhibit C**. The JDC (as defined below) shall establish a reasonable process and schedule for the transfer of any additional GlycoMimetics Licensed Know-How that subsequently becomes Controlled by GlycoMimetics or its Affiliates during the Term. GlycoMimetics shall reasonably cooperate with Apollomics in providing Apollomics with copies of such GlycoMimetics Licensed Know-How in accordance with the process and schedule agreed upon through the JDC.

ARTICLE 3
GOVERNANCE

3.1 Alliance Managers. Within thirty (30) days after the Effective Date, each Party shall appoint and notify the other Party of the identity of a representative having the appropriate qualifications, including a general understanding of pharmaceutical development, manufacturing, and commercialization issues, to act as its alliance manager under this Agreement (the "**Alliance Manager**"). The Alliance Managers shall serve as the primary contact points between the Parties for the purpose of providing each Party with information on the progress and results of Apollomics' Development, Manufacturing, and Commercialization of Licensed Products and any progress and results as to joint Development activities of the Parties. The Alliance Managers shall also be primarily responsible for facilitating the flow of information and otherwise promoting communication, coordination and collaboration between the Parties with respect to Licensed Products. Each Party may replace its Alliance Manager at any time upon written notice to the other Party.

3.2 Joint Development Committee.

(a) Formation; Purpose. Within thirty (30) days after the Effective Date, the Parties shall establish a joint development committee (the "**Joint Development Committee**" or

"**JDC**") for the overall coordination and oversight of the Parties' activities under this Agreement. The role of the JDC shall be:

(i) to review, discuss and coordinate the overall strategy for the Development, Manufacturing, and Commercialization of Licensed Products in the Apollomics Territory, including related regulatory activities;

(ii) to discuss and approve (subject to Section 3.3) the inclusion of additional Indications within the Field for the Development and Commercialization of Licensed Products in the Apollomics Territory, including approval of the relevant Development Plan for such Indications;

(iii) to review, discuss and approve (subject to Section 3.3) any proposed amendments or revisions to the Development Plan, including those with respect to clinical Development activities set forth in Section 4.3, and to review, discuss and approve (subject to Section 3.3) the conduct of any Development activities by Apollomics;

(iv) to oversee the initial transfer of the GlycoMimetics Technology and Development activities related to the Licensed Products from GlycoMimetics to Apollomics in accordance with the terms of this Agreement;

(v) to oversee and coordinate the on-going sharing and transfer of Know- How generated in or related to the Development of Licensed Products;

(vi) to the extent that the Parties agree to a Global Development Plan ("**GDP**") with regard to a Licensed Product in a particular Indication, to (1) review, approve and oversee performance of the global non-clinical research of Licensed Products in the Field for that Indication; (2) review and approve clinical study design, including clinical study endpoints, clinical methodology and monitoring requirements for the Clinical Studies; and (3) review, discuss, and approve a global regulatory strategy with respect to seeking and obtaining Regulatory Approval of the Licensed Products in the Field; and

(vii) to perform such other functions as appropriate to further the purposes of this Agreement, as expressly set forth in this Agreement or as determined by the Parties in writing.

Notwithstanding anything to the contrary, Apollomics' right to participate in a global study under a GDP shall be subject to GlycoMimetics' consent, *provided* that (1) Apollomics' execution of its responsibilities under the GDP shall at all times be consistent with the GDP; and (2) in the event GlycoMimetics modifies or terminates the underlying global study, GlycoMimetics shall provide Apollomics with notice of the same and Apollomics shall modify the study in accordance with GlycoMimetics' modifications or terminate the study, as applicable, in each case within a commercially reasonable time upon receipt of such notification from GlycoMimetics.

(b) Members. The JDC shall be comprised of an equal number of representatives from each Party. Each Party's representatives shall be an officer or employee of such Party or its Affiliate having sufficient seniority within the applicable Party to make decisions

arising within the scope of the JDC's responsibilities. Each Party shall initially appoint three (3) representatives to the JDC. Each Party may replace its representatives at any time upon written notice to the other Party. Each Party shall appoint one (1) of its representatives on the JDC to act as the co-chairperson. The role of the co-chairpersons shall be to convene and preside at the JDC meetings and to ensure the circulation of meeting agendas at least five (5) days in advance of JDC meetings and the preparation of meeting minutes and any pre-read materials in accordance with Section 3.2(c), but the co-chairpersons shall have no additional powers or rights beyond those held by other JDC representatives. Employees or consultants of either Party that are not representatives of the Parties on the JDC may attend meetings of the JDC, *provided* that such attendees shall not vote or otherwise participate in the decision-making process of the JDC and are subject to obligations of confidentiality substantially similar to the provisions set forth in Section 12.1.

(c) Meetings. The JDC shall meet at least every three (3) months during the Term, and at least one (1) such meeting per calendar year shall be in-person, unless the Parties mutually agree in writing to a different frequency for such meetings. Either Party may also call a special JDC meeting (by videoconference or teleconference) with reasonable advanced written notice to the other Party in the event such Party reasonably believes that a significant matter must be addressed prior to the next regularly scheduled meeting, and such Party shall promptly provide the JDC prior to the special meeting with materials reasonably adequate to enable an informed decision. All JDC meetings shall be conducted in English, and all communications under this Agreement shall be in English. The location of each in-person JDC meeting shall alternate between locations reasonably selected by each of the Parties. The co-chairpersons shall be responsible for preparing reasonably detailed written minutes of the JDC meetings that reflect all material decisions made at such meetings. The co-chairpersons shall send draft meeting minutes to each representative of the JDC for review and approval within ten (10) Business Days after the JDC meeting. Such minutes shall be deemed approved unless one or more JDC representatives object to the accuracy of such minutes within ten (10) Business Days of receipt.

3.3 Decision Making. The JDC shall strive to seek consensus in its actions and decision making process, and all decisions by the JDC shall be made by consensus, with each Party having collectively one (1) vote in all decisions. If after reasonable discussion and good faith consideration of each Party's view on a particular matter before the JDC, the representatives of the Parties cannot reach an agreement as to such matter (to the extent that such matter requires the agreement of the Parties hereunder) within ten (10) Business Days after such matter was brought to the JDC for resolution or after such matter has been referred to the JDC, such disagreement shall be referred to the Executive Officers for resolution. If the Executive Officers cannot resolve such matter within thirty (30) days after such matter has been referred to them, then:

(a) except as set forth in Section 3.3(b) below, the Apollomics Executive Officer shall have the final decision making authority with respect to the Development or Commercialization of Licensed Products in the Field in the Apollomics Territory to the extent such Development and Commercialization activities solely arise within the Apollomics Territory and solely impact the Development, Commercialization, and Manufacture of Licensed Products in the Apollomics Territory; and

(b) the GlycoMimetics Executive Officer shall have the final decision making authority with respect to all other matters not allocated to Apollomics in Section 3.3(a), including

any JDC decisions that would reasonably be expected individually or in the aggregate to have an Adverse Risk or that relate to any global study worldwide.

For clarity, any Dispute concerning whether the Apollomics Executive Officer or the GlycoMimetics Executive Officer shall have the final decision making authority shall be resolved through arbitration in accordance with Section 14.2.

3.4 Limitation of JDC Authority. The JDC shall only have the powers expressly assigned to it in this Article 3 and elsewhere in this Agreement and shall not have the authority to: (a) modify or amend the terms and conditions of this Agreement; (b) waive or determine either Party's compliance with the terms and conditions of under this Agreement; or (c) decide any issue in a manner that would conflict with the express terms and conditions of this Agreement.

3.5 Discontinuation of the JDC. The activities to be performed by the JDC shall solely relate to governance under this Agreement, and are not intended to be or involve the delivery of services. The JDC shall continue to exist until the first to occur of: (a) the Parties mutually agree to disband the JDC; or (b) GlycoMimetics provides written notice to Apollomics of its intention to disband and no longer participate in the JDC. Thereafter, the JDC shall have no further obligations under this Agreement and, thereafter, each Party shall designate a contact person for the exchange of information relevant to the JDC under this Agreement. The former decisions handled by the JDC shall be decisions of (i) Apollomics with respect to the Development or Commercialization of Licensed Products in the Field in the Apollomics Territory to the extent such Development and Commercialization activities solely arise within the Apollomics Territory and solely impact the Development, Commercialization, and Manufacture of Licensed Products in the Apollomics Territory; and (ii) GlycoMimetics with respect to all other matters not allocated to Apollomics in this Section 3.5(a), including any decisions that would reasonably be expected individually or in the aggregate to have an Adverse Risk or that relate to any global study worldwide.

ARTICLE 4
DEVELOPMENT

4.1 Overview; Diligence. Subject to the terms and conditions of this Agreement (including the diligence obligations set forth below), Apollomics shall be solely responsible for the Development of Licensed Products in the Field in the Apollomics Territory, at its own cost and expense (except as otherwise expressly set forth herein), including all non-clinical and clinical studies and collection of CMC Information, as necessary to obtain Regulatory Approval for Licensed Products in any Region in the Apollomics Territory. Apollomics shall use Commercially Reasonable Efforts to Develop and obtain Regulatory Approval for Licensed Products in the Field in each Region in the Apollomics Territory. Without limiting the generality of the foregoing, Apollomics shall (a) conduct its Development activities under and in accordance with the Development Plan, including spending the minimum amount on Development activities as well as Manufacturing activities related to such Development, as are set forth in the Initial Development Plan, and (b) complete the first dosing of the first patient in the first Clinical Trial for a Licensed Product within [*******] of the Effective Date, *provided* that Apollomics may request a one-time extension of an additional [*******] by submitting a written request to the JDC for review and approval.

4.2 Development Plan. Without limiting the generality of the other provisions in this Article 4, an initial, mutually agreed Development Plan is attached hereto as **Exhibit D** (the "**Initial Development Plan**" and together with any subsequent updates pursuant to this Section 4.2, collectively the "**Development Plan**"). The Development Plan shall include among other things, (a) the Indications in the Field for which the Licensed Products are to be Developed and other exploratory Indications in the Field for which the Licensed Products may be developed, (b) critical activities to be undertaken under this Agreement, (c) go/no-go decision points and relevant decision criteria, (d) solely to the extent expressly agreed by GlycoMimetics with respect to any responsibilities allocated to GlycoMimetics, certain allocations of responsibilities between the Parties under the Development Plan, and (e) all non-clinical and clinical studies, CMC Information collection activities and regulatory activities with respect to the Licensed Products to be conducted by or on behalf of Apollomics or its Affiliates or their respective sublicensees in the Apollomics Territory or preclinical research activities to be conducted by Apollomics in the GlycoMimetics Territory. From time to time during the Term, Apollomics may prepare written amendments and updates, as appropriate, to the then-current Development Plan, and shall submit such amendments and updates to the JDC in accordance with Section 4.3. Apollomics shall be solely responsible for all decisions regarding the day-to-day conduct of Development within the Apollomics Territory.

4.3 Other Development Activities.

(a) Pre-Clinical Development. Apollomics shall have the right to conduct any pre-clinical studies in the Apollomics and/or the GlycoMimetics Territories to generate and obtain Data that is reasonably useful for the Development of any Licensed Product in the Apollomics Territory, *provided* that Apollomics shall promptly amend the Development Plan to include such pre-clinical studies and submit such amendment to the JDC for review.

(i) For purposes of clarity, the Parties have agreed that Apollomics shall have the right to conduct preclinical IND enabling studies for GMI-1687 in the Apollomics and/or the GlycoMimetics Territories for [*******] for the purpose of filing and supporting one (1) or more regulatory filings in the Apollomics Territory as part of the Development Plan. As a condition for this right, Apollomics agrees (1) to spend up to [*******] on such preclinical studies, (2) to conduct such studies adhering to FDA standards so the Data can be used to support an FDA filing in the US, and (3) to share the Data with GlycoMimetics for its use. This shall be included as part of the Initial Development Plan.

(ii) GlycoMimetics hereby agrees to conduct preclinical studies for GMI-1687 on another Indication (to be determined) for the purpose of filing an IND with the FDA and to share the Data with Apollomics for its use in the Apollomics Territory. This shall be included as part of the Initial Development Plan.

(b) Clinical Development. If Apollomics wishes to conduct any clinical studies for the Development of (i) any Licensed Product for any Indication in the Field other than an Indication included in the Initial Development Plan, or (ii) any new formulations or new combinations of Licensed Product, in the Field in the Apollomics Territory, Apollomics may propose an amendment to the Development Plan to include such clinical studies and submit such amendment to the JDC for review and approval. Upon receipt of such proposal, the JDC shall promptly (but in any event within thirty (30) days) review and decide on whether to approve such

proposal. If the JDC approves such amendment, such clinical studies shall be included in the amended Development Plan, and Apollomics may conduct such clinical studies at its own cost.

(i) The Parties hereby agree that, as part of the Development Plan, Apollomics will contribute a prospective cohort of Chinese patients in parallel with the on-going global Phase 3 Clinical Trial for GMI-1271 in relapsed or refractory (R/R) AML (the "**Study**") that preserves the ability to combine the global and local datasets to support Regulatory Approval in the Apollomics Territory. As part of the pre-IND meeting, Apollomics will seek NMPA guidance on the acceptability of the parallel database Study to support commercial approval in the Apollomics Territory. Should the NMPA not agree to the parallel database Study, Apollomics shall pursue a bridging approach for the R/R AML Phase 3 Clinical Trial.

(ii) Apollomics will be responsible for determining the clinical sites in the Apollomics Territory and the regulatory filings in the Apollomics Territory. As a condition to participating in the Study, Apollomics agrees to use GlycoMimetics global clinical research organization IQVIA or a designated IQVIA affiliate to oversee and monitor the study in the Apollomics Territory. The number of sites, patients and allocation of costs for the Study will be mutually agreed to by the JDC as part of the GDP within the overall Development Plan.

(iii) If Apollomics requests to participate in a joint Phase 1 Clinical Trial with GlycoMimetics with respect to GMI-1687, GlycoMimetics shall consider such request in good faith. If GlycoMimetics, at its sole discretion, approves Apollomics' request to participate in such joint Phase 1 Clinical Trial, the Parties shall discuss in good faith the allocation of responsibilities and costs for such Clinical Trial. In addition, any Dispute regarding the allocation of costs with respect to such joint Phase 1 Clinical Trial ("**Joint Clinical Trial Costs Dispute**") shall be subject to Section 14.2(b).

4.4 Cooperation. GlycoMimetics shall provide such technical assistance and cooperation to Apollomics as Apollomics may reasonably request (subject to Apollomics' reimbursement of GlycoMimetics' external and internal costs and expenses related thereto), as necessary or reasonably useful for Apollomics to Develop, Manufacture and Commercialize Licensed Products in the Field in the Apollomics Territory and to conduct preclinical research activities in the Field in the GlycoMimetics Territory or Apollomics Territory.

4.5 Development Records. Apollomics shall maintain complete, current and accurate records of all activities conducted pursuant to the Development Plan by Apollomics, its Affiliates and their respective sublicensees, and all Data and other Information resulting from such activities. Such records shall fully and properly reflect all work done and results achieved in the performance of the Development activities in good scientific manner appropriate for regulatory and patent purposes. Apollomics shall document all non-clinical studies and clinical trials in formal written study records in accordance with all Applicable Law, including applicable national and international guidelines such as ICH, GCP and GLP. GlycoMimetics shall have the right to review and copy such records at reasonable times and to obtain access to review the original to the extent necessary or useful for regulatory or patent purposes upon reasonable notice to Apollomics and at a time and location mutually acceptable to Apollomics. Notwithstanding anything to the contrary herein, Apollomics shall have the right to retain the originals of all its records.

4.6 Development Reports. Apollomics shall keep GlycoMimetics reasonably informed as to the progress and results of its and its Affiliates' and their respective sublicensees' work under the Development Plan (including prompt reporting of available clinical data). Without limiting the foregoing, at each regularly scheduled JDC meeting, Apollomics shall provide GlycoMimetics with a written report summarizing the Development activities performed since the last JDC meeting and the results thereof, and comparing such activities with the Development Plan for such time period. Such reports shall be provided in English and at a level of detail reasonably requested by GlycoMimetics and sufficient to enable GlycoMimetics to determine Apollomics' compliance with its diligence obligations under Section 4.1. At such JDC meeting, the Parties shall discuss the status, progress and results of Apollomics' Development activities. Apollomics shall promptly respond to GlycoMimetics' reasonable questions or requests for additional information relating to such Development activities. In addition, within thirty (30) days after the end of each Fiscal Year, Apollomics shall provide GlycoMimetics with a detailed written annual report in English regarding the progress under the Development Plan and results thereof.

4.7 Data Exchange.

(a) In addition to GlycoMimetics' obligation with respect to the transfer of GlycoMimetics Licensed Know-How set forth under Section 2.6 and each Party's adverse event and safety data reporting obligations pursuant to Section 5.8, but subject to the remainder of this Section 4.7, each Party shall, at its sole cost and expense, promptly provide the other Party with copies of all Data and access to Regulatory Materials related to all Licensed Products generated by or on behalf of such Party or its Affiliates or sublicensees in the performance of Development activities of the Licensed Products in their respective territories (the "**Product Materials**"). The JDC may establish reasonable policies to effectuate such exchange of Product Materials between the Parties. For clarity, GlycoMimetics shall not be obligated to share with Apollomics or provide Apollomics access to CMC Information or any other Information related to the Manufacture of Licensed Products (except as set forth in Sections 5.1 and 7.2).

(b) Following Completion of the first Phase 2 Clinical Trial of a Licensed Product, on an Indication-by-Indication basis (excluding Acute Myeloid Leukemia (AML)), GlycoMimetics shall notify Apollomics in writing of its intent to conduct a global clinical study with respect to such Licensed Product and Indication and shall provide a copy of the applicable protocol for such global clinical study and the clinical Data from the first Phase 2 Clinical Trial in each Indication (each a "**Development Notice**"). Subject to written amendment of the Development Plan and approval by the JDC, Apollomics shall have the option to participate in such global clinical study and share any related Development costs, exclusive of regulatory costs ("**Development Participation Right**") by providing written notice of its intent to participate within [*******] of its receipt of a Development Notice ("**Development Opt-In Notice**"). If Apollomics fails to timely exercise its Development Participation Right, GlycoMimetics shall have no further obligations under Section 4.7(a) with respect to any Data and Regulatory Materials related to the Licensed Product and Indication for which Apollomics did not timely exercise its Development Participation Right except as set forth in Sections 5.1(b) and 5.3. Upon timely exercise of Apollomics' Development Participation Right, (i) each Party shall promptly provide the other Party with copies of all Product Materials it Controls that is reasonably necessary or useful to the underlying shared, global clinical study; and (ii) the Parties shall discuss in good faith a commercially reasonable allocation of the Development costs, exclusive of regulatory costs, for

such global clinical study. Each Party will bear its own costs with regard to regulatory filings in its respective Territory. If the Parties do not reach agreement on the allocation of costs within [***], either Party may refer such matter (a "**Development Participation Costs Dispute**") for resolution pursuant to 14.2(b). If Apollomics did not initially elect to exercise its Development Participation Right pursuant to this Section 4.7(b), Apollomics may at any time thereafter retroactively elect to exercise its Development Participation Right by paying to GlycoMimetics an amount equal to [***] Development costs incurred by GlycoMimetics until such time as Apollomics elects to exercise such right (and [***] of such Development costs incurred thereafter), in which case GlycoMimetics' obligations under Section 4.7(a) shall resume with respect to the Data and Regulatory Materials related to such Licensed Product and Indication for which Apollomics retroactively exercised its Development Participation Right. Notwithstanding the foregoing, Apollomics may elect to Develop, at its own cost and expense, the Licensed Products in any Indication in the Field in the Apollomics Territory as approved under the Development Plan, even if Apollomics does not exercise its Development Participation Right with respect to the same Indication.

4.8 Subcontractors. Apollomics shall have the right to engage and sublicense its rights under the GlycoMimetics Technology to its subcontractors to the extent necessary to conduct any activities necessary for Development of Licensed Products, including but not limited to non-clinical studies, clinical studies, CMC activities, and regulatory services for Licensed Products, under this Agreement, *provided* that such subcontractors are bound by written obligations of confidentiality consistent with this Agreement and have agreed in writing to assign to Apollomics all Data, Information, inventions or other intellectual property generated by such subcontractor in the course of performing such subcontracted work. Apollomics may also subcontract its rights to Manufacture the Licensed Product in the Territory, *provided* that such subcontractors are bound by written obligations of confidentiality consistent with this Agreement and have agreed in writing to assign to Apollomics all Data, Information, inventions and other intellectual property generated by such subcontractor in the course of or as a result of performing such subcontracted work. Apollomics shall remain responsible for any obligations that have been delegated or subcontracted to any subcontractor, and shall be responsible for the performance of its subcontractors.

ARTICLE 5
REGULATORY MATTERS

5.1 Regulatory Responsibilities.

(a) Subject to the terms and conditions of this Agreement, Apollomics will be responsible, at its sole cost and expense, for the conduct of all regulatory activities required to obtain and maintain Regulatory Approval of Licensed Products in the Field in the Apollomics Territory, including the preparation and submission of all Regulatory Materials and all communications and interactions with Regulatory Authorities, as necessary to obtain Regulatory Approval for Licensed Products in any Region in the Apollomics Territory. Apollomics shall be responsible for filing each MAA in the Apollomics Territory for each Licensed Product in its own name. The Development Plan shall include the regulatory strategy for obtaining Regulatory Approval of Licensed Products in the Apollomics Territory. Apollomics shall use Commercially Reasonable Efforts to carry out its regulatory obligations for Licensed Products pursuant to such strategy.

(b) GlycoMimetics shall provide all reasonable assistance and cooperation to Apollomics as Apollomics may reasonably request (subject to Apollomics' reimbursement of GlycoMimetics' reasonable external and internal costs and expenses related thereto) during the Term of this Agreement, with respect to the satisfaction of its obligations under Section 5.1(a), including (i) in connection with the preparation of Regulatory Materials, (ii) providing documentation within GlycoMimetics' possession and control, in each case as requested by Regulatory Authorities at Apollomics' cost, and (iii) transferring to Apollomics additional Regulatory Materials in the GlycoMimetics Territory as requested by Regulatory Authorities in the Apollomics Territory within fifteen (15) days of Apollomics' reasonable request. In the event that GlycoMimetics believes that such requests are not reasonable or are otherwise burdensome to GlycoMimetics, then such matter shall be promptly submitted to the JDC for review and discussion. Without limiting the foregoing, GlycoMimetics shall provide Apollomics with modules 2, 3, 4 and 5 of the CTD in a manner sufficient for filing in the U.S. as soon as reasonably practicable after completion thereof. Additionally, GlycoMimetics shall provide Apollomics with information sufficient for filing modules 2, 3, 4 and 5 of the CTD in the Apollomics Territory. Apollomics shall be responsible for publishing and submitting the CTD (including modules 2, 3, 4 and 5) to the Regulatory Authority in the Apollomics Territory. In order to address questions Apollomics may receive from a Regulatory Authority in the Apollomics Territory related to modules 2, 3, 4 and 5 of the CTD, GlycoMimetics will assist in the preparation of responses based on information that would be found in: various technical reports, notebooks, executed batch records, master batch records, SOPs, validation protocols and reports, vendor certificates, and third party study reports and other CMC related documents not otherwise included in modules 2, 3, 4 and 5 of the CTD or otherwise already provided to Apollomics. Any such transfer of CMC Information as set forth in this Section 5.1 is conditioned on Apollomics establishing appropriate firewalls or equivalent means to ensure that such CMC Information is protected from unauthorized disclosure and is used only for legal and regulatory compliance purposes and not for any other purpose. In furtherance of the foregoing, Apollomics shall ensure that any CMC Information provided by or on behalf of GlycoMimetics pursuant to this Section 5.1 shall only be disclosed to those identified personnel of Apollomics (or a designated agreed Third Party) who (a) have a need to know the same to comply with the above obligations, and (b) have been fully informed of and acknowledge the highly sensitive and proprietary nature of such information and the need to maintain its secrecy and avoid inappropriate usage or disclosure, by using the firewall or equivalent means. Notwithstanding anything to the contrary herein, GlycoMimetics' obligations under this Section 5.1(b), including to provide Apollomics with modules 2, 3, 4 and 5 of the CTD and such other information or assistance specified in this Section 5.1(b), shall apply solely to the extent GlycoMimetics is manufacturing and providing Apollomics with Licensed Products under the clinical Supply Agreement or commercial Supply Agreement. GlycoMimetics agrees, to the extent CMC Data is required or requested by the Regulatory Authorities, including the NMPA, to generate such Data at Apollomics' expense.

5.2 Regulatory Information Sharing. Apollomics shall (a) provide GlycoMimetics with the English translations at GlycoMimetics' cost (to the extent prepared and originated by Apollomics in Chinese), along with the original documents (in the electronic format in which it has been prepared by Apollomics) of draft package inserts, CTA and CTD, for GlycoMimetics' review and comment, in connection with obtaining or maintaining any MAA approval for Licensed Products in the Field in the Apollomics Territory, prior to the submission of such documents to the Regulatory Authority in the Apollomics Territory; and (b) shall keep GlycoMimetics informed

of any material verbal or written communication or question relating to Licensed Products received by Apollomics from the Regulatory Authority in the Apollomics Territory. Except as required by Applicable Law, Apollomics, its Affiliates and sublicensees shall not submit any Regulatory Materials to, or communicate with, any Regulatory Authority in the GlycoMimetics Territory regarding any Licensed Products. If such submission or communication is required by Applicable Law, Apollomics shall immediately notify GlycoMimetics in writing of such requirement and the content of such submission or communication to allow reasonable time for GlycoMimetics to provide comment, if possible. Notwithstanding the foregoing, the preceding sentence shall not be construed to restrict Apollomics ability to take any action that it deems appropriate or required of it under Applicable Law or regulatory requirements.

5.3 Meetings with Regulatory Authorities. Apollomics shall lead all interactions with Regulatory Authorities in the Apollomics Territory with respect to Licensed Products. Apollomics shall keep GlycoMimetics reasonably informed of any material regulatory developments related to Licensed Products in the Field in the Apollomics Territory. At each regularly scheduled JDC meeting, Apollomics shall provide GlycoMimetics with a list and schedule of any in-person meeting or teleconference with the applicable Regulatory Authorities (or related advisory committees) in the Apollomics Territory planned for the next Calendar Quarter that relates to any Licensed Product in the Field. In addition, Apollomics shall notify GlycoMimetics as soon as reasonably possible (but in no event later than five (5) Business Days if possible) after Apollomics becomes aware of any additional such meetings or teleconferences that become scheduled for such Calendar Quarter. To the extent permitted by Applicable Law and by the Regulatory Authorities (as reasonably determined by Apollomics), GlycoMimetics shall have the right to participate (whether directly or through a representative) in all such meetings and teleconferences, at GlycoMimetics' cost. If such participation would result in the disclosure to GlycoMimetics of Apollomics' Confidential Information unrelated to the subject matter of this Agreement, the Parties shall enter into a confidentiality agreement covering such unrelated subject matter.

5.4 Regulatory Costs. Unless otherwise provided in this Agreement, Apollomics shall be responsible for the costs and expenses incurred in connection with the preparation and filing of any and all Regulatory Materials and the maintenance of any and all Regulatory Approvals (including MAA approvals) for Licensed Products in the Field in the Apollomics Territory.

5.5 Right of Reference to Regulatory Materials. Each Party hereby grants to the other Party the right of reference to all Regulatory Materials pertaining to Licensed Products submitted by or on behalf of such Party. The receiving Party may use such right of reference solely for the purpose of seeking, obtaining and maintaining Regulatory Approval of Licensed Products in its respective territory. Each Party shall support the other Party, as reasonably requested by such other Party and at such other Party's expense, in obtaining Regulatory Approvals in such other Party's territory, including providing necessary documents or other materials required by Applicable Law to obtain Regulatory Approval in such territory, all in accordance with the terms and conditions of this Agreement.

5.6 No Harmful Actions. If GlycoMimetics believes that Apollomics is taking or intends to take any action with respect to any Licensed Product that could reasonably be expected to have an Adverse Risk, GlycoMimetics may bring the matter to the attention of the JDC and the Parties shall discuss in good faith to promptly resolve such concern.

5.7 Notification of Threatened Action. Each Party shall immediately notify the other Party (including by providing notice to the other Party's Alliance Manager) of any information it receives regarding any threatened or pending action, inspection or communication by or from any Third Party, including without limitation a Regulatory Authority, which may affect the Development, Manufacture, Commercialization or regulatory status of any Licensed Product. Upon receipt of such information, the Parties shall consult with each other in an effort to arrive at a mutually acceptable procedure for taking appropriate action.

5.8 Adverse Event Reporting and Safety Data Exchange. No later than [*******] before the commencement of a clinical study with respect to Development of any Licensed Product by Apollomics in the Apollomics Territory, the Parties shall define and finalize the actions that the Parties shall employ with respect to such Licensed Product to protect patients and promote their well-being in a written pharmacovigilance agreement (the "**Pharmacovigilance Agreement**") for the Development of the Licensed Product. Further, no later than [*******] before the anticipated launch date of any Licensed Product in the Apollomics Territory, the Parties shall enter into a separate Pharmacovigilance Agreement for the Commercialization of the Licensed Product. These responsibilities shall include mutually acceptable guidelines and procedures for the receipt, investigation, recording, communication, and exchange (as between the Parties) of adverse event reports, pregnancy reports, and any other information concerning the safety of the Licensed Product. Such guidelines and procedures shall be in accordance with, and enable the Parties to fulfill all regulatory reporting obligations under Applicable Law. Furthermore, such agreed procedure shall be consistent with relevant ICH guidelines, except where said guidelines may conflict with existing local regulatory reporting safety reporting requirement, in which case local reporting requirement shall prevail. The Pharmacovigilance Agreement shall provide for an adverse event database for the Licensed Products in the Apollomics Territory to be maintained by Apollomics at Apollomics' expense, and a global safety database for the Licensed Products, to be maintained by GlycoMimetics at GlycoMimetics' expense. As between the Parties, Apollomics shall be responsible for preparing all adverse event reports and responses to safety issues and requests of Regulatory Authorities relating to Licensed Products in the Apollomics Territory, and Apollomics shall be responsible for filing such reports and responses with Regulatory Authorities in the Apollomics Territory. As between the Parties, Apollomics shall also be responsible for reporting any quality complaints, adverse events and safety data related to Licensed Products to GlycoMimetics for inclusion in the global safety database. Each Party hereby agrees to comply with its respective obligations under such Pharmacovigilance Agreement and to cause its Affiliates and permitted sublicensees to comply with such obligations.

5.9 Remedial Actions. Each Party will notify the other Party immediately, and promptly confirm such notice in writing, if it obtains information indicating that any Licensed Product may be subject to any recall, corrective action or other regulatory action taken by virtue of Applicable Law (a "**Remedial Action**"). The Parties will assist each other in gathering and evaluating such information as is necessary to determine the necessity of conducting a Remedial Action. Apollomics shall, and shall ensure that its Affiliates and sublicensees will, maintain adequate records to permit the Parties to trace the packaging, labeling, distribution, sale and use (to the extent possible) of the Licensed Product in the Apollomics Territory. Apollomics shall have sole discretion with respect to any matters relating to any Remedial Action in the Apollomics Territory, including the decision to commence such Remedial Action and the control over such Remedial Action in its territory, at its cost and expense; *provided, however,* if GlycoMimetics

determines in good faith that any Remedial Action with respect to any Licensed Product in the Apollomics Territory should be commenced or is required by Applicable Law or Regulatory Authority, (a) GlycoMimetics shall discuss such Remedial Action with Apollomics and (b) Apollomics shall carry out such Remedial Action upon GlycoMimetics' request. Notwithstanding anything to the contrary in clause (b) above, if Apollomics in good faith disagrees that such Remedial Action should be commenced or is required by Applicable Law or Regulatory Authority, such Remedial Action shall be conducted at GlycoMimetics' cost; *provided* that, if a Regulatory Authority later determines that such Remedial Action is required, Apollomics shall reimburse GlycoMimetics such costs. Each Party shall provide the other Party, at the other Party's expense, with such assistance in connection with a Remedial Action as may be reasonably requested by such other Party.

ARTICLE 6
COMMERCIALIZATION

6.1 Overview; Diligence. Subject to the terms and conditions of this Agreement (including the diligence obligations set forth below), Apollomics has the sole right and responsibility for all aspects of the Commercialization of Licensed Products in the Field in the Apollomics Territory, including: (a) developing and executing a commercial launch and pre-launch plan, (b) negotiating with applicable Governmental Authorities regarding the price and reimbursement status of Licensed Products; (c) marketing, advertising and promotion; (d) booking sales and distribution and performance of related services; (e) handling all aspects of order processing, invoicing and collection, inventory and receivables; (f) providing customer support, including handling medical queries, and performing other related functions; and (g) conforming its practices and procedures to Applicable Laws relating to the marketing, detailing and promotion of Licensed Products in the Field in the Apollomics Territory. Apollomics shall bear all of the costs and expenses incurred in connection with such Commercialization activities. Apollomics shall use Commercially Reasonable Efforts to Commercialize the Licensed Products in the Apollomics Territory and to aggressively market and sell the Licensed Products in the Apollomics Territory and to expand annual Net Sales of the Licensed Products in the Apollomics Territory. Without limiting the generality of the foregoing, Apollomics shall use Commercially Reasonable Efforts to conduct its Commercialization activities under and in accordance with the Commercialization Plan.

6.2 Commercialization Plan.

(a) General. Apollomics shall Commercialize Licensed Products in the Field in the Apollomics Territory pursuant to a commercialization plan (the "**Commercialization Plan**"). The Commercialization Plan shall include (i) a detailed description of all key strategic decisions (including messaging, branding, marketing, advertising, sales force positioning, number of representatives and details, pricing strategy, etc.), implementation tactics and pre-launch and post-launch activities; (ii) a reasonably detailed description and timeline of Apollomics', its Affiliates' and their respective sublicensees' Commercialization activities for Licensed Products in the Apollomics Territory for [*******], including medical marketing activities, sales forecasts and projections, pricing, reimbursement, market research, sales training, distribution channels, customer service and sales force matters related to the launch and sale of Licensed Products in the Apollomics Territory, and (iii) a strategic plan for Commercialization of Licensed Products in the

Apollomics Territory for [***]. In the event that Apollomics' Commercialization Plan requires the use of GlycoMimetics internal resources to conduct additional activities, the extent of such need shall be clearly specified in the Commercialization Plan and will require the prior written approval of GlycoMimetics.

(b) Initial Plan and Amendments. Within a reasonable time (but no later than [***]) prior to the anticipated Regulatory Approval of each Licensed Product in the Apollomics Territory, Apollomics shall prepare and present to the JDC the initial Commercialization Plan for review and discussion (but not approval) by the JDC. From time to time (but at least on an annual basis) during the Term, Apollomics shall prepare updates and amendments, as appropriate, to the then-current Commercialization Plan, and shall submit all updates and amendments to the Commercialization Plan to the JDC for review and discussion (but not approval). Notwithstanding anything to the contrary contained in this Agreement, the Commercialization Plan, and any updates and amendments thereto, shall not require the approval of the JDC or GlycoMimetics, *provided* that Apollomics considers in good faith any comments by the JDC or GlycoMimetics concerning consistent global marketing of Licensed Products.

6.3 Data Exchange. Apollomics shall keep GlycoMimetics reasonably informed of Apollomics', its Affiliates' and their respective sublicensees' Commercialization activities with respect to the Licensed Products in the Field in the Apollomics Territory. GlycoMimetics shall provide and/or disclose to Apollomics, upon Apollomics' request, and no more than once each Calendar Quarter, at GlycoMimetics' cost, copies of any materials prepared by or on behalf of GlycoMimetics that are necessary or reasonably useful in connection with Apollomics' Commercialization of Licensed Products in the Field in the Apollomics Territory (including relevant training materials, global brand and global market research, in each case, with respect to Licensed Products).

6.4 No Diversion. Each Party hereby covenants and agrees that it shall not, and shall ensure that its Affiliates and sublicensees will not, directly or indirectly, promote, market, distribute, import, sell or have sold the Licensed Products, including via internet or mail order, in the other Party's territory. With respect to any country in the other Party's territory, a Party shall not, and shall ensure that its Affiliates and their respective sublicensees will not: (a) establish or maintain any branch, warehouse or distribution facility for Licensed Products in such countries, (b) knowingly engage in any advertising or promotional activities relating to Licensed Products that are directed primarily to customers or other purchaser or users of Licensed Products located in such countries, (c) actively solicit orders for Licensed Products from any prospective purchaser located in such countries, or (d) knowingly sell or distribute Licensed Products to any person in such Party's territory who intends to sell or has in the past sold Licensed Products in such countries. If either Party receives any order for any Licensed Product from a prospective purchaser reasonably believed to be located in a country in the other Party's territory, the receiving Party shall immediately refer that order to the other Party and such Party shall not accept any such orders. Each Party shall not deliver or tender (or cause to be delivered or tendered) Licensed Products into a country in the other Party's territory. Each Party shall not, and shall ensure that its Affiliates and their respective sublicensees will not, knowingly restrict or impede in any manner the other Party's exercise of its retained exclusive rights in the other Party's territory.

6.5 Field Restrictions. Apollomics hereby covenants that it shall not, nor shall it permit any Affiliate or sublicensee to, directly or indirectly, market, promote, detail, sell or offer for sale Licensed Products in the Apollomics Territory for any use outside the Field. GlycoMimetics acknowledges and understands that Apollomics cannot control the ultimate use of Licensed Products it sells and that the purpose of the foregoing covenant is to prevent Apollomics and its Affiliates and sublicensees from facilitating or encouraging uses outside the Field.

ARTICLE 7
MANUFACTURE AND SUPPLY

7.1 GlycoMimetics Manufacture and Supply. Apollomics shall purchase from GlycoMimetics, and GlycoMimetics shall use Commercially Reasonable Efforts to supply to Apollomics, the Licensed Product at clinical grade at GlycoMimetics' Manufacturing Cost [*******] for Apollomics to conduct any clinical trial for obtaining any Regulatory Approval in the Field in the Apollomics Territory. The Parties shall negotiate in good faith a clinical supply agreement to be executed within sixty (60) days after the Effective Date in accordance with the terms set forth in **Exhibit E**. Additionally, the Parties shall negotiate in good faith a commercial supply agreement to be executed within [*******] prior to the anticipated First Commercial Sale of a Licensed Product by Apollomics in the Apollomics Territory in accordance with the terms set forth in **Exhibit E** (each of the clinical supply agreement and the commercial supply agreement, a "**Supply Agreement**"). For clarity, Apollomics shall not have the right to Manufacture or have Manufactured any Licensed Product for clinical or commercial use prior to the completion of the manufacturing technology transfer set forth in Section 7.2.

7.2 Manufacturing Technology Transfer. At any time after data lock, Apollomics may request to initiate the manufacturing technology transfer. Notwithstanding the foregoing, (a) if GlycoMimetics is unable to provide Licensed Product to specifications as required by the NMPA or within the cost cap specified in the Supply Agreement (in each case whether before or after data lock), either Party may request to initiate the manufacturing technology transfer; or (b) if GlycoMimetics is unable to supply the Licensed Product at clinical grade or for commercial purposes in amounts sufficient to satisfy Apollomics' binding forecasts for such Licensed Product submitted to GlycoMimetics pursuant to the terms and conditions of the Supply Agreement (whether before or after data lock), Apollomics may request to initiate the manufacturing technology transfer. Following any such request by Apollomics or GlycoMimetics to initiate the manufacturing technology transfer in accordance with this Section 7.2, the Parties shall enter into a manufacturing technology transfer agreement ("**Manufacturing Technology Transfer Agreement**") to transfer to Apollomics all documents and information, and provide technical assistance and support for Apollomics to Manufacture or have Manufactured by a third party contractor engaged by Apollomics, the Licensed Product and Licensed Compound to the extent it is to be actually used in the Manufacture of Licensed Products. Apollomics shall pay GlycoMimetics' external and internal costs incurred in connection with providing such information or assistance pursuant to this Section 7.2 and the Manufacturing Technology Transfer Agreement, and such information or assistance shall be provided on a one-time basis, unless otherwise agreed by the Parties. For clarity, the Parties agree that subject to the foregoing of this Section 7.2, no manufacturing technology transfer shall begin prior to database lock of a Licensed Product in the first Indication in the Apollomics Territory without GlycoMimetics' written consent.

7.3 Distribution. Apollomics will be solely responsible for the distribution of Licensed Products in the Field in the Apollomics Territory.

7.4 Brand Security and Anti-Counterfeiting. The Parties will establish contacts for communication regarding brand security issues, and each Party shall reasonably cooperate with the other Party with respect thereto.

ARTICLE 8
COMPENSATION

8.1 Initial Payment. Within ten (10) Business Days after the Effective Date, Apollomics shall pay to GlycoMimetics a one-time, non-refundable, non-creditable payment of nine million U.S. Dollars (US$9,000,000).

8.2 Development Milestone Payments. Apollomics shall pay to GlycoMimetics the one-time, non-refundable, non-creditable payments set forth in the table below within thirty (30) days of the first achievement by a Licensed Product of the applicable milestone event, whether by or on behalf of Apollomics, its Affiliate, or their respective sublicensees. For purposes of clarity, each milestone payment shall be payable only one time for a specific Licensed Compound in a Licensed Product for each Indication (i.e., a milestone payment shall be payable only one time, if only the formulation changes but the Indication is the same). For purposes of this Section 8.2, different formulations of the same Licensed Compound will be considered the same License Product.

Milestone Event	Milestone Payment
With respect to GMI-1271:	
1. [***]_	US$[***]
2. Regulatory Approval [***] in the Apollomics Territory	US$[***]
3. [***] Clinical Trial [***] in the Apollomics Territory	US$[***]
4. Regulatory Approval [***] in the Apollomics Territory	US$[***]
With respect to GMI-1687:	
5. [***] Clinical Trial in the Apollomics Territory	US$[***]
6. [***] Clinical Trial in the Apollomics Territory	US$[***]
7. Regulatory Approval [***] in the Apollomics Territory	US$[***]
8. [***] Clinical Trial [***] in the Apollomics Territory	US$[***]
Regulatory Approval [***] in the Apollomics Territory	US$[***]

*[1***]*

If a milestone event is achieved and the prior milestone payment with respect to any previous milestone event has not been paid, then Apollomics shall pay GlycoMimetics such unpaid previous milestone payment(s) within thirty (30) days of achievement of such milestone event. For clarity and illustrative purposes only, if, with respect to GMI-1271, a Regulatory Approval [***] but no milestone payment was made [***], the milestone payment for [***] shall be due within thirty days of [***].

Notwithstanding the foregoing in this Section 8.2, if Apollomics [***].

8.3 Commercial Milestone Payments. Apollomics shall pay to GlycoMimetics the additional one-time, non-refundable, non-creditable payments set forth in the table below for the licenses herein within thirty (30) days after the first achievement of each milestone event described below. For clarity, the milestone payments in this Section 8.3 shall be additive such that if multiple milestone events specified below are achieved in the same Calendar Quarter, then the milestone payments for all such milestone events shall be payable within thirty (30) days after the end of such Calendar Quarter. For clarity, each of the following milestone payments shall be payable only once regardless of the number of times such milestone event is achieved.

Commercial Milestone Event	Milestone Payment
The annual Net Sales of all Licensed Products in the Apollomics Territory in a Fiscal Year first reaches [***]	US$[***]
The annual Net Sales of Licensed Products in the Apollomics Territory in a Fiscal Year first reaches [***]	US$[***]
The annual Net Sales of Licensed Products in the Apollomics Territory in a Fiscal Year first reaches [***]	US$[***]

8.4 Royalties on Net Sales.

(a) Royalty Rate. Subject to the terms and conditions of this Section 8.4, within sixty (60) days after the end of each Calendar Quarter during the Royalty Term, Apollomics shall pay to GlycoMimetics non-creditable, non-refundable royalties on annual Net Sales in the Apollomics Territory for the licenses herein during such Calendar Quarter, as calculated by multiplying the applicable royalty rate by the corresponding amount of incremental Net Sales in the Apollomics Territory, as follows:

Net Sales of Licensed Product	Royalty Rate
For that portion of Net Sales of Licensed Products in each Fiscal Year less than or equal to [***]	[***]%

For that portion of Net Sales of Licensed Products in each Fiscal Year greater than [***] but less than or equal to [***]	[***]%
For that portion of Net Sales of Licensed Products in each Fiscal Year greater than [***] but less than or equal to [***]	[***]%
For that portion of Net Sales of Licensed Products in each Fiscal Year greater than [***]	[***]%

(b) Royalty Term. Royalties payable under Section 8.4(a) shall be paid by Apollomics (on a Licensed Product-by-Licensed Product and Region-by-Region basis) beginning on the date of the First Commercial Sale of each Licensed Product in a Region in the Apollomics Territory and continuing until the later of: (i) fifteen (15) years from the date of First Commercial Sale of such Licensed Product in such Region, or (ii) expiration of the last Valid Claim of a GlycoMimetics Licensed Patent or Joint Patent Covering such Licensed Product in such Region (the "**Royalty Term**").

(c) Royalty Reduction.

(i) Valid Claim Expiration. Beginning with the first Calendar Quarter that a Licensed Product is not Covered by a Valid Claim of a GlycoMimetics Licensed Patent or Joint Patent in a Region where such Licensed Product is sold, the applicable royalty rate set forth in Section 8.4(a) with respect to Net Sales of such Licensed Product in such Region shall be reduced by [***].

(ii) Royalty Reduction for Third Party Licenses. If Apollomics [***], then Apollomics may deduct ***].

(d) Royalty Floor. Notwithstanding Section 8.4(c), in no event shall any reduction permitted in Section 8.4(c) (individually or in the aggregate) reduce the royalty rate payable to GlycoMimetics hereunder by more than [***] of the royalty rate that would have applied prior to any reduction, in each case, for a given Licensed Product in a given Region during each Calendar Quarter.

8.5 Royalty Payments; Reports. Royalties under Section 8.4 shall be calculated and reported for each Calendar Quarter during the Royalty Term and shall be paid within sixty (60) days after the end of the applicable Calendar Quarter, commencing with the Calendar Quarter in which the First Commercial Sale of a Licensed Product occurs. Each payment of royalties shall be accompanied by a report of Net Sales of Licensed Products by Apollomics, its Affiliates and their respective sublicensees in sufficient detail to permit confirmation of the accuracy of the royalty payment made, including: (a) the amount of gross sales and Net Sales of Licensed Products in the Apollomics Territory on a Licensed Product-by-Licensed Product and Region-by-Region basis, (b) an itemized calculation showing the deductions from gross sales (by each major category as set forth in the definition of Net Sales herein) to determine Net Sales and (c) a calculation of

the amount of royalties due to GlycoMimetics in U.S. Dollars, including the application of any exchange rate used.

8.6 Product Supply Payments. Apollomics shall pay GlycoMimetics for Licensed Products supplied by GlycoMimetics as set forth in Section 7.1 or in the clinical Supply Agreement and commercial Supply Agreement, if applicable.

8.7 Payment Method; Foreign Exchange. All payments owed by Apollomics under this Agreement shall be made by wire transfer in immediately available funds to a bank and account designated in writing by GlycoMimetics. For clarity, all payments by Apollomics to GlycoMimetics under this Agreement shall be in U.S. Dollars. The rate of exchange to be used in computing the amount of currency equivalent in U.S. Dollars of any amounts payable in U.S. Dollars by Apollomics to GlycoMimetics under this Agreement shall be determined and calculated using the average rate of exchange based on OANDA rates for the Calendar Quarter in which the applicable payment is due. In the event that OANDA no longer exists at the time of calculation of the rate of exchange, then the Parties shall use the average of the past three (3) months' exchange rate as calculated by the Wall Street Journal.

8.8 Interest on Late Payments. If GlycoMimetics does not receive payment of any sum due to it on or before the due date, interest shall thereafter accrue on the sum due to GlycoMimetics until the date of payment at the per annum rate of [*******] over the then-current prime rate reported in The Wall Street Journal or the maximum rate allowable by Applicable Law, whichever is lower, with such interest compounded quarterly.

8.9 Records; Audits.

(a) Apollomics shall, and shall cause its Affiliates and their respective sublicensees, to maintain complete and accurate records in accordance with Accounting Standards and in sufficient detail to permit GlycoMimetics to confirm the accuracy of the calculation of royalty payments and the achievement of the milestone events. All payments and other amounts under this Agreement shall be accounted for in accordance with Accounting Standards. Upon reasonable prior notice, such records shall be available for examination during regular business hours for a period of [*******] from the end of the Fiscal Year to which they pertain, and not more often than once each Fiscal Year, by an independent certified public accountant selected by GlycoMimetics and reasonably acceptable to Apollomics, for the sole purpose of verifying the accuracy of the financial reports furnished by Apollomics pursuant to this Agreement and any payments with respect thereto. Any such auditor shall not disclose Apollomics' Confidential Information, except to the extent such disclosure is necessary to verify the accuracy of the financial reports furnished by Apollomics or the amount of payments due under this Agreement. Any amounts shown to be owed but unpaid shall be paid within thirty (30) days from the accountant's report, plus interest (as set forth in Section 8.8) from the original due date. GlycoMimetics shall bear the full cost of such audit unless such audit discloses an underpayment by Apollomics of more than [*******] of the amount due for the audited period, in which case Apollomics shall bear the full cost of such audit.

(b) GlycoMimetics shall, and shall ensure that its Affiliates and its and their respective employees, agents and contractors, maintain complete and accurate records with respect

to GlycoMimetics' pharmacovigilance-related obligations set forth in Section 5.8. Upon reasonable prior notice, such records shall be available for examination during regular business hours for a period of [***] from the end of the Fiscal Year to which they pertain, and not more often than once each Fiscal Year, by Apollomics or its designee that is reasonably acceptable to GlycoMimetics, for the sole purpose of ensuring compliance with NMPA and other Regulatory Authority regulations. Any such records shall be deemed Confidential Information of GlycoMimetics.

8.10 Taxes.

(a) Taxes on Income. Each Party shall be solely responsible for the payment of all taxes imposed on its share of income arising directly or indirectly from the efforts of the Parties under this Agreement.

(b) Tax Cooperation. The Parties agree to cooperate with one another and use reasonable efforts to reduce or eliminate Tax Withholding or similar obligations in respect of payments made by Apollomics to GlycoMimetics under this Agreement (including pursuant to Sections 8.1, 8.2, 8.3, 8.4 and 8.6). To the extent Apollomics is required to deduct and withhold taxes from any payment to GlycoMimetics, Apollomics shall pay the amounts of such taxes to the proper Governmental Authority in a timely manner and promptly transmit to GlycoMimetics an official tax certificate or other evidence of such withholding sufficient to enable the other Party to claim such payment of taxes from any applicable Government Authority. GlycoMimetics shall provide Apollomics any tax forms that may be reasonably necessary in order for Apollomics not to withhold tax or to withhold tax at a reduced rate under an applicable bilateral income tax treaty. Each Party shall provide the other with reasonable assistance to enable the recovery, as permitted by Applicable Law, of withholding taxes, VAT or similar obligations resulting from payments made under this Agreement, such recovery to be for the benefit of the Party bearing such withholding tax or VAT. Specifically, in the event that any tax has been withheld upon a payment made under this Agreement and been remitted by Apollomics to a Governmental Authority if requested by Apollomics and if, and for so long as, the Parties acting in good faith mutually agree that there is a reasonable prospect of successfully obtaining a refund of such tax, then Apollomics may, at its sole cost and expense, seek a refund of such tax from the proper Governmental Authority. GlycoMimetics agrees to reasonably cooperate with Apollomics in the pursuit of such tax refund (including, if required by Applicable Law or by the applicable Governmental Authority, permitting Apollomics to seek such tax refund in GlycoMimetics' name and participating in any application or appeal that requires that GlycoMimetics be the party applying for such tax refund,); *provided* that, (i) Apollomics agrees to assume responsibility for direct payment of lawyers' and other advisors' fees and any other costs associated with seeking such refund, and (ii) to the extent that GlycoMimetics is ever the party making such payment, Apollomics agrees that forthwith upon presentation by GlycoMimetics of the applicable invoice(s), Apollomics shall refund GlycoMimetics' reasonable expenses in cooperating in the pursuit of such tax refund.

(c) VAT. All payments due to GlycoMimetics from Apollomics pursuant to this Agreement shall be paid exclusive of, and without reduction for, any value-added tax (including, for greater certainty, any goods and services tax, harmonized sales tax and any similar provincial sales tax) ("**VAT**") (which, if applicable, shall be payable by Apollomics upon receipt of a valid VAT invoice). If GlycoMimetics determines that it is required to report any such tax,

Apollomics shall promptly provide GlycoMimetics with applicable receipts and other documentation necessary or appropriate for such report. For clarity, this Section 8.10(c) is not intended to limit Apollomics' right to deduct VAT in determining Net Sales.

ARTICLE 9
INTELLECTUAL PROPERTY MATTERS

9.1 Ownership.

(a) Background IP. Each Party shall own and retain all right, title, and interest in and to all Background Intellectual Property Controlled by such Party. For clarity, GlycoMimetics' Background Intellectual Property excludes GlycoMimetics Technology, GlycoMimetics Inventions, and Joint Inventions, and Apollomics' Background Intellectual Property excludes Apollomics Inventions and Joint Inventions.

(b) Data. GlycoMimetics shall solely own all Data generated by or on behalf of GlycoMimetics. For clarity, all Data Controlled by GlycoMimetics are included in the GlycoMimetics Licensed Know-How and licensed to Apollomics under Section 2.1. Apollomics shall solely own all Data generated by or on behalf of Apollomics in the Development, Manufacture, and Commercialization of Licensed Products in the Field in the Apollomics Territory. Apollomics hereby grants to GlycoMimetics (i) a royalty-free, fully paid-up, exclusive license, with the right to grant sublicenses through multiple tiers, to use such Data generated and owned by Apollomics for all purposes in the GlycoMimetics Territory, and (ii) upon expiration or termination of the Agreement (other than termination of the Agreement by Apollomics pursuant to Sections 13.4 or 13.5), an irrevocable, perpetual, royalty-free, fully paid-up, non-exclusive license, with the right to grant sublicenses through multiple tiers, to use such Data generated and owned by Apollomics for all purposes in the Apollomics Territory (in addition to the license granted in clause (i) which shall become perpetual and irrevocable upon such expiration or termination). Upon expiration of this Agreement, GlycoMimetics hereby grants to Apollomics an irrevocable, perpetual, royalty-free fully paid-up, non-exclusive license, with the right to grant sublicenses through multiple tiers, to use such Data generated and owned by GlycoMimetics for all purposes in the Apollomics Territory.

(c) Product Materials. Subject to the terms and conditions of this Agreement, each Party hereby grants to the other Party a fully-paid up, royalty-free license, with the right to grant sublicenses through multiple tiers, to use Product Materials generated and owned by such Party, for the Development, Manufacture (with respect to Apollomics, solely to the extent applicable under Section 7.2) and Commercialization of the Licensed Product in the other Party's respective territory during the Term of this Agreement.

(d) Inventions. Inventorship of any Inventions will be determined in accordance with U.S. patent laws.

(i) GlycoMimetics Inventions. Any Inventions generated, developed, conceived or reduced to practice (constructively or actually) solely by or on behalf of GlycoMimetics, its Affiliates and their respective sublicensees, including their employees, agents and contractors pursuant to activities conducted under this Agreement or in connection with the

Development, Manufacture, or Commercialization of any Licensed Product ("**GlycoMimetics Inventions**") shall be solely and exclusively owned by GlycoMimetics. For clarity, all GlycoMimetics Inventions that are reasonably necessary or useful for the Development, Manufacture and Commercialization of Licensed Products in the Apollomics Territory shall be included in the GlycoMimetics Technology licensed to Apollomics under Section 2.1, including any Patent rights therein.

(ii) Apollomics Inventions. Any Inventions, including Manufacturing improvements, generated, developed, conceived or reduced to practice (constructively or actually) solely by or on behalf of Apollomics, its Affiliates and their respective sublicensees, including their employees, agents and contractors pursuant to activities conducted under this Agreement or in connection with the Development, Manufacture, or Commercialization of any Licensed Product ("**Apollomics Inventions**") shall be solely and exclusively owned by Apollomics. Apollomics shall promptly disclose all Apollomics Inventions to GlycoMimetics in writing. Apollomics hereby grants GlycoMimetics (A) an royalty-free, fully paid-up, exclusive license, with the right to grant sublicenses through multiple tiers, under all Apollomics Inventions for the Development, Manufacture and Commercialization of the Licensed Products in the GlycoMimetics Territory, and (B) upon expiration or termination of this Agreement (other than termination of this Agreement by Apollomics pursuant to Sections 13.4 or 13.5) an irrevocable, perpetual, royalty-free, fully paid-up, non-exclusive license, with the right to grant sublicenses through multiple tiers, under all Apollomics Inventions for Development, Manufacture, and Commercialization of Licensed Products in the Apollomics Territory (in addition to the license in clause (A)).

(iii) Joint Inventions. Any Inventions generated, developed, conceived or reduced to practice (constructively or actually) jointly by or on behalf of Apollomics and GlycoMimetics, their Affiliates and respective sublicensees, including their employees, agents and contractors ("**Joint Inventions**") shall be jointly owned by the Parties. Each Party shall promptly disclose Joint Inventions developed by its Representatives to the other Party.

(e) Apollomics' Affiliates, Sublicensees and Subcontractors. Apollomics shall ensure that each of its Affiliates, sublicensees and subcontractors under this Agreement has a contractual obligation to disclose to Apollomics all Data, Product Materials and Inventions generated, invented, discovered, developed, made or otherwise created by them or their employees, agents or independent contractors, and to provide sufficient rights with respect thereto, so that Apollomics can comply with its obligations under this Article 9.

9.2 Patent Prosecution.

(a) Definition. For the purpose of this Article 9, "prosecution" (and all correlative forms of "prosecution") of Patents shall include, without limitation, all communication and other interaction with any patent office or patent authority having jurisdiction over a Patent application throughout the world in connection with any pre-grant proceedings and post-grant proceeding, including opposition proceedings.

(b) GlycoMimetics Licensed Patents; Joint Patents. As between the Parties, GlycoMimetics shall have the first right, but not obligation, to prepare, file, prosecute and maintain or abandon the GlycoMimetics Licensed Patents and Joint Patents on a worldwide basis.

GlycoMimetics will use Commercially Reasonable Efforts to prepare, file, prosecute, and maintain all GlycoMimetics Licensed Patents and Joint Patents in the Apollomics Territory; *provided, however*, that GlycoMimetics does not represent or warrant that any patent will issue or be granted based on patent applications contained in the GlycoMimetics Licensed Patents or Joint Patents, or that the claims in any such Patents will not later be held unpatentable or invalid. After the Effective Date, GlycoMimetics shall provide Apollomics reasonable opportunity to review and comment on such filing and prosecution efforts regarding the GlycoMimetics Licensed Patents and Joint Patents in the Apollomics Territory, including, (i) promptly providing Apollomics with copies of all material communications from any patent authority in the Apollomics Territory with respect thereto; (ii) providing Apollomics, for its review and comment, with drafts of any material filings or responses to be made to such patent authorities in a reasonable amount of time in advance of submitting such filings or responses; and (iii) considering in good faith comments thereto provided by Apollomics in connection with the filing and prosecution thereof. Apollomics shall reimburse GlycoMimetics for all out-of-pocket patent expenses incurred on or after the Effective Date in connection with the preparation, filing, prosecution, and maintenance of all GlycoMimetics Licensed Patents and Joint Patents in the Apollomics Territory.

(c) Apollomics Patents. As between the Parties, Apollomics shall have the first right, but not obligation, to prepare, file, prosecute and maintain or abandon the Apollomics Patents on a worldwide basis. Apollomics shall provide GlycoMimetics reasonable opportunity to review and comment on such filing and prosecution efforts regarding the Apollomics Patents, including, (i) promptly providing GlycoMimetics with copies of all material communications from any patent authority with respect thereto; (ii) providing GlycoMimetics, for its review and comment, with drafts of any material filings or responses to be made to such patent authorities in a reasonable amount of time in advance of submitting such filings or responses; and (iii) considering in good faith comments thereto provided by GlycoMimetics in connection with the filing and prosecution thereof.

(d) Step-In Rights. Either Party may cease prosecution or maintenance of any Patent that such Party is responsible for prosecuting or maintaining pursuant to this Section 9.2 on a country-by-country basis by providing the other Party written notice at least sixty (60) days in advance of any filing or payment due date. If the responsible Party elects to cease prosecution or maintenance of the relevant Patent in a country, the other Party, shall have the right, but not the obligation, at its sole discretion and cost, to continue prosecution or maintenance of such Patent and in such country ("**Step-In Rights**"), *provided* that, with respect to GlycoMimetics Licensed Patents, Apollomics may only exercise its Step-In Rights with respect to the Apollomics Territory. If the other Party elects to continue prosecution or maintenance or elects to file additional applications following the responsible Party's election to cease prosecution or maintenance pursuant to this Section 9.2, the responsible Party shall transfer the applicable patent files to such other Party or its designee and execute such documents and perform such acts at the responsible Party's expense as may be reasonably necessary to allow the other Party to initiate or continue such filing, prosecution or maintenance at the other Party's sole expense.

(e) Cooperation. Each Party shall provide the other Party, at the other Parties' expense, with all reasonable assistance and cooperation in the patent filing and prosecution efforts set forth in this Section 9.2, including providing any necessary powers of attorney and executing any other required documents or instruments for such prosecution.

9.3 Patent Term Extensions in the Apollomics Territory. The JDC will discuss and recommend for which, if any, of the Patents within the GlycoMimetics Licensed Patents, Apollomics Patents and Joint Patents in the Apollomics Territory the Parties should seek patent term extensions. GlycoMimetics, in the case of the GlycoMimetics Licensed Patents and Joint Patents, and Apollomics, in the case of the Apollomics Patents, shall have the final decision-making authority with respect to applying for any such patent term extension in the Apollomics Territory, and will act with reasonable promptness in light of the development stage of Licensed Products to apply for any such patent term extension, where it so elects; *provided, however,* that if only one such Patent can obtain a patent term extension, then the Parties will consult in good faith to determine which such Patent(s) should be the subject of efforts to obtain a patent term extension. The Party that does not apply for an extension hereunder will cooperate fully with the other Party in making such filings or actions, including making available all required regulatory Data and Information and executing any required authorizations to apply for such patent term extension. All expenses incurred in connection with activities of each Party with respect to the Patent(s) for which such Party seeks patent term extensions pursuant to this Section 9.3 shall be borne by such Party filing the patent term extension.

9.4 Patent Enforcement.

(a) Notification; Information Sharing. If either Party becomes aware of any existing or threatened infringement of any GlycoMimetics Licensed Patent, Apollomics Patent or Joint Patent ("**Infringement**"), it shall promptly notify the other Party in writing to that effect, and the Parties will consult with each other regarding any actions to be taken with respect to such Infringement. Each Party shall share with the other Party all Information available to it regarding such alleged Infringement, pursuant to a mutually agreeable "common interest agreement" executed by the Parties under which the Parties agree to their shared, mutual interest in the outcome of any suit to enforce the GlycoMimetics Licensed Patents, Apollomics Patent and Joint Patent against such Infringement.

(b) Enforcement Rights. Apollomics shall have the first right, but not the obligation, to bring an appropriate suit or other action against any Person engaged in the Infringement of: (A) any GlycoMimetics Licensed Patent or Joint Patent in the Apollomics Territory, or (B) any Apollomics Patents worldwide, at Apollomics' sole cost and expense. GlycoMimetics shall have the first right, but not obligation, to bring an appropriate suit or other action against any Person engaged in the Infringement of any Joint Patent in the GlycoMimetics Territory. GlycoMimetics shall have the sole right, but not obligation, to bring an appropriate suit or other action against any Person engaged in the Infringement of any GlycoMimetics Licensed Patent in the GlycoMimetics Territory. If the party bringing an Infringement suit or other action (the "**Enforcing Party**") elects to commence a suit to enforce such patent rights against such Infringement, then the non-Enforcing Party shall have the right to join such enforcement action upon notice to the Enforcing Party, and in this case the Parties shall share the cost and expense of such enforcement action equally (*provided* that, Apollomics shall not have the right to join an enforcement action of the GlycoMimetics Licensed Patents in the GlycoMimetics Territory). If the Party with the right to bring suit, pursuant to this Section 9.4(b), notifies the other Party that it does not intend to commence a suit to enforce the applicable Patent against such Infringement or to take other action to secure the abatement of such Infringement, or fails to take any such action after a period of thirty (30) days, then, to the extent that such Infringement results from a Third Party's

use or sale of a product that competes with a Licensed Product in the Field and in the other Party's respective Territory, such Party shall have the right, but not the obligation, to commence such a suit or take such action, at its sole cost and expense; *provided* that, in no event shall Apollomics take any action that is likely to materially or adversely impact the scope or enforceability of the GlycoMimetics Licensed Patents or Joint Patents in the GlycoMimetics Territory and Apollomics shall not have the right to commence such a suit or take such action regarding Infringement of any GlycoMimetics Licensed Patent in the GlycoMimetics Territory. If GlycoMimetics believes in good faith that the commencement of any such suit or action by Apollomics would reasonably be likely to have such an impact, then Apollomics shall not have the right to commence or continue such suit or action without the consent of GlycoMimetics. In addition, neither Party shall settle any such suit or action in any manner that would limit or restrict the ability of the other Party to sell the Licensed Products in its respective Territory without the prior written consent of such Party.

(c) Collaboration. Each Party shall provide the Enforcing Party with reasonable assistance in such enforcement, at such Enforcing Party's request and expense (unless a Party elects to join an enforcement action when the other Party is the Enforcing Party, in which case the expenses will be shared equally by the Parties), including joining such action as a party plaintiff if required by Applicable Law to pursue such action. The Enforcing Party shall keep the other Party regularly informed of the status and progress of such enforcement efforts, and shall reasonably consider the other Party's comments on any such efforts. The non-Enforcing Party shall be entitled to separate representation in such matter by counsel of its own choice and at its own expense, but such Party shall at all times cooperate fully with the Enforcing Party.

(d) Expenses and Recoveries. The Enforcing Party shall be solely responsible for any expenses it incurs as a result of such enforcement action, except that the Parties shall share equally the cost and expense of the enforcement action when the non-Enforcing Party elects to join the enforcement action. If the Enforcing Party recovers monetary damages in such claim, suit or action brought under Section 9.4(a), such recovery shall be allocated first to the reimbursement of any documented expenses incurred by the Parties in such enforcement action, and any remaining amounts shall be shared by the Parties as follows:

(i) if GlycoMimetics is the Enforcing Party and Apollomics does not elect to join the enforcement action and share the cost and expense of the enforcement action: [*******];

(ii) if GlycoMimetics is the Enforcing Party and Apollomics elects to join the enforcement action and share the cost and expense of the enforcement action: [*******];

(iii) if Apollomics is the Enforcing Party and GlycoMimetics does not elect to join the enforcement action and share the cost and expense of the enforcement action: [*******]; and

(iv) if Apollomics is the Enforcing Party and GlycoMimetics elects to join the enforcement action and share the cost and expense of the enforcement action: [*******].

For clarity, GlycoMimetics shall retain all amounts recovered under any suit or action with respect to Infringement of any GlycoMimetics Licensed Patent in the GlycoMimetics Territory.

9.5 Third Party Infringement Claims. If the Development, Manufacture, or Commercialization of any Licensed Product in the Field in the Apollomics Territory pursuant to this Agreement results in a claim, suit or proceeding alleging patent infringement against GlycoMimetics or Apollomics (or their respective Affiliates, licensees or sublicensees) (collectively, "**Third Party Infringement Actions**"), such Party shall promptly notify the other Party hereto in writing. GlycoMimetics shall have the right, but not the obligation, to direct and control the defense of such Third Party Infringement Action, at its own expense with counsel of its choice; *provided, however,* that Apollomics may participate in the defense and/or settlement thereof, at its own expense with counsel of its choice. In any event, GlycoMimetics agrees to keep Apollomics reasonably informed of all material developments in connection with any such Third Party Infringement Action for which GlycoMimetics exercises its right to direct and control the defense. GlycoMimetics agrees not to settle such Third Party Infringement Action, or make any admissions or assert any position in such Third Party Infringement Action, in a manner that would materially adversely affect the rights or interests of Apollomics, without the prior written consent of Apollomics, which shall not be unreasonably withheld or delayed. If GlycoMimetics does not exercise its right to direct and control the defense of a Third Party Infringement Action that is brought against Apollomics, then Apollomics shall have such right at its own expense and to use counsel of its choice, and it shall agree to keep GlycoMimetics reasonably informed of all material developments in connection with such Third Party Infringement Action, and it shall not settle such Third Party Infringement Action, or make any admissions or assert any position in such Third Party Infringement Action, in a manner that would materially adversely affect the rights or interests of GlycoMimetics, without the prior written consent of GlycoMimetics, which shall not be unreasonably withheld or delayed. With respect to any Third Party Infringement Action in the Apollomics Territory, the Party controlling the response to the Third Party Infringement Action shall bear all costs of such action. In the event of any recovery in connection with a Third Party Infringement Action, the Parties shall allocate any such recovery in accordance with Section 9.4(d)(i)-(iv), where, solely for the purposes of recovery allocation under this Section 9.5, the controlling Party under this Section 9.5 shall be deemed an "Enforcing Party" and the applicable Third Party Infringement Action resulting in such recovery shall be deemed an "enforcement action" as described in Section 9.4(d)(i)-(iv).

9.6 Trademarks.

(a) GlycoMimetics shall own and retain all right, title, and interest in and to all Licensed Marks worldwide and shall register and maintain all trademarks associated with any Licensed Product (each a "**Licensed Mark**") worldwide, at GlycoMimetics cost and expense, and all goodwill in any such Licensed mark shall accrue to GlycoMimetics. GlycoMimetics hereby grants Apollomics a right to use all Licensed Marks to Develop, Commercialize, and Manufacture Licensed Products in the Field in the Apollomics Territory. Apollomics shall, and shall ensure that its Affiliates and its and their respective sublicensees, use the Licensed Marks solely in connection with the Development, Commercialization, and Manufacture of Licensed Products in the Field in the Apollomics Territory.

(b) During the Term, Apollomics may request in writing a transfer of ownership of any Licensed Mark in the Apollomics Territory from GlycoMimetics to Apollomics. GlycoMimetics shall review such request in good faith, and within thirty (30) days of receipt of Apollomics' request to transfer ownership of such Licensed Mark, GlycoMimetics may, at its sole discretion, approve such request and submit to Apollomics a written invoice for all past preparation, filing, prosecution, and maintenance costs incurred by GlycoMimetics with respect to such approved Licensed Mark in the Apollomics Territory. Apollomics shall pay the invoiced amount to GlycoMimetics within thirty (30) days of receipt of such invoice. Upon full payment of the invoiced amount pursuant to this Section 9.6(b), GlycoMimetics hereby transfers and assigns all its right, title, and interest in and to such Licensed Mark in the Apollomics Territory to Apollomics.

(c) Notwithstanding anything to the contrary, to the extent required by Applicable Law, (i) Apollomics may include GlycoMimetics' name and corporate logo on the Licensed Product label, packaging, promotional/marketing materials to indicate that the Licensed Product is in-licensed from GlycoMimetics, and shall display GlycoMimetics' name and corporate logo with equal prominence and comparable size, resolution, print quality, and location, as instructed by GlycoMimetics from time to time, as Apollomics' name and corporate logo is displayed, and (ii) GlycoMimetics hereby grants to Apollomics a non-exclusive, fully paid-up, royalty free, sublicensable license to use GlycoMimetics' name and corporate logo for the Commercialization of the Licensed Product in the Apollomics Territory to the extent consistent with this Section 9.6(c).

ARTICLE 10
REPRESENTATIONS AND WARRANTIES; COVENANTS

10.1 Mutual Representations and Warranties. Each Party hereby represents and warrants to the other Party, as follows:

(a) Corporate Existence. As of the Effective Date, it is a company or corporation duly organized, validly existing, and in good standing under the Laws of the jurisdiction in which it is incorporated;

(b) Corporate Power, Authority and Binding Agreement. As of the Effective Date, (i) it has the corporate power and authority and the legal right to enter into this Agreement and perform its obligations hereunder; (ii) it has taken all necessary corporate action on its part required to authorize the execution and delivery of this Agreement and the performance of its obligations hereunder; and (iii) this Agreement has been duly executed and delivered on behalf of such Party, and constitutes a legal, valid, and binding obligation of such Party that is enforceable against it in accordance with its terms, subject to applicable bankruptcy, insolvency, reorganization, moratorium and similar Laws affecting creditors' rights and remedies generally;

(c) No Conflict. The execution and delivery of this Agreement, the performance of such Party's obligations in the conduct of the Development Plan and the license granted pursuant to this Agreement (i) do not and will not conflict with or violate any requirement of Applicable Law existing as of the Effective Date; (ii) do not and will not conflict with or violate the certificate of incorporation or by-laws (or other constating documents) of such Party; and (iii)

do not and will not conflict with, violate, breach or constitute a material default under any contractual obligations of such Party or any of its Affiliates existing as of the Effective Date;

(d) No Violation. Neither such Party nor any of its Affiliates is under any obligation to any Person, contractual or otherwise, that is in violation of the terms of this Agreement or that would impede the fulfillment of such Party's obligations hereunder;

(e) No Debarment. Neither such Party nor any of its Affiliates is debarred or disqualified under the Act or comparable Applicable Laws outside the U.S.; and

(f) No Consents. No authorization, consent, approval of a Third Party, nor to such Party's knowledge, any license, permit, exemption of or filing or registration with or notification to any court or Governmental Authority is or will be necessary for the (i) valid execution and delivery of this Agreement by such Party; or (ii) the consummation by such Party of the transactions contemplated hereby.

10.2 Additional Representations and Warranties of GlycoMimetics. GlycoMimetics represents and warrants to Apollomics, as of the Effective Date, as follows:

(a) Title; Encumbrances. (i) It has sufficient legal and/or beneficial title or ownership or license, free and clear from any mortgages, pledges, liens, security interests, conditional and installment sale agreement, encumbrances, charges or claim of any kind, of the GlycoMimetics Technology to grant the licenses to Apollomics as purported to be granted pursuant to this Agreement; and (ii) to GlycoMimetics' knowledge, no Third Party has taken any action before the United States Patent and Trademark Office, or any counterpart thereof outside the U.S., claiming legal and/or beneficial title or ownership or license of any GlycoMimetics Technology;

(b) Intellectual Property Rights. The GlycoMimetics Technology includes all intellectual property rights Controlled by GlycoMimetics which (i) are reasonably necessary for the Development, Manufacture, or Commercialization of the Licensed Product by Apollomics in the Apollomics Territory in accordance with the terms of this Agreement as contemplated on the Effective Date or (ii) were generated, developed, conceived, reduced to practice (constructively or actually) and used by or on behalf of GlycoMimetics or its Affiliates in the Development, Manufacture, or Commercialization of Licensed Product;

(c) Notice of Infringement or Misappropriation. It has not received any written notice from any Third Party asserting or alleging that (i) any research, development, manufacture, or commercialization of a Licensed Product by GlycoMimetics prior to the Effective Date infringed or misappropriated the intellectual property rights of such Third Party, or (ii) the Development, Manufacture, or Commercialization of the Licensed Products in the Apollomics Territory would infringe or misappropriate the intellectual property rights of such Third Party;

(d) Non-Infringement of Rights by Third Parties. To GlycoMimetics' knowledge, no Third Party is infringing or has infringed the GlycoMimetics Licensed Patents as of the Effective Date;

(e) Non-Assertion by Third Parties. To GlycoMimetics' knowledge, no Third Party has asserted in writing (i) that the issued patents within the GlycoMimetics Licensed Patents

set forth in **Exhibit A** are invalid, unregisterable, or unenforceable or (ii) the misuse or non-infringement of such Patents;

(f) No Proceeding. There is no pending, and to GlycoMimetics' knowledge, no threatened, adverse action, suit or proceeding against GlycoMimetics involving any GlycoMimetics Technology or a Licensed Product;

(g) No Conflicts. GlycoMimetics has not entered, and shall not enter, into any agreement with any Third Party that is in conflict with the rights granted to Apollomics under this Agreement, and has not taken and shall not take any action that would in any way prevent it from granting the rights granted to Apollomics under this Agreement, or that would otherwise materially conflict with or adversely affect Apollomics' rights under this Agreement.

10.3 Additional Representations and Warranties of Apollomics. Apollomics represents and warrants to GlycoMimetics that:

(a) To Apollomics' knowledge as of the Effective Date, Apollomics does not Control any Patent that is necessary to make, use, import, offer for sale or sell Licensed Products in the Field;

(b) Neither Apollomics nor any of its Affiliates or it or their respective sublicensees will employ or use the services of any Person who is debarred or disqualified under the Act, or comparable Applicable Laws outside the U.S., in connection with activities relating to any Licensed Product; and in the event that Apollomics becomes aware of the debarment or disqualification or threatened debarment or disqualification of any Person providing services to Apollomics or any of its Affiliates with respect to any activities relating to any Licensed Product, Apollomics will immediately notify GlycoMimetics in writing and Apollomics will cease, or cause its Affiliate or it or their respective sublicensee to cease (as applicable), employing, contracting with, or retaining any such Person to perform any services relating to any Licensed Product; and

(c) Neither Apollomics nor any of its Affiliates, or its or their sublicensees, shall exploit in any manner any Licensed Product outside of the scope of the licenses expressly granted to Apollomics under this Agreement

10.4 Compliance with Laws.

(a) Each Party shall, and shall ensure that its Affiliates and their respective sublicensees will, comply in all respects with Anti-Corruption Laws, Proper Conduct Practices and all Applicable Law in the Development, Manufacturing, and Commercialization of Licensed Products and performance of its obligations under this Agreement, including the ICH, GCP, GLP and any Regulatory Authority and Governmental Authority health care programs having jurisdiction in such Party's respective territory, each as may be amended from time to time.

(b) Each Party shall immediately notify the other Party if it has any information or suspicion that there may be a violation of any Applicable Laws (including Anti-Corruption Laws) in connection with its performance under this Agreement or the Development or Commercialization of any Licensed Product hereunder. In the event that either Party has violated or been suspected of violating any of its obligations, representations, warranties or covenants in

Section 10.4(a), such Party will take reasonable actions to remedy such breach and to prevent further such breaches from occurring.

(c) Notwithstanding the foregoing, each Party will have the right, upon reasonable prior written notice and during the other Party's regular business hours, to audit the other Party's books and records in the event that a suspected violation of any Anti-Corruption Law needs to be investigated (in such Party's reasonable, good-faith discretion). Such audit shall be conducted by such Party's audit team comprised of qualified auditors who have received anticorruption training. For clarity, a credible finding, after a reasonable investigation, of any breach of Section 10.4(a) or 10.4(b) with respect to any Anti-Corruption Law, shall be deemed a material breach of this Agreement and allow the non-breaching Party to terminate this Agreement in accordance with Section 13.4.

10.5 Additional Apollomics Covenants. In addition to any covenants made by Apollomics elsewhere in this Agreement, Apollomics hereby covenants to GlycoMimetics that neither Apollomics nor any of its Affiliates, nor any of their respective employees, agents or contractors shall use any confidential information obtained from any Third Party (including any prior employer), directly or indirectly, whether obtained prior to the Effective Date or during the Term, in connection with activities performed under this Agreement, and Apollomics shall be solely responsible and liable for, and shall indemnify GlycoMimetics pursuant to Section 11.2 in connection with, any breach of this covenant by Apollomics, any of its Affiliates, or their respective employees, agents or contractors.

10.6 No Other Representations or Warranties. EXCEPT AS EXPRESSLY STATED IN THIS AGREEMENT, NO REPRESENTATIONS OR WARRANTIES WHATSOEVER, WHETHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT OR NON-MISAPPROPRIATION OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS, ARE MADE OR GIVEN BY OR ON BEHALF OF A PARTY OR ITS AFFILIATES, AND ALL REPRESENTATIONS AND WARRANTIES, WHETHER ARISING BY OPERATION OF LAW OR OTHERWISE, ARE HEREBY EXPRESSLY EXCLUDED. FOR CLARITY AND WITHOUT LIMITING THE FOREGOING, GLYCOMIMETICS MAKES NO REPRESENTATION OR WARRANTY CONCERNING THE LICENSED PRODUCTS OR GLYCOMIMETICS TECHNOLOGY EXCEPT AS EXPRESSLY SET FORTH IN THIS ARTICLE 10. EACH PARTY HEREBY DISCLAIMS ANY REPRESENTATION OR WARRANTY THAT THE DEVELOPMENT, MANUFACTURE AND COMMERCIALIZATION OF THE PRODUCTS PURSUANT TO THIS AGREEMENT WILL BE SUCCESSFUL OR THAT ANY PARTICULAR SALES LEVEL WITH RESPECT TO THE PRODUCTS WILL BE ACHIEVED

ARTICLE 11
INDEMNIFICATION

11.1 Indemnification by GlycoMimetics. GlycoMimetics shall defend, indemnify, and hold Apollomics and its Affiliates and their respective officers, directors, employees, and agents (the "**Apollomics Indemnitees**") harmless from and against any and all losses, damages, liabilities, expenses and costs, including reasonable legal expense and attorneys' fees ("**Losses**")

to which any Apollomics Indemnitee may become subject as a result of any claim, demand, action or other proceeding (collectively, "**Claims**") by any Third Party arising out of, based on, or resulting from directly or indirectly (a) the Development, Manufacture, or Commercialization of Licensed Products in the Apollomics Territory by or on behalf of GlycoMimetics or its Affiliates prior to the Effective Date, (b) the Development, Manufacture, or Commercialization of Licensed Products in the GlycoMimetics Territory (except to the extent that any such activities are conducted by or on behalf of Apollomics or its Affiliates as permitted under this Agreement) (including any Third Party Infringement Actions), (c) the breach or violation of any covenant or GlycoMimetics' obligations under this Agreement, including GlycoMimetics' representations, warranties or covenants set forth herein, (d) the conduct of any pharmacovigilance-related activities set forth in Section 5.8 by or on behalf of GlycoMimetics (except to the extent that such Claim arises from [*******]) or (e) the willful misconduct or negligent acts of or violation of Applicable Law by any GlycoMimetics Indemnitee. The foregoing indemnity obligation shall not apply to the extent that (i) the Apollomics Indemnitees fail to comply with the indemnification procedures set forth in Section 11.3 and GlycoMimetics' defense of the relevant Claim is materially prejudiced by such failure, or (ii) any Claim arises from, is based on, or results from any activity or occurrence for which Apollomics is obligated to indemnify the GlycoMimetics Indemnitees under Section 11.2.

11.2 Indemnification by Apollomics. Apollomics shall defend, indemnify, and hold GlycoMimetics and its Affiliates and their respective officers, directors, employees, and agents (the "**GlycoMimetics Indemnitees**") harmless from and against any and all Losses to which any GlycoMimetics Indemnitee may become subject as a result of any Claims by any Third Party arising out of, based on, or resulting from directly or indirectly (a) the Development, Manufacture, or Commercialization of Licensed Products by or on behalf of Apollomics or its Affiliates or sublicensees on or after the Effective Date (except to the extent that any such activities are conducted by or on behalf of GlycoMimetics or its Affiliates as permitted under this Agreement) (including any Third Party Infringement Actions), (b) the breach or violation of any covenant or Apollomics' obligations under this Agreement, including Apollomics' representations, warranties, or covenants set forth herein, or (c) the conduct of any pharmacovigilance-related activities set forth in Section 5.8 by or on behalf of Apollomics (except to the extent that such Claim arises from [*******] or (d) the willful misconduct or negligent acts of or violation of Applicable Law by any Apollomics Indemnitee. The foregoing indemnity obligation shall not apply to the extent that (i) the GlycoMimetics Indemnitees fail to comply with the indemnification procedures set forth in Section 11.3 and Apollomics' defense of the relevant Claim is materially prejudiced by such failure, or (ii) any Claim arises from, is based on, or results from any activity or occurrence for which GlycoMimetics is obligated to indemnify the Apollomics Indemnitees under Section 11.1.

11.3 Indemnification Procedures. The Party claiming indemnity under this Article 11 (the "**Indemnified Party**") shall give written notice to the Party from whom indemnity is being sought (the "**Indemnifying Party**") promptly after learning of such Claim and shall offer control of the defense of such Claim to the Indemnifying Party. The Indemnified Party shall provide the Indemnifying Party with reasonable assistance, at the Indemnifying Party's expense, in connection with the defense of the Claim for which indemnity is being sought. The Indemnified Party may participate in and monitor such defense with counsel of its own choosing at its sole expense; *provided, however,* the Indemnifying Party shall have the right to assume and conduct the defense of the Claim with counsel of its choice. The Indemnifying Party shall not settle any Claim without

the prior written consent of the Indemnified Party, not to be unreasonably withheld, unless the settlement involves only the payment of money. So long as the Indemnifying Party is actively defending the Claim in good faith, the Indemnified Party shall not settle or compromise any such Claim without the prior written consent of the Indemnifying Party. If the Indemnifying Party does not assume and conduct the defense of the Claim as provided above, (a) the Indemnified Party may defend against, consent to the entry of any judgment, or enter into any settlement with respect to such Claim in any manner the Indemnified Party may deem reasonably appropriate (and the Indemnified Party need not consult with, or obtain any consent from, the Indemnifying Party in connection therewith), and (b) the Indemnifying Party shall remain responsible to indemnify the Indemnified Party as provided in this Article 11. Notwithstanding anything contained in the foregoing to the contrary, the provisions of Section 9.5 shall govern the defense of any Infringement Actions. Additionally, in the event that GlycoMimetics has elected to defend any such Infringement Action, then Apollomics shall not be obligated to indemnify GlycoMimetics for any Claims related to such Infringement Action; rather, the Parties shall share such Claims equally.

11.4 Limitation of Liability. NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, PUNITIVE, OR INDIRECT DAMAGES ARISING FROM OR RELATING TO ANY BREACH OF THIS AGREEMENT, REGARDLESS OF ANY NOTICE OF THE POSSIBILITY OF SUCH DAMAGES. NOTWITHSTANDING THE FOREGOING, NOTHING IN THIS SECTION 11.4 IS INTENDED TO OR SHALL LIMIT OR RESTRICT THE INDEMNIFICATION RIGHTS OR OBLIGATIONS OF ANY PARTY UNDER SECTION 11.1 or 11.2, OR DAMAGES AVAILABLE FOR A PARTY'S BREACH OF ITS EXCLUSIVITY OBLIGATIONS IN SECTION 2.5 OR ITS CONFIDENTIALITY OBLIGATIONS IN SECTION 12.

11.5 Insurance. Each Party shall procure and maintain insurance, including product liability insurance, adequate to cover its obligations hereunder and consistent with normal business practices of prudent companies similarly situated. It is understood that such insurance shall not be construed to create a limit of either Party's liability with respect to its indemnification obligations under this Article 11. Each Party shall provide the other Party with written evidence of such insurance upon request. Each Party shall provide the other Party with written notice at least thirty (30) days prior to the cancellation, non-renewal or material change in such insurance.

ARTICLE 12
CONFIDENTIALITY

12.1 Confidentiality. Each Party agrees that, during the Term and for a period of ten (10) years thereafter, it shall keep confidential and shall not publish or otherwise disclose and shall not use for any purpose other than as provided for in this Agreement (which includes the exercise of any rights or the performance of any obligations hereunder or thereunder) any Confidential Information of the other Party, except to the extent expressly agreed in writing by the Parties. The foregoing confidentiality and non-use obligations shall not apply to any portion of the other Party's Confidential Information that the receiving Party can demonstrate by competent written proof:

(a) was already known to the receiving Party or its Affiliate, other than under an obligation of confidentiality, at the time of disclosure by the other Party;

(b) was generally available to the public or otherwise part of the public domain at the time of its disclosure to the receiving Party;

(c) became generally available to the public or otherwise part of the public domain after its disclosure and other than through any act or omission of the receiving Party or its Affiliate in breach of this Agreement;

(d) was disclosed to the receiving Party or its Affiliate without any confidentiality obligations by a Third Party who, to the Party's knowledge, had a legal right to make such disclosure and who did not obtain such information directly or indirectly from the other Party; or

(e) was independently discovered or developed by the receiving Party or its Affiliate without use of or reference to the other Party's Confidential Information, as evidenced by a contemporaneous writing.

For purposes of this Section 12.1(b)-(c), Confidential Information disclosed under this Agreement shall not be deemed to be within such exceptions unless such information is readily accessible to the public in a written publication, and such exceptions shall not include information the substance of which must be pieced together from any number of different publications or other sources.

12.2 Authorized Disclosure. Notwithstanding the obligations set forth in Section 12.1, a Party may disclose the other Party's Confidential Information and the terms of this Agreement to the extent:

(a) such disclosure is reasonably necessary (i) for the filing or prosecuting of Patent rights as contemplated herein; (ii) to comply with the requirements of Regulatory Authorities with respect to obtaining and maintaining Regulatory Approval of Licensed Product; or (iii) for the prosecuting or defending litigation as contemplated herein;

(b) such disclosure is reasonably necessary to its or its Affiliate's employees, agents, consultants, contractors, licensees or sublicensees on a need-to-know basis for the sole purpose of performing its obligations or exercising its rights hereunder; *provided* that in each case, the disclosees are bound by written obligations of confidentiality consistent with those contained in this Agreement;

(c) such disclosure is reasonably necessary to any bona fide potential or actual investor, acquiror, merger partner, or other financial or commercial partner for the sole purpose of evaluating or carrying out an actual or potential investment, acquisition or other business relationship; *provided* that in connection with such disclosure, such Party shall inform each disclosee of the confidential nature of such Confidential Information and require each disclosee to treat such Confidential Information as confidential; or

(d) such disclosure is reasonably necessary to comply with Applicable Laws, including regulations or rules promulgated by applicable securities commissions (or other securities regulatory authorities), security exchanges, court order, administrative subpoena or order.

Notwithstanding the foregoing, in the event a Party is required to make a disclosure of the other Party's Confidential Information pursuant to Section 12.2(a) or 12.2(d), such Party shall promptly notify the other Party of such required disclosure, to the extent that it is legally authorized or permitted to so, and shall use reasonable efforts to obtain, or to assist the other Party in obtaining, a protective order preventing or limiting the required disclosure.

12.3 Publicity; Terms of Agreement.

(a) The Parties agree that the terms of this Agreement are the Confidential Information of both Parties, subject to the special authorized disclosure provisions set forth in this Section 12.3.

(b) If either Party desires to make a public disclosure concerning the terms of this Agreement, such Party shall give reasonable prior advance notice of the proposed text of such disclosure to the other Party for its prior review and approval (except as otherwise provided herein), which approval shall not be unreasonably withheld or delayed. A Party commenting on such a proposed disclosure shall provide its comments, if any, within five (5) Business Days after receiving the proposed disclosure for review (or such shorter period of time as necessitated by regulatory requirements). In addition, where required by Applicable Law, including regulations promulgated by applicable security exchanges, either Party shall have the right to make a press release or other public disclosure regarding the achievement of each milestone under this Agreement as it is achieved, the achievements of Regulatory Approval in the Apollomics Territory as they occur, or the occurrence of other events that affect either Party's rights or obligations under this Agreement, in each case subject only to the review procedure set forth in the preceding sentences. In relation to the other Party's review of such an announcement, such other Party may make specific, reasonable comments on such proposed press release within the prescribed time for commentary. Neither Party shall be required to seek the permission of the other Party to repeat any information regarding the terms of this Agreement that has already been publicly disclosed by such Party, or by the other Party, in accordance with this Section 12.3.

(c) The Parties acknowledge that either or both Parties or their Affiliates may be obligated to file under Applicable Laws a copy of this Agreement with Governmental Authorities, including the U.S. Securities and Exchange Commission (the "**SEC**"). Each Party and its Affiliates shall be entitled to make such a required filing, *provided* that it requests confidential treatment of the commercial terms and sensitive technical terms hereof and thereof to the extent such confidential treatment is reasonably available. In the event of any such filing, each Party will provide the other Party with a copy of this Agreement marked to show provisions for which such Party or its Affiliate intends to seek confidential treatment and shall reasonably consider and incorporate the other Party's comments thereon to the extent consistent with the legal requirements, with respect to the filing Party or Affiliate, governing disclosure of material agreements and material information that must be publicly filed. The non-filing Party agrees to promptly (and in any event, no less less than seven (7) days after receipt of such proposed redactions) provide its comments on such proposed redactions. The Party seeking such disclosure shall exercise Commercially Reasonable Efforts to obtain confidential treatment of this Agreement from the SEC as represented by the redacted version reviewed by the other Party.

(d) Each Party may disclose the existence and terms of this Agreement to bona fide potential or actual investors, advisors, lenders, and research collaborators, *provided* each such entity is bound by confidentiality obligations no less stringent than this Article 12.

12.4 Technical Publication. Apollomics may not publish peer reviewed manuscripts, or provide other forms of public disclosure, including abstracts and presentations, of results of studies carried out under the Development Plan, or otherwise pertaining to the Licensed Products or GlycoMimetics Licensed Know-How, without the prior written consent of GlycoMimetics, which shall not be unreasonably withheld.

12.5 Equitable Relief. Each Party acknowledges that its breach of this Article 12 will cause irreparable harm to the other Party, which cannot be reasonably or adequately compensated in damages in an action at law. Each Party agrees that the other Party shall be entitled, in addition to any other remedies it may have under this Agreement or otherwise, to seek preliminary and permanent injunctive and other equitable relief for any breach of this Agreement, including to prevent or curtail any actual or threatened breach of the obligations relating to Confidential Information set forth in this Article 12 by the other Party.

ARTICLE 13
TERM AND TERMINATION

13.1 Term. The term of this Agreement (the "**Term**") shall commence upon the Effective Date and, unless earlier terminated pursuant to this Article 13, shall remain in effect until the expiration of the Royalty Term on a Region-by-Region basis. Upon the expiration (but not early termination) of this Agreement, on a Region-by-Region basis, the licenses granted hereunder by GlycoMimetics to Apollomics shall become non-exclusive, fully paid-up, royalty free, irrevocable and perpetual.

13.2 Termination by Apollomics. Apollomics may terminate this Agreement in its entirety (i) at any time for convenience upon ninety (90) days' prior written notice given to GlycoMimetics, or (ii) upon prior written notice given to GlycoMimetics if a Regulatory Authority in the Apollomics Territory has ordered Apollomics to stop all sales of Licensed Products in the Apollomics Territory due to a safety concern; *provided*, *however*, that Apollomics has, for a period of ninety (90) days prior to the provision of such notice by Apollomics, used Commercially Reasonable Efforts to resolve such safety concern.

13.3 Termination by GlycoMimetics for Cause.

(a) GlycoMimetics may terminate this Agreement upon written notice to Apollomics, if Apollomics discontinues material Development of (including regulatory activities) or Commercializing all the Licensed Products in the Apollomics Territory for a period of six (6) months or more (consecutively), unless Development or Commercialization of Licensed Products was prevented throughout such period by a force majeure for which Apollomics provided notice pursuant to Section 15.2 prior to or at the start of such period or a clinical hold and that persisted throughout such period despite Apollomics' reasonable efforts to remove or mitigate it. Such termination shall go into effect on the date specified in the applicable termination notice. For clarity, discontinuation of all material Development with regard to one (1) Licensed Product will

not give rise to termination of this Agreement, so long as Apollomics is conducting material Development of or Commercializing at least one (1) other Licensed Product in the Apollomics Territory.

(b) GlycoMimetics may terminate this Agreement in its entirety upon [*******] prior written notice to Apollomics, if Apollomics or its Affiliates or their respective sublicensees (directly or indirectly, individually or in association with any other Person) challenges the validity, enforceability or scope of any GlycoMimetics Licensed Patent, unless during such [*******] period the subject challenge is permanently dismissed or withdrawn and is not thereafter reinstituted or continued; *provided* that in the event Apollomics' sublicensee initiates such challenge, GlycoMimetics may not terminate this Agreement if (i) Apollomics successfully causes such sublicensee to withdraw such challenge within such [*******] period, or (ii) Apollomics successfully terminates such sublicense and provides written evidence of such termination to GlycoMimetics within such [*******] period.

13.4 Termination for Material Breach. Each Party shall have the right to terminate this Agreement in its entirety immediately upon written notice to the other Party if the other Party materially breaches its obligations under this Agreement and, after receiving written notice identifying such material breach in reasonable detail, fails to cure such material breach within [*******] from the date of such notice. Such notice shall (a) expressly reference this Section 13.4, (b) reasonably describe the alleged breach which is the basis of such termination, and (c) clearly state the non-breaching Party's intent to terminate this Agreement if the alleged breach is not cured within the applicable cure period. The Agreement shall terminate effective at the end of the notice period unless the breaching Party cures such breach during such notice period, *provided* that, such cure period shall be extended for up to an additional [*******] upon the breaching Party providing a written plan that reasonably demonstrates the need for such additional time and continuing to use Commercially Reasonable Efforts to cure such breach. If either Party disputes (i) whether such material breach has occurred, or (ii) whether the defaulting Party has cured such material breach, the Parties agree to promptly resolve the Dispute under Article 14. It is understood and acknowledged that, during the pendency of such a Dispute, all of the terms and conditions of this Agreement shall remain in effect and the Parties shall continue to perform all of their respective obligations hereunder. The Parties agree that for purposes of this Section 13.4, a breach of the representations or warranties of a Party under this Agreement shall not be a cause for termination of this Agreement unless such breach has had or would be reasonably expected to have a material adverse effect on the Development, Manufacture or Commercialization of the Licensed Product.

13.5 Termination Due to Bankruptcy. Either Party may terminate this Agreement if, at any time, the other Party files in any court or agency pursuant to any statute or regulation of any state, country or jurisdiction, a petition in bankruptcy or insolvency or for reorganization or for an arrangement or for the appointment of a receiver or trustee of that Party or of its assets, or if the other Party proposes a written agreement of composition or extension of its debts, or if the other Party is served with an involuntary petition against it, filed in any insolvency proceeding, and such petition is not dismissed within [*******] after the filing thereof, or if the other Party proposes or becomes a Party to any dissolution or liquidation, or if the other Party makes an assignment for the benefit of its creditors.

13.6 Effect of Early Termination. Upon any early termination of this Agreement by either Party, the following shall apply (in addition to any other rights and obligations under this Agreement with respect to such termination):

(a) Licenses. All licenses and other rights granted by GlycoMimetics to Apollomics under this Agreement shall terminate, including all sublicenses granted by Apollomics unless such sublicenses are assumed by GlycoMimetics pursuant to Section 2.1(d), which shall survive such termination. GlycoMimetics shall have a reversion of all rights previously licensed to Apollomics hereunder for which the relevant licenses have terminated on a fully paid-up and royalty-free basis, itself or with or through an Affiliate or Third Party, to Develop and Commercialize the Licensed Products in the Field in the Apollomics Territory at GlycoMimetics' discretion.

(b) Wind-Down. Apollomics will (i) responsibly wind-down, in accordance with accepted pharmaceutical industry norms and ethical practices, any on-going clinical studies for which it has responsibility hereunder in which patient dosing has commenced and (ii) at GlycoMimetics written election, (A) transfer to GlycoMimetics or its designee any such clinical studies to the extent permitted under Applicable Laws and accepted pharmaceutical industry norms and ethical practices, or (B) if reasonably practicable and not adverse to patient safety, complete such trials and GlycoMimetics shall reimburse Apollomics its reasonable, out-of-pocket costs associated therewith. For the purpose of clarity, except as provided for above, Apollomics may transfer to GlycoMimetics or its designee or wind-down any ongoing clinical trials prior to the date of termination in accordance with accepted pharmaceutical industry norms and ethical practices and Apollomics will be responsible for any costs associated with such transfer or wind-down.

(c) Regulatory Materials; Data. Apollomics shall (i) provide and assign to GlycoMimetics or its designee all Regulatory Materials, including Regulatory Approvals, for the Licensed Products to the extent possible under Applicable Law in the Apollomics Territory, (ii) promptly provide and assign to GlycoMimetics all Data, including pharmacovigilance data, generated by or on behalf of Apollomics, and (iii) promptly return or destroy (and certify such destruction in writing), at GlycoMimetics' election, all Confidential Information of GlycoMimetics.

(d) Transition Assistance. Upon GlycoMimetics' reasonable request, (i) Apollomics shall provide such assistance as may be reasonably necessary or useful for GlycoMimetics to continue the Development, Manufacture, and Commercialization of Licensed Products in the Apollomics Territory, to the extent Apollomics or its Affiliate is then performing or having performed such activities, including upon the reasonable request of GlycoMimetics, assigning (or using Commercially Reasonable Efforts to amend as appropriate) any agreements or arrangements Apollomics or its Affiliate have with any Third Party for the Development, Manufacture, distribution, or Commercialization of Licensed Products; and (ii) Apollomics shall provide GlycoMimetics with copies of any promotional and marketing materials generated by or on behalf of Apollomics with respect to Licensed Products prior to the effective date of termination.

(e) Inventory. In the event that this Agreement is terminated in its entirety, GlycoMimetics shall have the right, but not the obligation, to purchase any and all of the inventory of Licensed Products held by Apollomics or its Affiliates or sublicensees as of the date of termination, at a price equal to the transfer price paid by Apollomics to GlycoMimetics for such inventory.

(f) Intellectual Property. With respect to all Background Intellectual Property of Apollomics used in the Development, Manufacture, or Commercialization of Licensed Products prior to the effective date of termination (to the extent not licensed by Apollomics to GlycoMimetics pursuant to Sections 9.1(b), 9.1(c), or 9.1(d)(ii)) ("**Reversion Background IP**"), Apollomics hereby grants effective upon the effective date of termination to GlycoMimetics a worldwide, non-exclusive, irrevocable, perpetual, royalty-free license with the right to sublicense through multiple tiers to develop, make, have made, import, use, offer for sale, sell, or otherwise exploit any Licensed Product. With respect to any Patents and other intellectual property rights Controlled by Apollomics and generated by or on behalf of Apollomics pursuant to activities that were in connection with the Development, Manufacture, or Commercialization of Licensed Products prior to the effective date of termination (to the extent not licensed by Apollomics to GlycoMimetics pursuant to Sections 9.1(b), 9.1(c), or 9.1(d)(ii)) ("**Reversion Collaboration IP**"), Apollomics hereby grants effective upon the effective date of termination to GlycoMimetics a worldwide, exclusive (even as to Apollomics), irrevocable, perpetual, royalty-free license with the right to sublicense through multiple tiers to develop, make, have made, import, use, offer for sale, sell, or otherwise exploit all products that are claimed by or incorporate any such Reversion Collaboration IP (including any Licensed Product). GlycoMimetics shall have the right to develop and commercialize any or all of the products itself or with any Third Party, and shall have the right, without obligation to Apollomics, to take any such actions in connection with such activities as GlycoMimetics (or its designee), at its discretion deems appropriate. Apollomics shall take all actions and execute all instruments to effect the foregoing transfer of rights to GlycoMimetics.

(g) Specific Remedy for Certain Terminations. Notwithstanding the foregoing in this Section 13.6, if [*******], then, [*******] by providing written notice to [*******].

(i) [*******].

(ii) [*******].

13.7 Survival. Any expiration or termination of this Agreement shall not affect rights or obligations of the Parties under this Agreement that have accrued prior to the date of expiration or termination. Notwithstanding anything to the contrary, the following provisions shall survive any expiration or termination of this Agreement: Sections 2.1(d)(v) (GlycoMimetics' right to assume an Apollomics Sublicense), 2.4 (No Implied Licenses), 8.7 (Payment Method; Foreign Exchange), 8.8 (Interest on Late Payments), 8.9 (Records; Audits), 8.10 (Taxes), 9.1 (Ownership), 10.6 (No Other Representations or Warranties), 13.6 (Effects of Termination), 13.7 (Survival) and Articles 1 (Definitions), 11 (Indemnification), 12 (Confidentiality), 14 (Dispute Resolution), and 15 (Miscellaneous).

13.8 Termination Not Sole Remedy. Termination is not the sole remedy under this Agreement and, whether or not termination is effected and notwithstanding anything contained in

this Agreement to the contrary, all other remedies shall remain available except as agreed to otherwise herein.

ARTICLE 14
DISPUTE RESOLUTION

14.1 Disputes; Internal Resolution. It is the objective of the Parties to establish procedures to facilitate the resolution of any and all disputes that may arise out of or in connection with this Agreement (each a "**Dispute**") in an expedient manner by mutual cooperation. To accomplish this objective, the Parties agree that, except as otherwise provided in Section 3.3, in the event of such a Dispute, including any alleged breach under this Agreement or any issue relating to the interpretation or application of this Agreement, and the Parties are unable to resolve such Dispute within thirty (30) days after such Dispute is first identified by either Party in writing to the other, the Parties shall refer such Dispute to the Executive Officers for attempted resolution by good faith negotiations within thirty (30) days after such notice is received. If the dispute is not resolved within such thirty (30) days, either Party may commence arbitration with respect to the subject matter of the Dispute and with respect to any other claims it may have and thereafter neither Party shall have any further obligation under this Section 14.1. Any Dispute concerning the propriety of the commencement of the arbitration or the applicability of the Agreement to arbitrate shall be finally settled by the arbitral tribunal. Notwithstanding the foregoing, and without waiting for the expiration of any such thirty (30)-day periods, GlycoMimetics and Apollomics shall each have the right to apply to any court of competent jurisdiction for appropriate interim or provisional relief, as necessary to protect the rights or property of that Party.

14.2 Arbitration; Governing Law.

(a) General Arbitration. Subject to Section 14.1, all Disputes, including existence, validity, interpretation, performance, breach or termination thereof, but excluding any Development Participation Costs Dispute (pursuant to Section 4.7(b)) or Joint Clinical Trial Costs Dispute (pursuant to Section 4.3(b)(iii)), or Combination Product Dispute (pursuant to Section 1.55) or [*******] shall be submitted to and finally resolved by arbitration administered by the International Court of Arbitration of the International Chamber of Commerce (ICC) under the Rules of Arbitration of the International Chamber of Commerce (the "**Rules**"). The seat, or legal place, of arbitration shall be Hong Kong. The language of the arbitration shall be English. The arbitration shall be conducted by a tribunal of three (3) arbitrators. Each Party shall nominate one (1) arbitrator, and the two (2) party nominated arbitrators shall jointly nominate, within fifteen (15) days of the second arbitrator's appointment, the third arbitrator who shall serve as the presiding arbitrator and shall be of neutral nationality. Each arbitrator must have significant business or legal experience in the pharmaceutical business. An arbitrator shall be deemed to meet this qualification unless a Party objects within ten (10) days after the arbitrator is nominated. The Parties hereby agree to engage in discovery of information and evidence that is or might be relevant to the claims, defenses, and issues in the Dispute, including by means of discovery in the form of requests for documents (including electronically stored information). After conducting any hearing and taking any evidence deemed appropriate for consideration, the arbitrators shall render their award within six (6) months of the final arbitration hearing or the final post-hearing submissions unless the Parties jointly request an extension, or the arbitral tribunal determines in a reasoned decision that the interest of justice or the complexity of the case requires that such a limit be extended. The

arbitral tribunal shall not have the power to award damages excluded pursuant to Section 11.4 of this Agreement, and any arbitral award that purports to award such damages is expressly prohibited.

The award shall be final and binding, and the Parties undertake to carry out the award without delay. Judgment on the award so rendered may be entered in any court of competent jurisdiction. Notwithstanding any provision in the Rules, (i) the arbitral tribunal shall not be empowered to allocate, assess, or award costs or fees (whether at the conclusion of the proceedings or at any other time); each Party shall bear one-half (1/2) of all ICC administrative costs and the fees and costs of the arbitrators, and (ii) each Party shall bear its own attorneys' fees, expert or witness fees, and any other fees and costs. The existence and content of the arbitral proceedings and any rulings or awards shall be kept confidential by the Parties and members of the arbitral tribunal except (1) to the extent that disclosure may be required of a party to fulfill a legal duty, protect or pursue a legal right, or enforce or challenge an award in bona fide legal proceedings before a state court or other judicial authority, (2) with the consent of all Parties, (3) where needed for the preparation or presentation of a claim or defense in this arbitration, (4) where such information is already in the public domain other than as a result of a breach of this clause, or (5) by order of the arbitral tribunal upon application of a Party.

(b) Baseball Arbitration. Subject to Section 14.1, any Development Participation Costs Dispute (pursuant to Section 4.7(b)), Joint Clinical Trial Costs Dispute (pursuant to Section 4.3(b)(iii)), [***] or Combination Product Dispute (pursuant to Section 1.55) shall be submitted to and finally resolved by the following provisions (i.e., "baseball-style" arbitration). The Parties shall promptly designate in writing a single mutually acceptable arbitrator experienced in the licensing, development, and commercialization of pharmaceutical products, who is independent of each Party (i.e., not a current or former employee, consultant, officer, or director or current stockholder of either Party or their respective affiliates and who does not otherwise have any current or previous business relationship with either Party or their respective Affiliates). If the Parties cannot agree on an arbitrator within fifteen (15) Business Days after referral of such matter, the arbitrator shall be selected by the President of the Chamber of Commerce of New York. The arbitration shall be conducted in accordance the Rules to the extent consistent with this Section 14.2(b). Within fifteen (15) Business Days of the arbitrator's appointment, each Party shall prepare and deliver to both the arbitrator and other Party its last, best offer for the applicable unresolved terms and a memorandum in support thereof. The Parties shall also provide the arbitrator with a copy of the relevant provisions of this Agreement. Each Party may submit to the arbitrator (with a copy to the other Party) a rebuttal to the other Party's support memorandum and will at such time have the opportunity to amend its last such offer based on any new information contained in the other Party's support memorandum. Within forty-five (45) Business Days after the arbitrator's appointment, the arbitrator will select from the two (2) proposals provided by the Parties the proposal such arbitrator believes is most consistent with the intent of the Parties when this Agreement was entered into provided the arbitrator may not alter the terms of this Agreement. The decision of the arbitrator shall be final and binding on the Parties. The foregoing "baseball-style" arbitration shall be the exclusive remedy of either Party if the Parties cannot agree on a Development Participation Costs Dispute, Joint Clinical Trial Costs Dispute, [***] or Combination Product Dispute.

(c) Governing Law. This Agreement and all Disputes shall be governed by and construed in accordance with the laws of the State of New York, USA, without giving effect to any choice of law rules or principles.

ARTICLE 15
MISCELLANEOUS

15.1 Entire Agreement; Amendment. This Agreement, including the Exhibits hereto, sets forth the complete, final and exclusive agreement and all the covenants, promises, agreements, warranties, representations, conditions and understandings between the Parties hereto with respect to the subject matter hereof and supersedes, as of the Effective Date, all prior and contemporaneous agreements and understandings between the Parties with respect to the subject matter hereof, including the Confidentiality Agreement. The foregoing shall not be interpreted as a waiver of any remedies available to either Party as a result of any breach, prior to the Effective Date, by the other Party of its obligations under the Confidentiality Agreement. There are no covenants, promises, agreements, warranties, representations, conditions or understandings, either oral or written, between the Parties other than as are set forth in this Agreement. No subsequent alteration, amendment, change or addition to this Agreement shall be binding upon the Parties unless reduced to writing and signed by an authorized officer of each Party.

15.2 Force Majeure. Both Parties shall be excused from the performance of their obligations under this Agreement to the extent that such performance is prevented by force majeure and the nonperforming Party promptly provides notice of the prevention to the other Party. Such excuse shall be continued only for so long as (a) the condition constituting force majeure continues and (b) the nonperforming Party takes all reasonable efforts to remove the condition. For purposes of this Agreement, force majeure shall include conditions beyond the reasonable control of the applicable Party, which may include an act of God, war, civil commotion, terrorist act, labor strike or lock-out, epidemic, failure or default of public utilities or common carriers, destruction of production facilities or materials by fire, earthquake, storm or like catastrophe, action or inaction of any Governmental Authority, and failure of plant or machinery. Notwithstanding the foregoing, a Party shall not be excused from making payments owed hereunder because of a force majeure affecting such Party. If a force majeure persists for more than ninety (90) days, then the Parties will discuss in good faith the modification of the Parties' obligations under this Agreement in order to mitigate the delays caused by such force majeure.

15.3 Notices. Any notice required or permitted to be given under this Agreement shall be in writing, shall specifically refer to this Agreement, and shall be addressed to the appropriate Party at the address specified below or such other address as may be specified by such Party in writing in accordance with this Section 15.3, and shall be deemed to have been given for all purposes (a) when received, if hand-delivered or a reputable courier service, (b) five (5) Business Days after mailing, if mailed by first class certified or registered airmail, postage prepaid, return receipt requested, (c) or upon receipt if sent by electronic mail, *provided* that such notice is also sent by a reputable courier service or first class certified or registered airmail, postage prepaid, return receipt requested.

If to GlycoMimetics: GlycoMimetics, Inc.
9708 Medical Center Drive

Rockville, MD 20850
Attn: Rachel King, Chief Executive Officer

with copies to (which shall not constitute notice):

Cooley LLP
11951 Freedom Drive #1500
Reston, VA 20190
Attn: Kenneth Krisko

If to Apollomics:

Apollomics (Hong Kong) Limited
C/o Apollomics, Inc.
989 East Hillsdale Blvd., Suite 220
Foster City, CA 94404
Attn: [***]

with copies to (which shall not constitute notice):

Maky Zanganeh & Associates
2882 Sand Hill Rd, Suite 106
Menlo Park, CA 94025
Attn: [***]

15.4 No Strict Construction; Headings. This Agreement has been prepared jointly by the Parties and shall not be strictly construed against either Party. Ambiguities, if any, in this Agreement shall not be construed against any Party, irrespective of which Party may be deemed to have authored the ambiguous provision. The headings of each Article and Section in this Agreement have been inserted for convenience of reference only and are not intended to limit or expand on the meaning of the language contained in the particular Article or Section. Except where the context otherwise requires, the use of any gender shall be applicable to all genders, and the word "or" is used in the inclusive sense (and/or). The term "including" as used herein means including, without limiting the generality of any description preceding such term.

15.5 Assignment. Neither Party may assign or transfer this Agreement or any rights or obligations hereunder without the prior written consent of the other Party, except that either Party may make such an assignment without the other Party's consent to an Affiliate of such Party. Any permitted assignee shall assume all obligations of its assignor under this Agreement. Any assignment or attempted assignment by either Party in violation of the terms of this Section 15.5 shall be null, void and of no legal effect.

15.6 Performance by Affiliates. Each Party may discharge any obligations and exercise any right hereunder through any of its Affiliates. Each Party hereby guarantees the performance by its Affiliates of such Party's obligations under this Agreement, and shall cause its Affiliates to comply with the provisions of this Agreement in connection with such performance. Any breach by a Party's Affiliate of any of such Party's obligations under this Agreement shall be deemed a breach by such Party, and the other Party may proceed directly against such Party without any obligation to first proceed against such Party's Affiliate.

15.7 Further Actions. Each Party agrees to execute, acknowledge and deliver such further instruments, and to do all such other acts, as may be necessary or appropriate in order to carry out the purposes and intent of this Agreement.

15.8 Severability. If any one or more of the provisions of this Agreement is held to be invalid or unenforceable by any court of competent jurisdiction from which no appeal can be or is taken, the provision shall be considered severed from this Agreement and shall not serve to invalidate any remaining provisions hereof. The Parties shall make a good faith effort to replace any invalid or unenforceable provision with a valid and enforceable one such that the objectives contemplated by the Parties when entering this Agreement may be realized.

15.9 No Waiver. Any delay in enforcing a Party's rights under this Agreement or any waiver as to a particular default or other matter shall not constitute a waiver of such Party's rights to the future enforcement of its rights under this Agreement, except with respect to an express written and signed waiver relating to a particular matter for a particular period of time.

15.10 Independent Contractors. Each Party shall act solely as an independent contractor, and nothing in this Agreement shall be construed to give either Party the power or authority to act for, bind, or commit the other Party in any way. Nothing herein shall be construed to create the relationship of partners, principal and agent, or joint-venture partners between the Parties.

15.11 English Language. This Agreement was prepared in the English language, which language shall govern the interpretation of, and any dispute regarding, the terms of this Agreement.

15.12 Counterparts. This Agreement may be executed in one (1) or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

15.13 Rights in Bankruptcy. All rights and licenses granted under or pursuant to this Agreement by one Party to the other Party are, and otherwise will be deemed to be, for purposes of Section 365(n) of the U.S. Bankruptcy Code or comparable provision of applicable bankruptcy or insolvency laws, licenses of right to "intellectual property" as defined under Section 101 of the U.S. Bankruptcy Code or comparable provision of applicable bankruptcy or insolvency laws. Each Party will retain and may fully exercise all of its rights and elections under the U.S. Bankruptcy Code or comparable provision of applicable bankruptcy or insolvency laws. The Parties further agree that, in the event of the commencement of a bankruptcy proceeding by or against a Party to this Agreement under the U.S. Bankruptcy Code or comparable provision of applicable bankruptcy or insolvency laws, the other Party will be entitled to a complete duplicate of (or complete access to, as appropriate) any such intellectual property and all embodiments of such intellectual property, and same, if not already in its possession, will be promptly delivered to it (i) upon any such commencement of a bankruptcy or insolvency proceeding upon its written request therefor, unless the bankrupt Party elects to continue to perform all of its obligations under this Agreement, or (ii) if not delivered under (i) above, following the rejection of this Agreement by or on behalf of the bankrupt Party upon written request therefor by the other Party.

{Signature Page Follows}

IN WITNESS WHEREOF, the Parties have executed this Collaboration and License Agreement in duplicate originals by their duly authorized officers as of the Effective Date.

GLYCOMIMETICS, INC.	**APOLLOMICS (HONG KONG) LIMITED**
By: /s/ Rachel King	By: /s/ Sannjeev Redkar
Name: Rachel King	Name: Sanjeev Redkar
Title: Chief Executive Officer	Title: Director

LIST OF EXHIBITS

Exhibit A:	**GlycoMimetics Licensed Patents**
Exhibit B:	**Chemical Structure of Licensed Compounds**
Exhibit C:	**Technology Transfer Plan**
Exhibit D:	**Initial Development Plan**
Exhibit E:	**Supply Agreement Terms**

GLYCOMIMETICS, INC.

INDUCEMENT PLAN

1. GENERAL.

(a) Eligible Stock Award Recipients. The only persons eligible to receive grants of Stock Awards under this Plan are individuals who satisfy the standards for inducement grants under Nasdaq Marketplace Rule 5635(c)(4) and the related guidance under Nasdaq IM 5635-1 – that is, generally, a person not previously an employee or director of the Company, or following a bona fide period of non-employment, as an inducement material to the individual's entering into employment with the Company. Such eligible individuals are referred to in this Plan as "***Eligible Employees***". These grants will be approved by either the Compensation Committee or a majority of the Company's "***Independent Directors***" (as such term is defined by Nasdaq for purposes of Nasdaq Marketplace Rule 5635(c)(4)). We refer to Nasdaq Marketplace Rule 5635(c)(4) and the related guidance under Nasdaq IM 5635-1 as the "***Inducement Award Rules***".

(b) Available Stock Awards. The Plan provides for the grant of the following Stock Awards: (i) Nonstatutory Stock Options, (ii) Stock Appreciation Rights (iii) Restricted Stock Awards, (iv) Restricted Stock Unit Awards, and (v) Other Stock Awards. As provided in Section 2(a), Stock Awards may be granted only by either the Compensation Committee or a majority of the Independent Directors as required by the Inducement Award Rules. Incentive Stock Options may not be granted under this Plan.

(c) General Purpose. The Company, by means of the Plan, seeks to secure and retain the services of one or more Eligible Employees, to provide incentives for such persons to exert maximum efforts for the success of the Company and any Affiliate, and to provide a means by which such persons may be given an opportunity to benefit from increases in value of the Common Stock through the granting of Stock Awards.

2. ADMINISTRATION.

(a) Administration. The Compensation Committee shall administer the Plan. Stock Awards may only be granted by either: (i) the Compensation Committee as composed solely of Independent Directors, (ii) another Committee composed solely of Independent Directors and constituting a majority of the Company's Independent Directors, or (iii) at the Board level by a majority of the Company's Independent Directors, with non-Independent Directors abstaining. Subject to the foregoing Stock Award approval requirements and the other constraints of the Inducement Award Rules, the Compensation Committee may delegate some of its powers of administration of the Plan to another Committee, as provided in Section 2(c) (and references in this Plan to the Compensation Committee will thereafter be to the applicable Committee).

(b) Powers of Compensation Committee. The Compensation Committee will have the power, subject to, and within the limitations of, the express provisions of the Plan and the Inducement Award Rules, including:

(i) To determine: (A) which Eligible Employees will be granted Stock Awards; (B) when and how each Stock Award will be granted; (C) what type of Stock Award will be granted; (D) the provisions of each Stock Award (which need not be identical), including when a person will be permitted to exercise or otherwise receive cash or Common Stock under the Stock Award; (E) the number of shares of Common Stock subject to, or the cash value of, a Stock Award; and (F) the Fair Market Value applicable to a Stock Award; provided, however, that Stock Awards may only be granted by either (1) the Compensation Committee as composed solely of Independent Directors, (2) another Committee composed solely of Independent Directors constituting a majority of the Company's Independent Directors, or (3) at the Board level by a majority of the Company's Independent Directors, with non-Independent Directors abstaining.

(ii) To construe and interpret the Plan and Stock Awards granted under it, and to establish, amend and revoke rules and regulations for administration of the Plan and Stock Awards. The Compensation Committee, in the exercise of these powers, may correct any defect, omission or inconsistency in the Plan or in any Stock Award Agreement, in a manner and to the extent it will deem necessary or expedient to make the Plan or Stock Award fully effective.

(iii) To settle all controversies regarding the Plan and Stock Awards granted under it.

(iv) To accelerate, in whole or in part, the time at which a Stock Award may be exercised or vest (or at which cash or shares of Common Stock may be issued).

(v) To suspend or terminate the Plan at any time. Except as otherwise provided in the Plan or a Stock Award Agreement, suspension or termination of the Plan will not materially impair a Participant's rights under his or her then-outstanding Stock Award without his or her written consent except as provided in Section 2(b)(viii) below.

(vi) To amend the Plan in any respect the Compensation Committee deems necessary or advisable consistent with the Inducement Award Rules, including, without limitation, by adopting amendments relating to certain nonqualified deferred compensation under Section 409A of the Code and/or to make the Plan or Stock Awards granted under the Plan exempt from or compliant with the requirements for nonqualified deferred compensation under Section 409A of the Code, subject to the limitations, if any, of applicable law, and subject to any stockholder approval required under the Inducement Award Rules in connection with such amendment of the Plan. Except as otherwise provided in the Plan or a Stock Award Agreement, no amendment of the Plan will materially impair a Participant's rights under an outstanding Stock Award without the Participant's written consent.

(vii) To approve forms of Stock Award Agreements for use under the Plan.

(viii) To amend the terms of any one or more Stock Awards, including, but not limited to, amendments to provide terms more favorable to the Participant than previously provided in the Stock Award Agreement, subject to any specified limits in the Plan that are not subject to Compensation Committee discretion, and subject to any stockholder approval required under the Inducement Award Rules in connection with such amendment of a Stock Award;

provided however, that a Participant's rights under any Stock Award will not be impaired by any such amendment unless (A) the Company requests the consent of the affected Participant, and (B) such Participant consents in writing. Notwithstanding the foregoing, (1) a Participant's rights will not be deemed to have been impaired by any such amendment if the Compensation Committee, in its sole discretion, determines that the amendment, taken as a whole, does not materially impair the Participant's rights, and (2) subject to the limitations of applicable law, if any, the Compensation Committee may amend the terms of any one or more Stock Awards without the affected Participant's consent (A) to clarify the manner of exemption from, or to bring the Stock Award into compliance with, Section 409A of the Code or (B) to comply with other applicable laws or listing requirements, including the Inducement Award Rules.

(ix) Generally, to exercise such powers and to perform such acts as the Compensation Committee deems necessary or expedient to promote the best interests of the Company and that are not in conflict with the provisions of the Plan or Stock Awards.

(x) To adopt such procedures and sub-plans as are necessary or appropriate to permit participation in the Plan by Eligible Employees who are foreign nationals or employed outside the United States (provided that Compensation Committee approval will not be necessary for immaterial modifications to the Plan or any Stock Award Agreement that are required for compliance with the laws of the relevant foreign jurisdiction).

(c) Delegation to Committee.

(i) General. Subject to the Stock Award approval requirements set forth in Section 2(a), the Compensation Committee may delegate some or all of the administration of the Plan to a Committee but only to the extent that such delegation is consistent with the Inducement Award Rules. If administration is delegated to a Committee, the Committee will have, in connection with the administration of the Plan, the powers theretofore possessed by the Compensation Committee that have been delegated to the Committee, including the power to delegate to a subcommittee any of the administrative powers the Committee is authorized to exercise, subject, however, to such resolutions, not inconsistent with the provisions of the Plan, as may be adopted from time to time by the Compensation Committee. The Compensation Committee may retain the authority to concurrently administer the Plan with the Committee and may, at any time, revest in the Compensation Committee some or all of the powers previously delegated.

(d) Effect of Compensation Committee's Decision. All determinations, interpretations and constructions made by the Compensation Committee in good faith will not be subject to review by any person and will be final, binding and conclusive on all persons.

(e) Cancellation and Re-Grant of Stock Awards. Neither the Compensation Committee nor any Committee will have the authority to: (i) reduce the exercise price or strike price of any outstanding Options or SARs under the Plan, or (ii) cancel any outstanding Options or SARs that have an exercise price or strike price greater than the current Fair Market Value in exchange for cash or other Stock Awards under the Plan, unless the stockholders of the Company have approved such an action within twelve months prior to such an event.

3. SHARES SUBJECT TO THE PLAN.

(a) Share Reserve. Subject to Section 9(a) relating to Capitalization Adjustments, the aggregate number of shares of Common Stock that may be issued pursuant to Stock Awards from and after the Effective Date will not exceed 500,000 shares (the "***Share Reserve***"). For clarity, the Share Reserve is a limitation on the number of shares of Common Stock that may be issued under the Plan. Accordingly, this Section 3(a) does not limit the granting of Stock Awards except as provided in Section 7(a). Shares may be issued in connection with a merger or acquisition as permitted by NASDAQ Listing Rule 5635(c) or, if applicable, NYSE Listed Company Manual Section 303A.08, AMEX Company Guide Section 711 or other applicable rule, and such issuance will not reduce the number of shares available for issuance under the Plan.

(b) Reversion of Shares to the Share Reserve. If a Stock Award or any portion thereof (i) expires or otherwise terminates without all of the shares covered by such Stock Award having been issued or (ii) is settled in cash (*i.e.*, the Participant receives cash rather than stock), such expiration, termination or settlement will not reduce (or otherwise offset) the number of shares of Common Stock that may be available for issuance under the Plan. If any shares of Common Stock issued pursuant to a Stock Award are forfeited back to or repurchased by the Company because of the failure to meet a contingency or condition required to vest such shares in the Participant, then the shares that are forfeited or repurchased will revert to and again become available for issuance under the Plan. Any shares reacquired by the Company in satisfaction of tax withholding obligations on a Stock Award or as consideration for the exercise or purchase price of a Stock Award will again become available for issuance under the Plan.

(c) Source of Shares. The stock issuable under the Plan will be shares of authorized but unissued or reacquired Common Stock, including shares repurchased by the Company on the open market or otherwise.

4. ELIGIBILITY.

Stock Awards may be granted to Eligible Employees; *provided*, *however*, that Stock Awards may not be granted to Eligible Employees who are providing Continuous Service only to any "parent" of the Company, as such term is defined in Rule 405 of the Securities Act, unless (i) the stock underlying such Stock Awards is treated as "service recipient stock" under Section 409A of the Code (for example, because the Stock Awards are granted pursuant to a corporate transaction such as a spin off transaction), (ii) the Company, in consultation with its legal counsel, has determined that such Stock Awards are otherwise exempt from Section 409A of the Code, or (iii) the Company, in consultation with its legal counsel, has determined that such Stock Awards comply with the distribution requirements of Section 409A of the Code.

5. PROVISIONS RELATING TO OPTIONS AND STOCK APPRECIATION RIGHTS.

Each Option or SAR will be in such form and will contain such terms and conditions as the Compensation Committee deems appropriate. The provisions of separate Options or SARs need not be identical; *provided*, *however*, that each Stock Award Agreement will conform to

(through incorporation of provisions hereof by reference in the applicable Stock Award Agreement or otherwise) the substance of each of the following provisions:

(a) Term. No Option or SAR will be exercisable after the expiration of ten years from the date of its grant or such shorter period specified in the Stock Award Agreement.

(b) Exercise Price. The exercise or strike price of each Option or SAR will be not less than 100% of the Fair Market Value of the Common Stock subject to the Option or SAR on the date the Stock Award is granted. Each SAR will be denominated in shares of Common Stock equivalents.

(c) Purchase Price for Options. The purchase price of Common Stock acquired pursuant to the exercise of an Option may be paid, to the extent permitted by applicable law and as determined by the Compensation Committee in its sole discretion, by any combination of the methods of payment set forth below. The Compensation Committee will have the authority to grant Options that do not permit all of the following methods of payment (or that otherwise restrict the ability to use certain methods) and to grant Options that require the consent of the Company to use a particular method of payment. The permitted methods of payment are as follows:

(i) by cash, check, bank draft or money order payable to the Company;

(ii) pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board that, prior to the issuance of the stock subject to the Option, results in either the receipt of cash (or check) by the Company or the receipt of irrevocable instructions to pay the aggregate exercise price to the Company from the sales proceeds;

(iii) by delivery to the Company (either by actual delivery or attestation) of shares of Common Stock;

(iv) by a "net exercise" arrangement pursuant to which the Company will reduce the number of shares of Common Stock issuable upon exercise by the largest whole number of shares with a Fair Market Value that does not exceed the aggregate exercise price; *provided*, *however*, that the Company will accept a cash or other payment from the Participant to the extent of any remaining balance of the aggregate exercise price not satisfied by such reduction in the number of whole shares to be issued. Shares of Common Stock will no longer be subject to an Option and will not be exercisable thereafter to the extent that (A) shares issuable upon exercise are reduced to pay the exercise price pursuant to the "net exercise," (B) shares are delivered to the Participant as a result of such exercise, and (C) shares are withheld to satisfy tax withholding obligations; or

(v) in any other form of legal consideration that may be acceptable to the Compensation Committee and specified in the applicable Stock Award Agreement.

(d) Exercise and Payment of a SAR. To exercise any outstanding SAR, the Participant must provide written notice of exercise to the Company in compliance with the provisions of the Stock Appreciation Right Agreement evidencing such SAR. The appreciation

distribution payable on the exercise of a SAR will be not greater than an amount equal to the excess of (A) the aggregate Fair Market Value (on the date of the exercise of the SAR) of a number of shares of Common Stock equal to the number of Common Stock equivalents in which the Participant is vested under such SAR, and with respect to which the Participant is exercising the SAR on such date, over (B) the aggregate strike price of the number of Common Stock equivalents with respect to which the Participant is exercising the SAR on such date. The appreciation distribution may be paid in Common Stock, in cash, in any combination of the two or in any other form of consideration, as determined by the Compensation Committee and contained in the Stock Award Agreement evidencing such SAR.

(e) Transferability of Options and SARs. The Compensation Committee may, in its sole discretion, impose such limitations on the transferability of Options and SARs as the Compensation Committee will determine. In the absence of such a determination by the Compensation Committee to the contrary, the following restrictions on the transferability of Options and SARs will apply:

(i) Restrictions on Transfer. An Option or SAR will not be transferable except by will or by the laws of descent and distribution (or pursuant to subsections (ii) and (iii) below), and will be exercisable during the lifetime of the Participant only by the Participant. The Compensation Committee may permit transfer of the Option or SAR in a manner that is not prohibited by applicable tax and securities laws. Except as explicitly provided herein, neither an Option nor a SAR may be transferred for consideration.

(ii) Domestic Relations Orders. Subject to the approval of the Compensation Committee or a duly authorized Officer, an Option or SAR may be transferred pursuant to the terms of a domestic relations order, official marital settlement agreement or other divorce or separation instrument.

(iii) Beneficiary Designation. Subject to the approval of the Compensation Committee or a duly authorized Officer, a Participant may, by delivering written notice to the Company, in a form approved by the Company (or the designated broker), designate a third party who, on the death of the Participant, will thereafter be entitled to exercise the Option or SAR and receive the Common Stock or other consideration resulting from such exercise. In the absence of such a designation, the executor or administrator of the Participant's estate will be entitled to exercise the Option or SAR and receive the Common Stock or other consideration resulting from such exercise. However, the Company may prohibit designation of a beneficiary at any time, including due to any conclusion by the Company that such designation would be inconsistent with the provisions of applicable laws.

(f) Vesting Generally. The total number of shares of Common Stock subject to an Option or SAR may vest and become exercisable in periodic installments that may or may not be equal. The Option or SAR may be subject to such other terms and conditions on the time or times when it may or may not be exercised (which may be based on the satisfaction of performance goals or other criteria) as the Compensation Committee may deem appropriate. The vesting provisions of individual Options or SARs may vary. The provisions of this Section 5(f) are subject to any Option or SAR provisions governing the minimum number of shares of Common Stock as to which an Option or SAR may be exercised.

(g) Termination of Continuous Service. Except as otherwise provided in the applicable Stock Award Agreement or other agreement between the Participant and the Company, if a Participant's Continuous Service terminates (other than for Cause and other than upon the Participant's death or Disability), the Participant may exercise his or her Option or SAR (to the extent that the Participant was entitled to exercise such Stock Award as of the date of termination of Continuous Service) within the period of time ending on the earlier of (i) the date three months following the termination of the Participant's Continuous Service (or such longer or shorter period specified in the applicable Stock Award Agreement), and (ii) the expiration of the term of the Option or SAR as set forth in the Stock Award Agreement. If, after termination of Continuous Service, the Participant does not exercise his or her Option or SAR (as applicable) within the applicable time frame, the Option or SAR will terminate.

(h) Extension of Termination Date. If the exercise of an Option or SAR following the termination of the Participant's Continuous Service (other than for Cause and other than upon the Participant's death or Disability) would be prohibited at any time solely because the issuance of shares of Common Stock would violate the registration requirements under the Securities Act, then the Option or SAR will terminate on the earlier of (i) the expiration of a total period of time (that need not be consecutive) equal to the applicable post termination exercise period after the termination of the Participant's Continuous Service during which the exercise of the Option or SAR would not be in violation of such registration requirements, and (ii) the expiration of the term of the Option or SAR as set forth in the applicable Stock Award Agreement. In addition, unless otherwise provided in a Participant's Stock Award Agreement, if the sale of any Common Stock received on exercise of an Option or SAR following the termination of the Participant's Continuous Service (other than for Cause) would violate the Company's insider trading policy, then the Option or SAR will terminate on the earlier of (i) the expiration of a period of months (that need not be consecutive) equal to the applicable post-termination exercise period after the termination of the Participant's Continuous Service during which the sale of the Common Stock received upon exercise of the Option or SAR would not be in violation of the Company's insider trading policy, or (ii) the expiration of the term of the Option or SAR as set forth in the applicable Stock Award Agreement.

(i) Disability of Participant. Except as otherwise provided in the applicable Stock Award Agreement or other agreement between the Participant and the Company, if a Participant's Continuous Service terminates as a result of the Participant's Disability, the Participant may exercise his or her Option or SAR (to the extent that the Participant was entitled to exercise such Option or SAR as of the date of termination of Continuous Service), but only within such period of time ending on the earlier of (i) the date 12 months following such termination of Continuous Service (or such longer or shorter period specified in the Stock Award Agreement), and (ii) the expiration of the term of the Option or SAR as set forth in the Stock Award Agreement. If, after termination of Continuous Service, the Participant does not exercise his or her Option or SAR within the applicable time frame, the Option or SAR (as applicable) will terminate.

(j) Death of Participant. Except as otherwise provided in the applicable Stock Award Agreement or other agreement between the Participant and the Company, if (i) a Participant's Continuous Service terminates as a result of the Participant's death, or (ii) the Participant dies within the period (if any) specified in the Stock Award Agreement for

exercisability after the termination of the Participant's Continuous Service for a reason other than death, then the Option or SAR may be exercised (to the extent the Participant was entitled to exercise such Option or SAR as of the date of death) by the Participant's estate, by a person who acquired the right to exercise the Option or SAR by bequest or inheritance or by a person designated to exercise the Option or SAR upon the Participant's death, but only within the period ending on the earlier of (i) the date 18 months following the date of death (or such longer or shorter period specified in the Stock Award Agreement), and (ii) the expiration of the term of such Option or SAR as set forth in the Stock Award Agreement. If, after the Participant's death, the Option or SAR is not exercised within the applicable time frame, the Option or SAR will terminate.

(k) Termination for Cause. Except as explicitly provided otherwise in a Participant's Stock Award Agreement or other individual written agreement between the Company or any Affiliate and the Participant, if a Participant's Continuous Service is terminated for Cause, the Option or SAR will terminate immediately upon such Participant's termination of Continuous Service, and the Participant will be prohibited from exercising his or her Option or SAR from and after the date of such termination of Continuous Service.

(l) Non-Exempt Employees. If an Option or SAR is granted to an Eligible Employee who is a non-exempt employee for purposes of the Fair Labor Standards Act of 1938, as amended, the Option or SAR will not be first exercisable for any shares of Common Stock until at least six (6) months following the date of grant of the Option or SAR (although the Stock Award may vest prior to such date). Consistent with the provisions of the Worker Economic Opportunity Act, (i) if such non-exempt Employee dies or suffers a Disability, (ii) upon a Corporate Transaction in which such Option or SAR is not assumed, continued, or substituted, (iii) upon a Change in Control, or (iv) upon the Participant's retirement (as such term may be defined in the Participant's Stock Award Agreement in another agreement between the Participant and the Company, or, if no such definition, in accordance with the Company's then current employment policies and guidelines), the vested portion of any Options and SARs may be exercised earlier than six months following the date of grant. The foregoing provision is intended to operate so that any income derived by a non-exempt employee in connection with the exercise or vesting of an Option or SAR will be exempt from his or her regular rate of pay. To the extent permitted and/or required for compliance with the Worker Economic Opportunity Act to ensure that any income derived by a non-exempt employee in connection with the exercise, vesting or issuance of any shares under any other Stock Award will be exempt from the employee's regular rate of pay, the provisions of this Section 5(l) will apply to all Stock Awards and are hereby incorporated by reference into such Stock Award Agreements.

6. PROVISIONS OF STOCK AWARDS OTHER THAN OPTIONS AND SARS.

(a) Restricted Stock Awards. Each Restricted Stock Award Agreement will be in such form and will contain such terms and conditions as the Compensation Committee will deem appropriate. To the extent consistent with the Company's bylaws, at the Compensation Committee's election, shares of Common Stock may be (x) held in book entry form subject to the Company's instructions until any restrictions relating to the Restricted Stock Award lapse; or (y) evidenced by a certificate, which certificate will be held in such form and manner as determined by the Compensation Committee. The terms and conditions of Restricted Stock

Award Agreements may change from time to time, and the terms and conditions of separate Restricted Stock Award Agreements need not be identical. Each Restricted Stock Award Agreement will conform to (through incorporation of the provisions hereof by reference in the agreement or otherwise) the substance of each of the following provisions:

(i) Consideration. A Restricted Stock Award may be awarded in consideration for (A) cash, check, bank draft or money order payable to the Company, (B) past services to the Company or an Affiliate, or (C) any other form of legal consideration (including future services) that may be acceptable to the Compensation Committee, in its sole discretion, and permissible under applicable law.

(ii) Vesting. Shares of Common Stock awarded under the Restricted Stock Award Agreement may be subject to forfeiture to the Company in accordance with a vesting schedule to be determined by the Compensation Committee.

(iii) Termination of Participant's Continuous Service. If a Participant's Continuous Service terminates, the Company may receive through a forfeiture condition or a repurchase right any or all of the shares of Common Stock held by the Participant as of the date of termination of Continuous Service under the terms of the Restricted Stock Award Agreement.

(iv) Transferability. Rights to acquire shares of Common Stock under the Restricted Stock Award Agreement will be transferable by the Participant only upon such terms and conditions as are set forth in the Restricted Stock Award Agreement, as the Compensation Committee will determine in its sole discretion, so long as Common Stock awarded under the Restricted Stock Award Agreement remains subject to the terms of the Restricted Stock Award Agreement.

(v) Dividends. A Restricted Stock Award Agreement may provide that any dividends paid on Restricted Stock will be subject to the same vesting and forfeiture restrictions as apply to the shares subject to the Restricted Stock Award to which they relate.

(b) Restricted Stock Unit Awards. Each Restricted Stock Unit Award Agreement will be in such form and will contain such terms and conditions as the Compensation Committee will deem appropriate. The terms and conditions of Restricted Stock Unit Award Agreements may change from time to time, and the terms and conditions of separate Restricted Stock Unit Award Agreements need not be identical. Each Restricted Stock Unit Award Agreement will conform to (through incorporation of the provisions hereof by reference in the Agreement or otherwise) the substance of each of the following provisions:

(i) Consideration. At the time of grant of a Restricted Stock Unit Award, the Compensation Committee will determine the consideration, if any, to be paid by the Participant upon delivery of each share of Common Stock subject to the Restricted Stock Unit Award. The consideration to be paid (if any) by the Participant for each share of Common Stock subject to a Restricted Stock Unit Award may be paid in any form of legal consideration that may be acceptable to the Compensation Committee, in its sole discretion, and permissible under applicable law.

(ii) Vesting. At the time of the grant of a Restricted Stock Unit Award, the Compensation Committee may impose such restrictions on or conditions to the vesting of the Restricted Stock Unit Award as it, in its sole discretion, deems appropriate.

(iii) Payment. A Restricted Stock Unit Award may be settled by the delivery of shares of Common Stock, their cash equivalent, any combination thereof or in any other form of consideration, as determined by the Compensation Committee and contained in the Restricted Stock Unit Award Agreement.

(iv) Additional Restrictions. At the time of the grant of a Restricted Stock Unit Award, the Compensation Committee, as it deems appropriate, may impose such restrictions or conditions that delay the delivery of the shares of Common Stock (or their cash equivalent) subject to a Restricted Stock Unit Award to a time after the vesting of such Restricted Stock Unit Award.

(v) Dividend Equivalents. Dividend equivalents may be credited in respect of shares of Common Stock covered by a Restricted Stock Unit Award, as determined by the Compensation Committee and contained in the Restricted Stock Unit Award Agreement. At the sole discretion of the Compensation Committee, such dividend equivalents may be converted into additional shares of Common Stock covered by the Restricted Stock Unit Award in such manner as determined by the Compensation Committee. Any additional shares covered by the Restricted Stock Unit Award credited by reason of such dividend equivalents will be subject to all of the same terms and conditions of the underlying Restricted Stock Unit Award Agreement to which they relate.

(vi) Termination of Participant's Continuous Service. Except as otherwise provided in the applicable Restricted Stock Unit Award Agreement, such portion of the Restricted Stock Unit Award that has not vested will be forfeited upon the Participant's termination of Continuous Service.

(c) Other Stock Awards. Other forms of Stock Awards valued in whole or in part by reference to, or otherwise based on, Common Stock, including the appreciation in value thereof (e.g., options or stock rights with an exercise price or strike price less than 100% of the Fair Market Value of the Common Stock at the time of grant) may be granted either alone or in addition to Stock Awards provided for under Section 5 and the preceding provisions of this Section 6. Subject to the provisions of the Plan, the Compensation Committee will have sole and complete authority to determine the persons to whom and the time or times at which such Other Stock Awards will be granted, the number of shares of Common Stock (or the cash equivalent thereof) to be granted pursuant to such Other Stock Awards and all other terms and conditions of such Other Stock Awards.

7. COVENANTS OF THE COMPANY.

(a) Availability of Shares. The Company will keep available at all times the number of shares of Common Stock reasonably required to satisfy then-outstanding Stock Awards.

(b) Securities Law Compliance. The Company will seek to obtain from each regulatory commission or agency having jurisdiction over the Plan such authority as may be required to grant Stock Awards and to issue and sell shares of Common Stock upon exercise of the Stock Awards; *provided, however*, that this undertaking will not require the Company to register under the Securities Act the Plan, any Stock Award or any Common Stock issued or issuable pursuant to any such Stock Award. If, after reasonable efforts and at a reasonable cost, the Company is unable to obtain from any such regulatory commission or agency the authority that counsel for the Company deems necessary for the lawful issuance and sale of Common Stock under the Plan, the Company will be relieved from any liability for failure to issue and sell Common Stock upon exercise of such Stock Awards unless and until such authority is obtained. A Participant will not be eligible for the grant of a Stock Award or the subsequent issuance of cash or Common Stock pursuant to the Stock Award if such grant or issuance would be in violation of any applicable securities law.

(c) No Obligation to Notify or Minimize Taxes. The Company will have no duty or obligation to any Participant to advise such holder as to the time or manner of exercising such Stock Award. Furthermore, the Company will have no duty or obligation to warn or otherwise advise such holder of a pending termination or expiration of a Stock Award or a possible period in which the Stock Award may not be exercised. The Company has no duty or obligation to minimize the tax consequences of a Stock Award to the holder of such Stock Award.

8. MISCELLANEOUS.

(a) Use of Proceeds from Sales of Common Stock. Proceeds from the sale of shares of Common Stock pursuant to Stock Awards will constitute general funds of the Company.

(b) Corporate Action Constituting Grant of Stock **Awards.** Corporate action constituting a grant by the Company of a Stock Award to any Participant will be deemed completed as of the date of such corporate action, unless otherwise determined by the Compensation Committee, regardless of when the instrument, certificate, or letter evidencing the Stock Award is communicated to, or actually received or accepted by, the Participant. In the event that the corporate records (e.g., Compensation Committee consents, resolutions or minutes) documenting the corporate action constituting the grant contain terms (e.g., exercise price, vesting schedule or number of shares) that are inconsistent with those in the Stock Award Agreement or related grant documents as a result of a clerical error in the papering of the Stock Award Agreement or related grant documents, the corporate records will control and the Participant will have no legally binding right to the incorrect term in the Stock Award Agreement or related grant documents.

(c) Stockholder Rights. No Participant will be deemed to be the holder of, or to have any of the rights of a holder with respect to, any shares of Common Stock subject to a Stock Award unless and until (i) such Participant has satisfied all requirements for exercise of, or the issuance of shares under, the Stock Award pursuant to its terms, and (ii) the issuance of the Common Stock subject to such Stock Award has been entered into the books and records of the Company.

(d) No Employment or Other Service Rights. Nothing in the Plan, any Stock Award Agreement or any other instrument executed thereunder or in connection with any Stock Award granted pursuant thereto will confer upon any Participant any right to continue to serve the Company or an Affiliate in the capacity in effect at the time the Stock Award was granted or will affect the right of the Company or an Affiliate to terminate (i) the employment of an Employee with or without notice and with or without cause, (ii) the service of a Consultant pursuant to the terms of such Consultant's agreement with the Company or an Affiliate, or (iii) the service of a Director pursuant to the bylaws of the Company or an Affiliate, and any applicable provisions of the corporate law of the state in which the Company or the Affiliate is incorporated, as the case may be.

(e) Change in Time Commitment. In the event a Participant's regular level of time commitment in the performance of his or her services for the Company and any Affiliates is reduced (for example, and without limitation, if the Participant is an Employee of the Company and the Employee has a change in status from a full-time Employee to a part-time Employee or takes an extended leave of absence) after the date of grant of any Stock Award to the Participant, the Compensation Committee has the right in its sole discretion to (x) make a corresponding reduction in the number of shares or cash amount subject to any portion of such Stock Award that is scheduled to vest or become payable after the date of such change in time commitment, and (y) in lieu of or in combination with such a reduction, extend the vesting or payment schedule applicable to such Stock Award. In the event of any such reduction, the Participant will have no right with respect to any portion of the Stock Award that is so reduced.

(f) Investment Assurances. The Company may require a Participant, as a condition of exercising or acquiring Common Stock under any Stock Award, (i) to give written assurances satisfactory to the Company as to the Participant's knowledge and experience in financial and business matters and/or to employ a purchaser representative reasonably satisfactory to the Company who is knowledgeable and experienced in financial and business matters and that he or she is capable of evaluating, alone or together with the purchaser representative, the merits and risks of exercising the Stock Award; and (ii) to give written assurances satisfactory to the Company stating that the Participant is acquiring Common Stock subject to the Stock Award for the Participant's own account and not with any present intention of selling or otherwise distributing the Common Stock. The foregoing requirements, and any assurances given pursuant to such requirements, will be inoperative if (A) the issuance of the shares upon the exercise or acquisition of Common Stock under the Stock Award has been registered under a then currently effective registration statement under the Securities Act, or (B) as to any particular requirement, a determination is made by counsel for the Company that such requirement need not be met in the circumstances under the then applicable securities laws. The Company may, upon advice of counsel to the Company, place legends on stock certificates issued under the Plan as such counsel deems necessary or appropriate in order to comply with applicable securities laws, including, but not limited to, legends restricting the transfer of the Common Stock.

(g) Withholding Obligations. Unless prohibited by the terms of a Stock Award Agreement, the Company may, in its sole discretion, satisfy any federal, state or local tax withholding obligation relating to a Stock Award by any of the following means or by a combination of such means: (i) causing the Participant to tender a cash payment; (ii) withholding shares of Common Stock from the shares of Common Stock issued or otherwise

issuable to the Participant in connection with the Stock Award; *provided*, *however*, that no shares of Common Stock are withheld with a value exceeding the minimum amount of tax required to be withheld by law (or such lesser amount as may be necessary to avoid classification of the Stock Award as a liability for financial accounting purposes); (iii) withholding cash from a Stock Award settled in cash; (iv) withholding payment from any amounts otherwise payable to the Participant; or (v) by such other method as may be set forth in the Stock Award Agreement.

(h) Electronic Delivery. Any reference herein to a "written" agreement or document will include any agreement or document delivered electronically, filed publicly at www.sec.gov (or any successor website thereto) or posted on the Company's intranet (or other shared electronic medium controlled by the Company to which the Participant has access).

(i) Deferrals. To the extent permitted by applicable law, the Compensation Committee, in its sole discretion, may determine that the delivery of Common Stock or the payment of cash, upon the exercise, vesting or settlement of all or a portion of any Stock Award may be deferred and may establish programs and procedures for deferral elections to be made by Participants. Deferrals by Participants will be made in accordance with Section 409A of the Code. Consistent with Section 409A of the Code, the Compensation Committee may provide for distributions while a Participant is still an employee or otherwise providing services to the Company. The Compensation Committee is authorized to make deferrals of Stock Awards and determine when, and in what annual percentages, Participants may receive payments, including lump sum payments, following the Participant's termination of Continuous Service, and implement such other terms and conditions consistent with the provisions of the Plan and in accordance with applicable law.

(j) Compliance with Section 409A. Unless otherwise expressly provided for in a Stock Award Agreement, the Plan and Stock Award Agreements will be interpreted to the greatest extent possible in a manner that makes the Plan and the Stock Awards granted hereunder exempt from Section 409A of the Code, and, to the extent not so exempt, in compliance with Section 409A of the Code. If the Compensation Committee determines that any Stock Award granted hereunder is not exempt from and is therefore subject to Section 409A of the Code, the Stock Award Agreement evidencing such Stock Award will incorporate the terms and conditions necessary to avoid the consequences specified in Section 409A(a)(1) of the Code, and to the extent a Stock Award Agreement is silent on terms necessary for compliance, such terms are hereby incorporated by reference into the Stock Award Agreement. Notwithstanding anything to the contrary in this Plan (and unless the Stock Award Agreement specifically provides otherwise), if the shares of Common Stock are publicly traded, and if a Participant holding a Stock Award that constitutes "deferred compensation" under Section 409A of the Code is a "specified employee" for purposes of Section 409A of the Code, no distribution or payment of any amount that is due because of a "separation from service" (as defined in Section 409A of the Code without regard to alternative definitions thereunder) will be issued or paid before the date that is six months following the date of such Participant's "separation from service" or, if earlier, the date of the Participant's death, unless such distribution or payment can be made in a manner that complies with Section 409A of the Code, and any amounts so deferred will be paid in a lump sum on the day after such six month period elapses, with the balance paid thereafter on the original schedule.

(k) Clawback/Recovery. All Stock Awards granted under the Plan will be subject to recoupment in accordance with any clawback policy that the Company is required to adopt pursuant to the listing standards of any national securities exchange or association on which the Company's securities are listed or as is otherwise required by the Dodd-Frank Wall Street Reform and Consumer Protection Act or other applicable law. In addition, the Compensation Committee may impose such other clawback, recovery or recoupment provisions in a Stock Award Agreement as the Compensation Committee determines necessary or appropriate, including but not limited to a reacquisition right in respect of previously acquired shares of Common Stock or other cash or property upon the occurrence of Cause. No recovery of compensation under such a clawback policy will be an event giving rise to a right to resign for "good reason" or "constructive termination" (or similar term) under any agreement with the Company.

9. ADJUSTMENTS UPON CHANGES IN COMMON STOCK; OTHER CORPORATE EVENTS.

(a) Capitalization Adjustments. In the event of a Capitalization Adjustment, the Compensation Committee will appropriately and proportionately adjust: (i) the class(es) and maximum number of securities subject to the Plan pursuant to Section 3(a) and (ii) the class(es) and number of securities and price per share of stock subject to outstanding Stock Awards. The Compensation Committee will make such adjustments, and its determination will be final, binding and conclusive.

(b) Dissolution or Liquidation. Except as otherwise provided in the Stock Award Agreement, in the event of a dissolution or liquidation of the Company, all outstanding Stock Awards (other than Stock Awards consisting of vested and outstanding shares of Common Stock not subject to a forfeiture condition or the Company's right of repurchase) will terminate immediately prior to the completion of such dissolution or liquidation, and the shares of Common Stock subject to the Company's repurchase rights or subject to a forfeiture condition may be repurchased or reacquired by the Company notwithstanding the fact that the holder of such Stock Award is providing Continuous Service; *provided, however*, that the Compensation Committee may, in its sole discretion, cause some or all Stock Awards to become fully vested, exercisable and/or no longer subject to repurchase or forfeiture (to the extent such Stock Awards have not previously expired or terminated) before the dissolution or liquidation is completed but contingent on its completion.

(c) Corporate Transaction. The following provisions will apply to Stock Awards in the event of a Corporate Transaction unless otherwise provided in the instrument evidencing the Stock Award or any other written agreement between the Company or any Affiliate and the Participant or unless otherwise expressly provided by the Compensation Committee at the time of grant of a Stock Award. In the event of a Corporate Transaction, then, notwithstanding any other provision of the Plan, the Compensation Committee will take one or more of the following actions with respect to Stock Awards, contingent upon the closing or completion of the Corporate Transaction:

(i) arrange for the surviving corporation or acquiring corporation (or the surviving or acquiring corporation's parent company) to assume or continue the Stock Award or to substitute a similar stock award for the Stock Award (including, but not limited to, an award to

acquire the same consideration paid to the stockholders of the Company pursuant to the Corporate Transaction);

(ii) arrange for the assignment of any reacquisition or repurchase rights held by the Company in respect of Common Stock issued pursuant to the Stock Award to the surviving corporation or acquiring corporation (or the surviving or acquiring corporation's parent company);

(iii) accelerate the vesting, in whole or in part, of the Stock Award (and, if applicable, the time at which the Stock Award may be exercised) to a date prior to the effective time of such Corporate Transaction as the Compensation Committee will determine (or, if the Compensation Committee will not determine such a date, to the date that is five days prior to the effective date of the Corporate Transaction), with such Stock Award terminating if not exercised (if applicable) at or prior to the effective time of the Corporate Transaction;

(iv) arrange for the lapse, in whole or in part, of any reacquisition or repurchase rights held by the Company with respect to the Stock Award;

(v) cancel or arrange for the cancellation of the Stock Award, to the extent not vested or not exercised prior to the effective time of the Corporate Transaction, in exchange for such cash consideration, if any, as the Compensation Committee, in its sole discretion, may consider appropriate; and

(vi) make a payment, in such form as may be determined by the Compensation Committee equal to the excess, if any, of (A) the value of the property the Participant would have received upon the exercise of the Stock Award immediately prior to the effective time of the Corporate Transaction, over (B) any exercise price payable by such holder in connection with such exercise.

The Compensation Committee need not take the same action or actions with respect to all Stock Awards or portions thereof or with respect to all Participants. The Compensation Committee may take different actions with respect to the vested and unvested portions of a Stock Award.

(d) Change in Control. A Stock Award may be subject to additional acceleration of vesting and exercisability upon or after a Change in Control as may be provided in the Stock Award Agreement for such Stock Award or as may be provided in any other written agreement between the Company or any Affiliate and the Participant, but in the absence of such provision, no such acceleration will occur.

10. PLAN TERM; EARLIER TERMINATION OR SUSPENSION OF THE PLAN.

The Compensation Committee may suspend or terminate the Plan at any time. No Stock Awards may be granted under the Plan while the Plan is suspended or after it is terminated.

11. EFFECTIVE DATE OF PLAN.

The Plan will become effective on the Effective Date.

12. CHOICE OF LAW.

The law of the State of Delaware will govern all questions concerning the construction, validity and interpretation of the Plan, without regard to that state's conflict of laws rules.

13. DEFINITIONS. As used in the Plan, the following definitions will apply to the capitalized terms indicated below:

(a) "***Affiliate***" means, at the time of determination, any "parent" or "subsidiary" of the Company as such terms are defined in Rule 405 of the Securities Act. The Compensation Committee will have the authority to determine the time or times at which "parent" or "subsidiary" status is determined within the foregoing definition.

(b) "***Award***" means a Stock Award.

(c) "***Award Agreement***" means a Stock Award Agreement.

(d) "***Board***" means the Board of Directors of the Company.

(e) "***Capital Stock***" means each and every class of common stock of the Company, regardless of the number of votes per share.

(f) "***Capitalization Adjustment***" means any change that is made in, or other events that occur with respect to, the Common Stock subject to the Plan or subject to any Stock Award after the Effective Date without the receipt of consideration by the Company through merger, consolidation, reorganization, recapitalization, reincorporation, stock dividend, dividend in property other than cash, large nonrecurring cash dividend, stock split, reverse stock split, liquidating dividend, combination of shares, exchange of shares, change in corporate structure or any similar equity restructuring transaction, as that term is used in Statement of Financial Accounting Standards Board Accounting Standards Codification Topic 718 (or any successor thereto). Notwithstanding the foregoing, the conversion of any convertible securities of the Company will not be treated as a Capitalization Adjustment.

(g) "***Cause***" will have the meaning ascribed to such term in any written agreement between the Participant and the Company defining such term and, in the absence of such agreement, such term means, with respect to a Participant, the occurrence of any of the following events: (i) such Participant's conviction of any felony or any crime involving fraud; (ii) such Participant's participation (whether by affirmative act or omission) in a fraud or felonious act against the Company and/or its Affiliates; (iii) conduct by such Participant which, based upon a good faith and reasonable factual investigation by the Company (or, if such Participant is an Officer, by the Board or Compensation Committee), demonstrates such Participant's unfitness to serve; (iv) such Participant's violation of any statutory or fiduciary duty, or duty of loyalty owed to the Company and/or its Affiliates and which has a material adverse effect on the Company and/or its Affiliates; (v) such Participant's violation of state or federal law in connection with such Participant's performance of such Participant's job which has a material adverse effect on the Company and/or its Affiliates; (vi) breach of any material term of any contract between such Participant and the Company and/or its Affiliates; and (vii) such Participant's violation of any

material Company policy. Notwithstanding the foregoing, such Participant's death or Disability shall not constitute Cause as set forth herein. The determination that a termination of the Participant's Continuous Service is either for Cause or without Cause will be made by the Board or Compensation Committee, as applicable, in its sole and exclusive judgment and discretion. Any determination by the Company that the Continuous Service of a Participant was terminated with or without Cause for the purposes of outstanding Stock Awards held by such Participant will have no effect upon any determination of the rights or obligations of the Company or such Participant for any other purpose.

(h) "***Change in Control***" means the occurrence, in a single transaction or in a series of related transactions, of any one or more of the following events:

(i) any Exchange Act Person becomes the Owner, directly or indirectly, of securities of the Company representing more than 50% of the combined voting power of the Company's then outstanding securities other than by virtue of a merger, consolidation or similar transaction. Notwithstanding the foregoing, a Change in Control will not be deemed to occur (A) on account of the acquisition of securities of the Company directly from the Company, (B) on account of the acquisition of securities of the Company by an investor, any affiliate thereof or any other Exchange Act Person that acquires the Company's securities in a transaction or series of related transactions the primary purpose of which is to obtain financing for the Company through the issuance of equity securities, (C) on account of the acquisition of securities of the Company by any individual who is, on the Effective Date, either an executive officer or a Director (either, a "***Registration Investor***") and/or any entity in which a Registration Investor has a direct or indirect interest (whether in the form of voting rights or participation in profits or capital contributions) of more than 50% (collectively, the "***Registration Entities***") or on account of the Registration Entities continuing to hold shares that come to represent more than 50% of the combined voting power of the Company's then outstanding securities as a result of the conversion of any class of the Company's securities into another class of the Company's securities having a different number of votes per share pursuant to the conversion provisions set forth in the Company's Amended and Restated Certificate of Incorporation; or (D) solely because the level of Ownership held by any Exchange Act Person (the "***Subject Person***") exceeds the designated percentage threshold of the outstanding voting securities as a result of a repurchase or other acquisition of voting securities by the Company reducing the number of shares outstanding, provided that if a Change in Control would occur (but for the operation of this sentence) as a result of the acquisition of voting securities by the Company, and after such share acquisition, the Subject Person becomes the Owner of any additional voting securities that, assuming the repurchase or other acquisition had not occurred, increases the percentage of the then outstanding voting securities Owned by the Subject Person over the designated percentage threshold, then a Change in Control will be deemed to occur;

(ii) there is consummated a merger, consolidation or similar transaction involving (directly or indirectly) the Company and, immediately after the consummation of such merger, consolidation or similar transaction, the stockholders of the Company immediately prior thereto do not Own, directly or indirectly, either (A) outstanding voting securities representing more than 50% of the combined outstanding voting power of the surviving Entity in such merger, consolidation or similar transaction or (B) more than 50% of the combined outstanding voting power of the parent of the surviving Entity in such merger, consolidation or similar

transaction, in each case in substantially the same proportions as their Ownership of the outstanding voting securities of the Company immediately prior to such transaction; *provided, however*, that a merger, consolidation or similar transaction will not constitute a Change in Control under this prong of the definition if the outstanding voting securities representing more than 50% of the combined voting power of the surviving Entity or its parent are owned by the Registration Entities;

(iii) there is consummated a sale, lease, exclusive license or other disposition of all or substantially all of the consolidated assets of the Company and its Subsidiaries, other than a sale, lease, license or other disposition of all or substantially all of the consolidated assets of the Company and its Subsidiaries to an Entity, more than fifty percent (50%) of the combined voting power of the voting securities of which are Owned by stockholders of the Company in substantially the same proportions as their Ownership of the outstanding voting securities of the Company immediately prior to such sale, lease, license or other disposition; *provided, however*, that a sale, lease, exclusive license or other disposition of all or substantially all of the consolidated assets of the Company and its Subsidiaries will not constitute a Change in Control under this prong of the definition if the outstanding voting securities representing more than 50% of the combined voting power of the acquiring Entity or its parent are owned by the Registration Entities; or

(iv) individuals who, on the date the Plan is adopted by the Compensation Committee, are members of the Board (the "***Incumbent Board***") cease for any reason to constitute at least a majority of the members of the Board; *provided, however*, that if the appointment or election (or nomination for election) of any new Board member was approved or recommended by a majority vote of the members of the Incumbent Board then still in office, such new member will, for purposes of this Plan, be considered as a member of the Incumbent Board.

Notwithstanding the foregoing definition or any other provision of this Plan, the term Change in Control will not include a sale of assets, merger or other transaction effected exclusively for the purpose of changing the domicile of the Company and the definition of Change in Control (or any analogous term) in an individual written agreement between the Company or any Affiliate and the Participant will supersede the foregoing definition with respect to Stock Awards subject to such agreement; *provided, however*, that if no definition of Change in Control or any analogous term is set forth in such an individual written agreement, the foregoing definition will apply.

(i) "***Code***" means the Internal Revenue Code of 1986, as amended, including any applicable regulations and guidance thereunder.

(j) "***Committee***" means a committee of one or more Directors to whom authority has been delegated by the Compensation Committee in accordance with Section 2(c). Authority to grant Awards may only be deleted to a Committee comprised of a majority of the Company's Independent Directors.

(k) "***Common Stock***" means, as of the Effective Date, the common stock of the Company, having 1 vote per share.

(l) "***Company***" means GlycoMimetics, Inc., a Delaware corporation.

(m) "***Compensation Committee***" means the Compensation Committee of the Board as composed solely of Independent Directors.

(n) "***Consultant***" means any person, including an advisor, who is (i) engaged by the Company or an Affiliate to render consulting or advisory services and is compensated for such services, or (ii) serving as a member of the board of directors of an Affiliate and is compensated for such services. However, service solely as a Director, or payment of a fee for such service, will not cause a Director to be considered a "Consultant" for purposes of the Plan. Notwithstanding the foregoing, a person is treated as a Consultant under this Plan only if a Form S-8 Registration Statement under the Securities Act is available to register either the offer or the sale of the Company's securities to such person.

(o) "***Continuous Service***" means that the Participant's service with the Company or an Affiliate, whether as an Employee, Director or Consultant, is not interrupted or terminated. A change in the capacity in which the Participant renders service to the Company or an Affiliate as an Employee, Consultant or Director or a change in the entity for which the Participant renders such service, provided that there is no interruption or termination of the Participant's service with the Company or an Affiliate, will not terminate a Participant's Continuous Service ; *provided, however*, that if the Entity for which a Participant is rendering services ceases to qualify as an Affiliate, as determined by the Compensation Committee, in its sole discretion, such Participant's Continuous Service will be considered to have terminated on the date such Entity ceases to qualify as an Affiliate. To the extent permitted by law, the Compensation Committee or the chief executive officer of the Company, in that party's sole discretion, may determine whether Continuous Service will be considered interrupted in the case of (i) any leave of absence approved by the Compensation Committee or chief executive officer, including sick leave, military leave or any other personal leave, or (ii) transfers between the Company, an Affiliate, or their successors. Notwithstanding the foregoing, a leave of absence will be treated as Continuous Service for purposes of vesting in a Stock Award only to such extent as may be provided in the Company's leave of absence policy, in the written terms of any leave of absence agreement or policy applicable to the Participant, or as otherwise required by law.

(p) "***Corporate Transaction***" means the consummation, in a single transaction or in a series of related transactions, of any one or more of the following events:

(i) a sale or other disposition of all or substantially all, as determined by the Compensation Committee, in its sole discretion, of the consolidated assets of the Company and its Subsidiaries;

(ii) a sale or other disposition of at least 90% of the outstanding securities of the Company;

(iii) a merger, consolidation or similar transaction following which the Company is not the surviving corporation; or

(iv) a merger, consolidation or similar transaction following which the Company is the surviving corporation but the shares of Common Stock outstanding immediately preceding the merger, consolidation or similar transaction are converted or exchanged by virtue of the merger, consolidation or similar transaction into other property, whether in the form of securities, cash or otherwise.

(q) "***Director***" means a member of the Board.

(r) "***Disability***" means, with respect to a Participant, the inability of such Participant to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment that can be expected to result in death or that has lasted or can be expected to last for a continuous period of not less than 12 months, as provided in Sections 22(e)(3) and 409A(a)(2)(c)(i) of the Code, and will be determined by the Compensation Committee on the basis of such medical evidence as the Compensation Committee deems warranted under the circumstances.

(s) "***Effective Date***" means January 22, 2020, the date the Compensation Committee approved the Plan.

(t) "***Eligible Employee***" has the meaning set forth in Section 1(a).

(u) "***Employee***" means any person employed by the Company or an Affiliate. However, service solely as a Director, or payment of a fee for such services, will not cause a Director to be considered an "Employee" for purposes of the Plan.

(v) "***Entity***" means a corporation, partnership, limited liability company or other entity.

(w) "***Exchange Act***" means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

(x) "***Exchange Act Person***" means any natural person, Entity or "group" (within the meaning of Section 13(d) or 14(d) of the Exchange Act), except that "Exchange Act Person" will not include (i) the Company or any Subsidiary of the Company, (ii) any employee benefit plan of the Company or any Subsidiary of the Company or any trustee or other fiduciary holding securities under an employee benefit plan of the Company or any Subsidiary of the Company, (iii) an underwriter temporarily holding securities pursuant to a registered public offering of such securities, (iv) an Entity Owned, directly or indirectly, by the stockholders of the Company in substantially the same proportions as their Ownership of stock of the Company; or (v) any natural person, Entity or "group" (within the meaning of Section 13(d) or 14(d) of the Exchange Act) that, as of the Effective Date, is the Owner, directly or indirectly, of securities of the Company representing more than 50% of the combined voting power of the Company's then outstanding securities.

(y) "***Fair Market Value***" means, as of any date, the value of the Common Stock determined as follows:

(i) If the Common Stock is listed on any established stock exchange or traded on any established market, the Fair Market Value of a share of Common Stock will be, unless otherwise determined by the Compensation Committee, **the closing sales price** for such stock as quoted on such exchange or market (or the exchange or market with the greatest volume of trading in the Common Stock) **on the date of determination**, as reported in a source the Compensation Committee deems reliable.

(ii) Unless otherwise provided by the Compensation Committee, if there is no closing sales price for the Common Stock on the date of determination, then the Fair Market Value will be the closing selling price on the last preceding date for which such quotation exists.

(iii) In the absence of such markets for the Common Stock, the Fair Market Value will be determined by the Compensation Committee in good faith and in a manner that complies with Sections 409A of the Code.

(z) "***Incentive Stock Option***" means an option that is intended to be, and qualifies as, an "incentive stock option" within the meaning of Section 422 of the Code.

(aa) "***Independent Director***" has the meaning set forth in Section 1(a).

(bb) "***Inducement Award Rules***" has the meaning set forth in Section 1(a).

(cc) "***Non-Employee Director***" means a Director who either (i) is not a current employee or officer of the Company or an Affiliate, does not receive compensation, either directly or indirectly, from the Company or an Affiliate for services rendered as a consultant or in any capacity other than as a Director (except for an amount as to which disclosure would not be required under Item 404(a) of Regulation S-K promulgated pursuant to the Securities Act ("***Regulation S-K***")), does not possess an interest in any other transaction for which disclosure would be required under Item 404(a) of Regulation S-K, and is not engaged in a business relationship for which disclosure would be required pursuant to Item 404(b) of Regulation S-K; or (ii) is otherwise considered a "non-employee director" for purposes of Rule 16b-3.

(dd) "***Nonstatutory Stock Option***" means any option granted pursuant to Section 5 of the Plan that does not qualify as an Incentive Stock Option.

(ee) "***Officer***" means a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act.

(ff) "***Option***" means a Nonstatutory Stock Option to purchase shares of Common Stock granted pursuant to the Plan.

(gg) "***Option Agreement***" means a written agreement between the Company and an Optionholder evidencing the terms and conditions of an Option grant. Each Option Agreement will be subject to the terms and conditions of the Plan.

(hh) "***Optionholder***" means a person to whom an Option is granted pursuant to the Plan or, if applicable, such other person who holds an outstanding Option.

(ii) "***Other Stock Award***" means an award based in whole or in part by reference to the Common Stock which is granted pursuant to the terms and conditions of Section 6(c).

(jj) "***Other Stock Award Agreement***" means a written agreement between the Company and a holder of an Other Stock Award evidencing the terms and conditions of an Other Stock Award grant. Each Other Stock Award Agreement will be subject to the terms and conditions of the Plan.

(kk) "***Own,***" "***Owned,***" "***Owner,***" "***Ownership***" means a person or Entity will be deemed to "Own," to have "Owned," to be the "Owner" of, or to have acquired "Ownership" of securities if such person or Entity, directly or indirectly, through any contract, arrangement, understanding, relationship or otherwise, has or shares voting power, which includes the power to vote or to direct the voting, with respect to such securities.

(ll) "***Participant***" means a person to whom a Stock Award is granted pursuant to the Plan or, if applicable, such other person who holds an outstanding Stock Award.

(mm) "***Plan***" means this GlycoMimetics, Inc. Inducement Plan.

(nn) "***Restricted Stock Award***" means an award of shares of Common Stock which is granted pursuant to the terms and conditions of Section 6(a).

(oo) "***Restricted Stock Award Agreement***" means a written agreement between the Company and a holder of a Restricted Stock Award evidencing the terms and conditions of a Restricted Stock Award grant. Each Restricted Stock Award Agreement will be subject to the terms and conditions of the Plan.

(pp) "***Restricted Stock Unit Award***" means a right to receive shares of Common Stock which is granted pursuant to the terms and conditions of Section 6(b).

(qq) "***Restricted Stock Unit Award Agreement***" means a written agreement between the Company and a holder of a Restricted Stock Unit Award evidencing the terms and conditions of a Restricted Stock Unit Award grant. Each Restricted Stock Unit Award Agreement will be subject to the terms and conditions of the Plan.

(rr) "***Rule 16b-3***" means Rule 16b-3 promulgated under the Exchange Act or any successor to Rule 16b-3, as in effect from time to time.

(ss) "***Securities Act***" means the Securities Act of 1933, as amended.

(tt) "***Stock Appreciation Right***" or "***SAR***" means a right to receive the appreciation on Common Stock that is granted pursuant to the terms and conditions of Section 5.

(uu) "***Stock Appreciation Right Agreement***" means a written agreement between the Company and a holder of a Stock Appreciation Right evidencing the terms and conditions of a Stock Appreciation Right grant. Each Stock Appreciation Right Agreement will be subject to the terms and conditions of the Plan.

(vv) "***Stock Award***" means any right to receive Common Stock granted under the Plan, including a Nonstatutory Stock Option, a Restricted Stock Award, a Restricted Stock Unit Award, a Stock Appreciation Right or any Other Stock Award.

(ww) "***Stock Award Agreement***" means a written agreement between the Company and a Participant evidencing the terms and conditions of a Stock Award grant. Each Stock Award Agreement will be subject to the terms and conditions of the Plan.

(xx) "***Subsidiary***" means, with respect to the Company, (i) any corporation of which more than 50% of the outstanding capital stock having ordinary voting power to elect a majority of the board of directors of such corporation (irrespective of whether, at the time, stock of any other class or classes of such corporation will have or might have voting power by reason of the happening of any contingency) is at the time, directly or indirectly, Owned by the Company, and (ii) any partnership, limited liability company or other entity in which the Company has a direct or indirect interest (whether in the form of voting or participation in profits or capital contribution) of more than 50%.

Exhibit 10.22

GLYCOMIMETICS, INC.
STOCK OPTION GRANT NOTICE
(INDUCEMENT PLAN)

GlycoMimetics, Inc. (the "***Company***"), pursuant to its Inducement Plan (the "***Plan***"), hereby grants to Optionholder an option to purchase the number of shares of the Company's Common Stock set forth below. This option is subject to all of the terms and conditions as set forth in this notice, in the Option Agreement, the Plan and the Notice of Exercise, all of which are attached hereto and incorporated herein in their entirety. Capitalized terms not explicitly defined herein but defined in the Plan or the Option Agreement will have the same definitions as in the Plan or the Option Agreement. If there is any conflict between the terms in this notice and the Plan, the terms of the Plan will control.

Optionholder:	_____
Date of Grant:	_____
Vesting Commencement Date:	_____
Number of Shares Subject to Option:	_____
Exercise Price (Per Share):	_____
Total Exercise Price:	_____
Expiration Date:	_____

Type of Grant: Nonstatutory Stock Option

Exercise Schedule: Same as Vesting Schedule

Vesting Schedule: **[**One-fourth **(**1/4th) of the shares vest one year after the Vesting Commencement Date, and the balance of the shares vest in a series of thirty-six (36) successive equal monthly installments measured from the first anniversary of the Vesting Commencement Date, subject to Optionholder's Continuous Service as of each such date.]

Payment: By one or a combination of the following items (described in the Option Agreement):

☐ By cash, check, bank draft or money order payable to the Company
☐ Pursuant to a Regulation T Program if the shares are publicly traded
☐ Subject to the Company's consent at the time of exercise, by delivery of already-owned shares if the shares are publicly traded
☐ Subject to the Company's consent at the time of exercise, by a "net exercise" arrangement

Additional Terms/Acknowledgements: Optionholder acknowledges receipt of, and understands and agrees to, this Stock Option Grant Notice, the Option Agreement and the Plan. Optionholder acknowledges and agrees that this Stock Option Grant Notice and the Option Agreement may not be modified, amended or revised except as provided in the Plan. Optionholder further acknowledges that as of the Date of Grant, this Stock Option Grant Notice, the Option Agreement, and the Plan set forth the entire understanding between Optionholder and the Company regarding this option award and supersede all prior oral and written agreements, promises and/or representations on that subject with the exception of (i) options previously granted and delivered to Optionholder, (ii) any compensation recovery policy that is adopted by the Company or is otherwise required by applicable law and (iii) any written employment or severance arrangement that would provide for vesting acceleration of this option upon the terms and conditions set forth therein. By accepting this option, Optionholder consents to receive such documents by electronic delivery and to participate in the Plan through an on-line or electronic system established and maintained by the Company or another third party designated by the Company.

GLYCOMIMETICS, INC.	**OPTIONHOLDER:**
By: _____	_____
Signature	Signature
Title: _____	Date: _____
Date: _____	

ATTACHMENTS: Option Agreement, Inducement Plan and Notice of Exercise

GLYCOMIMETICS, INC.
INDUCEMENT PLAN

OPTION AGREEMENT
(NONSTATUTORY STOCK OPTION)

Pursuant to your Stock Option Grant Notice ("***Grant Notice***") and this Option Agreement, GlycoMimetics, Inc. (the "***Company***") has granted you an option under its Inducement Plan (the "***Plan***") to purchase the number of shares of the Company's Common Stock indicated in your Grant Notice at the exercise price indicated in your Grant Notice. The option is granted to you effective as of the date of grant set forth in the Grant Notice (the "***Date of Grant***"). If there is any conflict between the terms in this Option Agreement and the Plan, the terms of the Plan will control. Capitalized terms not explicitly defined in this Option Agreement or in the Grant Notice but defined in the Plan will have the same definitions as in the Plan.

The details of your option, in addition to those set forth in the Grant Notice and the Plan, are as follows:

1. VESTING. Subject to the provisions contained herein, your option will vest as provided in your Grant Notice. Vesting will cease upon the termination of your Continuous Service.

2. NUMBER OF SHARES AND EXERCISE PRICE. The number of shares of Common Stock subject to your option and your exercise price per share in your Grant Notice will be adjusted for Capitalization Adjustments.

3. EXERCISE RESTRICTION FOR NON-EXEMPT EMPLOYEES. If you are an Employee eligible for overtime compensation under the Fair Labor Standards Act of 1938, as amended (that is, a "***Non-Exempt Employee***"), and except as otherwise provided in the Plan, you may not exercise your option until you have completed at least six (6) months of Continuous Service measured from the Date of Grant, even if you have already been an employee for more than six (6) months. Consistent with the provisions of the Worker Economic Opportunity Act, you may exercise your option as to any vested portion prior to such six (6) month anniversary in the case of (i) your death or disability, (ii) a Corporate Transaction in which your option is not assumed, continued or substituted, (iii) a Change in Control or (iv) your termination of Continuous Service on your "retirement" (as defined in the Company's benefit plans).

4. METHOD OF PAYMENT. You must pay the full amount of the exercise price for the shares you wish to exercise. You may pay the exercise price in cash or by check, bank draft or money order payable to the Company or in any other manner ***permitted by your Grant Notice,*** which may include one or more of the following:

(a) Provided that at the time of exercise the Common Stock is publicly traded, pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board that, prior to the issuance of Common Stock, results in either the receipt of cash (or check) by the Company or the receipt of irrevocable instructions to pay the aggregate exercise price to

the Company from the sales proceeds. This manner of payment is also known as a "broker-assisted exercise", "same day sale", or "sell to cover".

(b) Provided that at the time of exercise the Common Stock is publicly traded, by delivery to the Company (either by actual delivery or attestation) of already-owned shares of Common Stock that are owned free and clear of any liens, claims, encumbrances or security interests, and that are valued at Fair Market Value on the date of exercise. "Delivery" for these purposes, in the sole discretion of the Company at the time you exercise your option, will include delivery to the Company of your attestation of ownership of such shares of Common Stock in a form approved by the Company. You may not exercise your option by delivery to the Company of Common Stock if doing so would violate the provisions of any law, regulation or agreement restricting the redemption of the Company's stock.

(c) Subject to the consent of the Company at the time of exercise, by a "net exercise" arrangement pursuant to which the Company will reduce the number of shares of Common Stock issued upon exercise of your option by the largest whole number of shares with a Fair Market Value that does not exceed the aggregate exercise price. You must pay any remaining balance of the aggregate exercise price not satisfied by the "net exercise" in cash or other permitted form of payment. Shares of Common Stock will no longer be outstanding under your option and will not be exercisable thereafter if those shares (i) are used to pay the exercise price pursuant to the "net exercise," (ii) are delivered to you as a result of such exercise, and (iii) are withheld to satisfy your tax withholding obligations.

5. WHOLE SHARES. You may exercise your option only for whole shares of Common Stock.

6. SECURITIES LAW COMPLIANCE. In no event may you exercise your option unless the shares of Common Stock issuable upon exercise are then registered under the Securities Act or, if not registered, the Company has determined that your exercise and the issuance of the shares would be exempt from the registration requirements of the Securities Act. The exercise of your option also must comply with all other applicable laws and regulations governing your option, and you may not exercise your option if the Company determines that such exercise would not be in material compliance with such laws and regulations (including any restrictions on exercise required for compliance with Treas. Reg. 1.401(k)-1(d)(3), if applicable).

7. TERM. You may not exercise your option before the Date of Grant or after the expiration of the option's term. The term of your option expires, subject to the provisions of Section 5(h) of the Plan, upon the earliest of the following:

(a) immediately upon the termination of your Continuous Service for Cause;

(b) three (3) months after the termination of your Continuous Service for any reason other than Cause, your Disability or your death (except as otherwise provided in Section 8(d) below); *provided, however,* that if during any part of such three (3) month period your option is not exercisable solely because of the condition set forth in the section above relating to "Securities Law Compliance," your option will not expire until the earlier of the Expiration Date or until it has been exercisable for an aggregate period of three (3) months after the termination

of your Continuous Service; *provided further*, if during any part of such three (3) month period, the sale of any Common Stock received upon exercise of your option would violate the Company's insider trading policy, then your option will not expire until the earlier of the Expiration Date or until it has been exercisable for an aggregate period of three (3) months after the termination of your Continuous Service during which the sale of the Common Stock received upon exercise of your option would not be in violation of the Company's insider trading policy. Notwithstanding the foregoing, if (i) you are a Non-Exempt Employee, (ii) your Continuous Service terminates within six (6) months after the Date of Grant, and (iii) you have vested in a portion of your option at the time of your termination of Continuous Service, your option will not expire until the earlier of (x) the later of (A) the date that is seven (7) months after the Date of Grant, and (B) the date that is three (3) months after the termination of your Continuous Service, and (y) the Expiration Date;

(c) twelve (12) months after the termination of your Continuous Service due to your Disability (except as otherwise provided in Section 7(d)) below;

(d) eighteen (18) months after your death if you die either during your Continuous Service or within three (3) months after your Continuous Service terminates for any reason other than Cause;

(e) the Expiration Date indicated in your Grant Notice; or

(f) the day before the tenth (10th) anniversary of the Date of Grant.

8. EXERCISE.

(a) You may exercise the vested portion of your option during its term by (i) delivering a Notice of Exercise (in a form designated by the Company) or completing such other documents and/or procedures designated by the Company for exercise and (ii) paying the exercise price and any applicable withholding taxes to the Company's Secretary, stock plan administrator, or such other person as the Company may designate, together with such additional documents as the Company may then require.

(b) By exercising your option you agree that, as a condition to any exercise of your option, the Company may require you to enter into an arrangement providing for the payment by you to the Company of any tax withholding obligation of the Company arising by reason of (i) the exercise of your option or (ii) the disposition of shares of Common Stock acquired upon such exercise.

9. TRANSFERABILITY. Except as otherwise provided in this Section 9, your option is not transferable, except by will or by the laws of descent and distribution, and is exercisable during your life only by you.

(a) Certain Trusts. Upon receiving written permission from the Board or its duly authorized designee, you may transfer your option to a trust if you are considered to be the sole beneficial owner (determined under Section 671 of the Code and applicable state law) while the option is held in the trust. You and the trustee must enter into transfer and other agreements required by the Company.

(b) Domestic Relations Orders. Upon receiving written permission from the Board or its duly authorized designee, and provided that you and the designated transferee enter into transfer and other agreements required by the Company, you may transfer your option pursuant to the terms of a domestic relations order, official marital settlement agreement or other divorce or separation instrument that contains the information required by the Company to effectuate the transfer. You are encouraged to discuss the proposed terms of any division of this option with the Company prior to finalizing the domestic relations order, official marital settlement agreement or other divorce or separation instrument to help ensure the required information is contained within the domestic relations order, official marital settlement agreement or other divorce or separation instrument.

(c) Beneficiary Designation. Upon receiving written permission from the Board or its duly authorized designee, you may, by delivering written notice to the Company, in a form approved by the Company and any broker designated by the Company to handle option exercises, designate a third party who, on your death, will thereafter be entitled to exercise this option and receive the Common Stock or other consideration resulting from such exercise. In the absence of such a designation, your executor or administrator of your estate will be entitled to exercise this option and receive, on behalf of your estate, the Common Stock or other consideration resulting from such exercise.

10. OPTION NOT A SERVICE CONTRACT. Your option is not an employment or service contract, and nothing in your option will be deemed to create in any way whatsoever any obligation on your part to continue in the employ of the Company or an Affiliate, or of the Company or an Affiliate to continue your employment. In addition, nothing in your option will obligate the Company or an Affiliate, their respective stockholders, boards of directors, officers or employees to continue any relationship that you might have as a Director or Consultant for the Company or an Affiliate.

11. WITHHOLDING OBLIGATIONS.

(a) At the time you exercise your option, in whole or in part, and at any time thereafter as requested by the Company, you hereby authorize withholding from payroll and any other amounts payable to you, and otherwise agree to make adequate provision for (including by means of a "same day sale" pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board to the extent permitted by the Company), any sums required to satisfy the federal, state, local and foreign tax withholding obligations of the Company or an Affiliate, if any, which arise in connection with the exercise of your option.

(b) Upon your request and subject to approval by the Company, and compliance with any applicable legal conditions or restrictions, the Company may withhold from fully vested shares of Common Stock otherwise issuable to you upon the exercise of your option a number of whole shares of Common Stock having a Fair Market Value, determined by the Company as of the date of exercise, not in excess of the minimum amount of tax required to be withheld by law (or such lower amount as may be necessary to avoid classification of your option as a liability for financial accounting purposes).

(c) You may not exercise your option unless the tax withholding obligations of the Company and/or any Affiliate are satisfied. Accordingly, you may not be able to exercise your option when desired even though your option is vested, and the Company will have no obligation to issue a certificate for such shares of Common Stock or release such shares of Common Stock from any escrow provided for herein, if applicable, unless such obligations are satisfied.

12. TAX CONSEQUENCES. You hereby agree that the Company does not have a duty to design or administer the Plan or its other compensation programs in a manner that minimizes your tax liabilities. You will not make any claim against the Company, or any of its Officers, Directors, Employees or Affiliates related to tax liabilities arising from your option or your other compensation. In particular, you acknowledge that this option is exempt from Section 409A of the Code only if the exercise price per share specified in the Grant Notice is at least equal to the "fair market value" per share of the Common Stock on the Date of Grant and there is no other impermissible deferral of compensation associated with the option.

13. NOTICES. Any notices provided for in your option or the Plan will be given in writing (including electronically) and will be deemed effectively given upon receipt or, in the case of notices delivered by mail by the Company to you, five (5) days after deposit in the United States mail, postage prepaid, addressed to you at the last address you provided to the Company. The Company may, in its sole discretion, decide to deliver any documents related to participation in the Plan and this option by electronic means or to request your consent to participate in the Plan by electronic means. By accepting this option, you consent to receive such documents by electronic delivery and to participate in the Plan through an on-line or electronic system established and maintained by the Company or another third party designated by the Company.

14. GOVERNING PLAN DOCUMENT. Your option is subject to all the provisions of the Plan, the provisions of which are hereby made a part of your option, and is further subject to all interpretations, amendments, rules and regulations, which may from time to time be promulgated and adopted pursuant to the Plan. If there is any conflict between the provisions of your option and those of the Plan, the provisions of the Plan will control. In addition, your option (and any compensation paid or shares issued under your option) is subject to recoupment in accordance with The Dodd–Frank Wall Street Reform and Consumer Protection Act and any implementing regulations thereunder, any clawback policy adopted by the Company and any compensation recovery policy otherwise required by applicable law.

15. OTHER DOCUMENTS. You hereby acknowledge receipt of and the right to receive a document providing the information required by Rule 428(b)(1) promulgated under the Securities Act, which includes the Plan prospectus. In addition, you acknowledge receipt of the Company's policy permitting certain individuals to sell shares only during certain "window" periods and the Company's insider trading policy, in effect from time to time.

16. EFFECT ON OTHER EMPLOYEE BENEFIT PLANS. The value of this option will not be included as compensation, earnings, salaries, or other similar terms used when calculating your benefits under any employee benefit plan sponsored by the Company or any Affiliate,

except as such plan otherwise expressly provides. The Company expressly reserves its rights to amend, modify, or terminate any of the Company's or any Affiliate's employee benefit plans.

17. VOTING RIGHTS. You will not have voting or any other rights as a stockholder of the Company with respect to the shares to be issued pursuant to this option until such shares are issued to you. Upon such issuance, you will obtain full voting and other rights as a stockholder of the Company. Nothing contained in this option, and no action taken pursuant to its provisions, will create or be construed to create a trust of any kind or a fiduciary relationship between you and the Company or any other person.

18. SEVERABILITY. If all or any part of this Option Agreement or the Plan is declared by any court or governmental authority to be unlawful or invalid, such unlawfulness or invalidity will not invalidate any portion of this Option Agreement or the Plan not declared to be unlawful or invalid. Any Section of this Option Agreement (or part of such a Section) so declared to be unlawful or invalid shall, if possible, be construed in a manner which will give effect to the terms of such Section or part of a Section to the fullest extent possible while remaining lawful and valid.

19. MISCELLANEOUS.

(a) The rights and obligations of the Company under your option will be transferable to any one or more persons or entities, and all covenants and agreements hereunder will inure to the benefit of, and be enforceable by the Company's successors and assigns.

(b) You agree upon request to execute any further documents or instruments necessary or desirable in the sole determination of the Company to carry out the purposes or intent of your option.

(c) You acknowledge and agree that you have reviewed your option in its entirety, have had an opportunity to obtain the advice of counsel prior to executing and accepting your option, and fully understand all provisions of your option.

(d) This Option Agreement will be subject to all applicable laws, rules, and regulations, and to such approvals by any governmental agencies or national securities exchanges as may be required.

(e) All obligations of the Company under the Plan and this Option Agreement will be binding on any successor to the Company, whether the existence of such successor is the result of a direct or indirect purchase, merger, consolidation, or otherwise, of all or substantially all of the business and/or assets of the Company.

* * *

This Option Agreement will be deemed to be signed by you upon the signing by you of the Stock Option Grant Notice to which it is attached.

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements:

(1) Registration Statement (Form S-8 No. 333-193317) pertaining to the 2003 Stock Incentive Plan, as amended, 2013 Equity Incentive Plan and 2013 Employee Stock Purchase Plan of GlycoMimetics, Inc.,

(2) Registration Statement (Form S-8 No. 333-206166) pertaining to the 2013 Equity Incentive Plan and 2013 Employee Stock Purchase Plan of GlycoMimetics, Inc.,

(3) Registration Statement (Form S-8 No. 333-209814) pertaining to the 2013 Equity Incentive Plan and 2013 Employee Stock Purchase Plan of GlycoMimetics, Inc.,

(4) Registration Statement (Form S-8 No. 333-216366) pertaining to the 2013 Equity Incentive Plan and 2013 Employee Stock Purchase Plan of GlycoMimetics, Inc.,

(5) Registration Statement (Form S-3 No. 333-220697) of GlycoMimetics, Inc.,

(6) Registration Statement (Form S-8 No. 333-223462) pertaining to the 2013 Equity Incentive Plan and 2013 Employee Stock Purchase Plan of GlycoMimetics, Inc.,

(7) Registration Statement (Form S-8 No. 333-230117) pertaining to the 2013 Equity Incentive Plan and 2013 Employee Stock Purchase Plan of GlycoMimetics, Inc., and

(8) Registration Statement (Form S-3 No. 333-231577) of GlycoMimetics, Inc.

of our reports dated February 28, 2020, with respect to the financial statements of GlycoMimetics, Inc. and the effectiveness of internal control over financial reporting of GlycoMimetics, Inc. included in this Annual Report (Form 10-K) of GlycoMimetics, Inc. for the year ended December 31, 2019.

/s/ Ernst & Young LLP

Baltimore, Maryland
February 28, 2020

EXHIBIT 31.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Rachel K. King, certify that:

1. I have reviewed this annual report on Form 10-K of GlycoMimetics, Inc. (the "registrant");

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

4. The registrant's other certifying officer(s) 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 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 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 our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to 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 such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's 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(s) 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 equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are 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: February 28, 2020

/s/ Rachel K. King
Rachel K. King
President & Chief Executive Officer
(principal executive officer)

EXHIBIT 31.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Brian M. Hahn, certify that:

1. I have reviewed this annual report on Form 10-K of GlycoMimetics, Inc. (the "registrant");

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

4. The registrant's other certifying officer(s) 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 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 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 our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to 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 such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's 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(s) 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 equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are 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: February 28, 2020

/s/ Brian M. Hahn
Brian M. Hahn
Chief Financial Officer
(principal financial officer)

EXHIBIT 32.1

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

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350), Rachel K. King, Chief Executive Officer of GlycoMimetics, Inc. (the "Company"), and Brian M. Hahn, Chief Financial Officer of the Company, each hereby certifies that, to the best of his or her knowledge:

1. The Company's Annual Report on Form 10-K for the year ended December 31, 2019 (the "Annual Report"), to which this Certification is attached as Exhibit 32.1, fully complies with the requirements of Section 13(a) or Section 15(d) of the Exchange Act, and

2. The information contained in the Annual Report fairly presents, in all material respects, the financial condition of the Company as of the end of the period covered by the Annual Report and results of operations of the Company for the periods covered by the Annual Report.

In Witness Whereof, the undersigned have set their hands hereto as of the 28th day of February, 2020.

/s/ Rachel K. King
Rachel K. King
President & Chief Executive Officer

/s/ Brian M. Hahn
Brian M. Hahn
Chief Financial Officer

* This certification accompanies the Form 10-K to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of GlycoMimetics, Inc. 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 the Form 10-K), irrespective of any general incorporation language contained in such filing.