PRELIMINARY PROSPECTUS

4,000,000 Shares

GlycoMimetics, Inc.

Common Stock

We are offering 4,000,000 shares of our common stock. This is our initial public offering and no public market currently exists for our common stock. We expect the initial public offering price to be between $14.00 and $16.00 per share.

We have applied to list our common stock on The NASDAQ Global Market under the symbol "GLYC." We are an "emerging growth company" as that term is used in the Jumpstart Our Business Startups Act of 2012 and, as such, have elected to comply with certain reduced public company reporting requirements for this prospectus and future filings.

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

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

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

(1) We have agreed to reimburse the underwriters for certain expenses. See "Underwriting."

Certain of our existing investors and their affiliated entities, as well as other third parties with whom we have a preexisting business relationship, have indicated an interest in purchasing an aggregate of up to approximately $14.0 million in shares of our common stock in this offering at the initial public offering price. However, because indications of interest are not binding agreements or commitments to purchase, the underwriters may determine to sell more, less or no shares in this offering to any of these entities, or any of these entities may determine to purchase more, less or no shares in this offering. The underwriters will receive the same underwriting discount on any shares purchased by these entities as they will on any other shares sold to the public in this offering.

Delivery of the shares of common stock is expected to be made on or about , 2013. We have granted the underwriters an option for a period of 30 days to purchase an additional 600,000 shares of our common stock. If the underwriters exercise the option in full, the total underwriting discounts and commissions payable by us will be $, and the total proceeds to us, before expenses, will be $.

Joint Book-Running Managers

Jefferies **Barclays**

Co-Managers

Stifel **Canaccord Genuity**

Prospectus dated , 2013

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We and the underwriters have not authorized anyone to provide any information or to make any representations other than those contained in this prospectus or in any free writing prospectuses we have prepared. We and the underwriters take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus is an offer to sell only the shares offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. The information contained in this prospectus is current only as of its date.

Through and including , 2013 (the 25th day after the date of this prospectus), all dealers effecting transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to a dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to an unsold allotment or subscription.

For investors outside the United States: We and the underwriters have not done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. Persons who come into possession of this prospectus and any applicable free writing prospectus in jurisdictions outside the United States are required to inform themselves about and to observe any restrictions as to this offering and the distribution of this prospectus and any such free writing prospectus applicable to that jurisdiction.

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PROSPECTUS SUMMARY

This summary highlights information contained elsewhere in this prospectus and does not contain all of the information that you should consider in making your investment decision. Before investing in our common stock, you should carefully read this entire prospectus, including our financial statements and the related notes thereto and the information set forth under the sections "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations," in each case included in this prospectus. Unless the context otherwise requires, we use the terms "GlycoMimetics," "company," "we," "us" and "our" in this prospectus to refer to GlycoMimetics, Inc.

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. Glycomimetics are molecules that mimic the structure of carbohydrates involved in important biological processes. Using our expertise in carbohydrate chemistry and knowledge of carbohydrate biology, we are developing a pipeline of proprietary glycomimetics that 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 initial efforts on drug candidates for rare diseases that we believe will qualify for orphan drug designation. We are developing our lead drug candidate, GMI-1070, also known as rivipansel sodium, for the treatment of vaso-occlusive crisis, or VOC, one of the most severe complications of sickle cell disease. VOC is typically characterized by excruciating, debilitating pain that occurs periodically throughout the life of a person with sickle cell disease. According to the U.S. Centers for Disease Control and Prevention, there were approximately 73,000 hospitalizations related to VOC in the United States in 2010. The standard of care in the United States for people experiencing VOC is to manage its symptoms, which typically includes hospitalization, narcotic pain management and hydration. There are no approved therapies that interrupt VOC once it has started or that treat the underlying cause of the pain.

In April 2013, we completed a Phase 2 clinical trial in which 76 patients hospitalized for VOC were treated with the standard of care plus either GMI-1070 or placebo. In this trial, patients treated with GMI-1070 experienced reductions in time to reach resolution of VOC, length of hospital stay and use of opioid analgesics for pain management, in each case as compared to patients receiving placebo. GMI-1070 has received fast track designation from the U.S. Food and Drug Administration, or FDA, as well as orphan drug designation from the FDA in the United States and from the European Medicines Agency in the European Union. We believe that GMI-1070, if approved, would be the first drug to interrupt the underlying cause of VOC, thereby potentially reducing the use of narcotics for pain management and enabling patients to leave the hospital more quickly.

In October 2011, we entered into a collaboration with Pfizer Inc., under which Pfizer is now responsible for the further clinical development, regulatory approval and potential commercialization of GMI-1070 for all indications and Pfizer has commercial rights to GMI-1070 worldwide. Under this collaboration, we received an upfront payment of $22.5 million from Pfizer. We are also eligible to receive up to $115.0 million in development milestone payments, up to $70.0 million in regulatory milestone payments and up to $135.0 million in commercial milestone payments. We are also eligible to receive tiered royalties, with percentages ranging from the low double digits to the low teens, based on net sales of GMI-1070 worldwide.

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 carbohydrates to the surface of the proteins. The addition of these carbohydrate structures affects the functions of these 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 the onset and progression of VOC and that GMI-1070, which binds to all three members of the selectin family, E-, P- and L-selectin, inhibits the role that selectins play in VOC. We believe our expertise in carbohydrate chemistry and our understanding of carbohydrate-protein binding interactions enable us to design selectin antagonists and other glycomimetics that inhibit the disease-related functions of certain carbohydrates.

Building on our experience with GMI-1070, we are developing a pipeline of other glycomimetic drug candidates. Our second most advanced drug candidate, GMI-1271, is a specific E-selectin inhibitor, which we are developing to be used in combination with chemotherapy to treat patients with acute myeloid leukemia, or AML, and potentially other hematologic cancers. 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. We believe that by inhibiting binding interactions between cancer cells and the bone marrow, GMI-1271 may mobilize cancer cells out of the bone marrow and make them more sensitive to chemotherapy, thereby improving response rates and duration of remission in patients with AML. We plan to file an investigational new drug application, or IND, for GMI-1271 in the first quarter of 2014. Assuming the IND is accepted, we plan to initiate a Phase 1 dose-escalation clinical trial of GMI-1271 in healthy volunteers in the second quarter of 2014. We intend to follow this trial with Phase 1/2 dose-escalation clinical trials in AML patients.

Our preclinical pipeline also includes other E-selectin antagonists that we are designing and testing for oral availability, glycomimetic compounds that simultaneously target both E-selectin and a chemokine receptor known as CXCR4, and glycomimetic compounds focused on other targets. For example, we are investigating several compounds, including GMI-1051, to treat pseudomonas infections in combination with antibiotics.

We have retained the worldwide development and commercialization rights to all of our drug candidates other than GMI-1070. Our intellectual property portfolio contains issued patents and patent applications directed to, among other things, compositions of matter and methods of use for our drug candidates. Our issued patents directed to GMI-1070 and methods of use are expected to expire between 2023 and 2030, and our patent applications directed to GMI-1271, if issued, are expected to expire between 2032 and 2033.

We were founded in 2003 and are headquartered in Gaithersburg, Maryland. Our principal investors are funds managed by New Enterprise Associates, Genzyme Corporation, Anthem Capital, Alliance Technology Ventures and Rosetta Capital.

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:

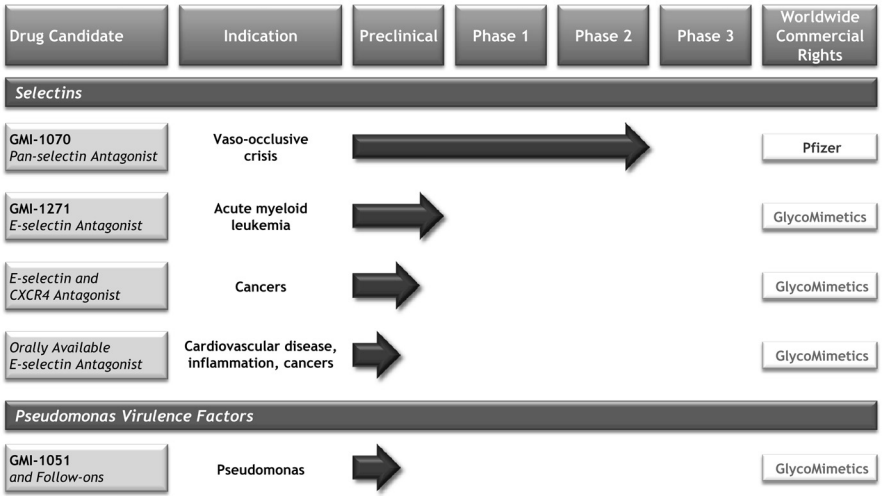
- ***Support Pfizer's further development of our lead drug candidate, GMI-1070.*** We will continue to work with Pfizer as it proceeds with further clinical development of GMI-1070, including the Phase 3 clinical trial that we expect Pfizer to initiate in mid-2014, and pursues regulatory approval of GMI-1070. We expect to use any milestone and royalty payments that we may receive from Pfizer to accelerate the development of our other drug candidates.
- ***Rapidly advance GMI-1271 for the treatment of AML.*** We intend to build on our experience developing GMI-1070 to rapidly advance GMI-1271 for the treatment of AML in combination with chemotherapy. We plan to file an IND with the FDA in the first quarter of 2014 for this indication. Assuming the IND is accepted, we plan to initiate a Phase 1 dose-escalation clinical trial in healthy volunteers in the second quarter of 2014, to be followed by Phase 1/2 dose-escalation clinical trials in

defined populations of patients with AML. We have retained worldwide development and commercialization rights to GMI-1271.

- ***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 drugs or may address larger market opportunities. We are in the process of selecting and intend to develop a drug candidate that simultaneously inhibits both E-selectin and CXCR4 for use in the treatment of cancers with significant bone marrow involvement, such as myeloma. We are also working to design an orally available E-selectin antagonist, which we believe could be of significant interest to potential collaborators for major market opportunities, such as the treatment of cardiovascular disease.
- ***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. One potential target is pseudomonas, a pathogenic form of bacteria that results in serious infections and is frequently resistant to treatment with antibiotics. We have observed results in animal models that suggest glycomimetic drugs can be used to improve treatment of pseudomonas infections. We have an active preclinical program testing and optimizing compounds to treat these infections.

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.



GMI-1070—Targeting Selectins to Treat VOC

We are developing GMI-1070, a glycomimetic drug candidate that acts as a pan-selectin antagonist, meaning that it binds to all three members of the selectin family, to treat VOC. We believe that GMI-1070, by acting as a pan-selectin antagonist, inhibits the role that selectins play in VOC. We have completed four clinical trials of GMI-1070 involving a total of 163 subjects.

In April 2013, we completed a Phase 2 clinical trial in 76 patients hospitalized for VOC. This was a randomized, double-blind, placebo-controlled trial evaluating the safety, efficacy and pharmacokinetics of standard of care plus multiple intravenous, or IV, doses of either GMI-1070 or placebo in patients ranging from 12 to 60 years old. In this trial, patients treated with GMI-1070 experienced reductions in the time to reach resolution of VOC, length of hospital stay and use of opioid analgesics for pain management, in each case as compared to patients receiving placebo. The time to reach resolution of VOC, the primary endpoint of the trial, was reduced in the patients receiving GMI-1070 by over 40 hours, the time to hospital discharge was reduced

by over 50 hours, the time to transition off IV analgesics was reduced by over 45 hours and the cumulative amount of opioid analgesic administered during hospitalization was reduced by over 80%. Although the study was not large enough to detect statistically significant differences, we believe the reductions we observed in these measures with GMI-1070 therapy, and the consistency of a positive response across multiple measures related to a VOC episode, demonstrate the potential benefit of GMI-1070. Based on the data from our Phase 2 clinical trial for GMI-1070, we believe GMI-1070 has the potential to become the first drug approved to treat VOC in both adult and pediatric patient populations. Although Mast Therapeutics, Inc. is currently conducting a Phase 3 clinical trial of a drug candidate that may be used to treat an ongoing VOC episode, we believe that it is only being tested in pediatric patients ages 8 to 17 years old, unlike GMI-1070 which is being tested to treat both adult and pediatric patients experiencing VOC.

If GMI-1070 is demonstrated to be safe and effective for the treatment of VOC, we believe it may show substantial clinical and pharmacoeconomic benefit and may therefore result in a significant market opportunity for GMI-1070 worldwide. In addition, if GMI-1070 is shown to be safe and effective at reducing the duration of VOC in hospitalized patients, it could also be tested in people experiencing VOC who are not hospitalized to determine if hospitalization could be prevented. Following the completion of the Phase 2 clinical trial, Pfizer is responsible for all further development and commercialization efforts with respect to GMI-1070.

GMI-1271—Targeting the Bone Marrow Microenvironment to Treat Hematologic Cancers

We are developing GMI-1271, a specific E-selectin antagonist, to be used in combination with chemotherapy to treat AML and potentially other hematologic cancers. GMI-1271 targets interactions between cancer cells and the bone marrow microenvironment. Leukemia cells bind to E-selectin in the bone marrow, where they are somewhat protected from chemotherapy. In preclinical studies, E-selectin inhibition disrupted the adhesion of leukemia cells in the bone marrow and mobilized them out of the bone marrow and into the bloodstream, making them more sensitive to chemotherapy. In other preclinical studies, GMI-1271 reduced some of the toxic effects of chemotherapy, such as neutropenia and mucositis, on normal cells. As a result, we believe GMI-1271 may improve chemotherapy response rates, duration of remission and, ultimately, survival in patients with hematologic cancers like AML.

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. The American Cancer Society estimates that in 2013, approximately 15,000 people in the United States will be diagnosed with AML and over 10,000 people in the United States will die of the disease.

We are planning to hold a pre-IND meeting with the FDA in the fourth quarter of 2013 and to file an IND for GMI-1271 in the first quarter of 2014. Assuming the IND is accepted, we plan to initiate a Phase 1 dose-escalation clinical trial in healthy volunteers in the second quarter of 2014, to be followed by Phase 1/2 dose-escalation clinical trials in defined populations of patients with AML.

Drug Candidates Targeting E-selectin and CXCR4

We have identified a family of drug candidates that are designed to simultaneously inhibit both E-selectin and CXCR4. We intend to select one of these drug candidates to be developed for the treatment of cancers with significant bone marrow involvement, such as myeloma. CXCR4 is a binding protein on the surface of stem cells that keeps them in the bone marrow and prevents them from entering the bloodstream. Due to the similar cellular functions of E-selectin and CXCR4 as adhesion molecules that bind 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, as compared to targeting CXCR4 alone.

GMI-1051 and Other Drug Candidates Targeting Pseudomonas Virulence Factors

Pseudomonas bacteria express and secrete molecules known as virulence factors, which are involved in key functions of bacterial survival and propagation. These virulence factors bind to specific carbohydrate structures, which we believe can be targeted with glycomimetic drugs. We have developed one drug candidate, GMI-1051, which is an antagonist of two important pseudomonas virulence factors, PA-IL and PA-IIL. We have

conducted a number of *in vitro* and *in vivo* preclinical studies of GMI-1051. In each study, GMI-1051 inhibited the functions of both PA-IL and PA-IIL and had greater affinity for these targets than did the native carbohydrates. We also studied GMI-1051 *in vivo* in three animal models of pseudomonas infection. In one study, GMI-1051 improved survival of mice in a chronic lung infection model when given in combination with tobramycin, an antibacterial often used to treat pseudomonas infections, as compared to treatment with tobramycin alone. In two other studies, GMI-1051 reduced bacterial load in an acute lung infection model and improved survival in a model of surgical infection. We are actively testing and optimizing GMI-1051 and other similar compounds to identify the most suitable candidates for further development.

Risks Associated with Our Business

Our business is subject to a number of risks of which you should be aware before deciding to invest in our common stock. These risks are discussed more fully in the "Risk Factors" section of this prospectus. These risks include the following:

- 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.
- 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.
- 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.
- We are very early in our development efforts and have only one drug candidate, GMI-1070, that has completed a clinical trial. 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.
- Our success is highly dependent on our existing collaboration with Pfizer, and future collaborations may also be important to us. If we are unable to maintain any of these collaborations, or if these collaborations are not successful, our business could be adversely affected.
- Our future success depends on our ability to retain key executives and to attract, retain and motivate qualified personnel.
- We face substantial competition, which may result in others discovering, developing or commercializing drugs before or more successfully than we do.

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 401 Professional Drive, Suite 250, Gaithersburg, Maryland 20879. Our telephone number is (240) 243-1201. Our website address is *www.glycomimetics.com*. The information contained on our website is not incorporated by reference into this prospectus, and you should not consider any information contained on, or that can be accessed through, our website as part of this prospectus or in deciding whether to purchase our common stock.

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

Implications of Being an Emerging Growth Company

As a company with less than $1 billion in revenue during our last fiscal year, we qualify as an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. For so long as we remain an emerging growth company, we are permitted and intend to rely on exemptions from some of

the reporting requirements that are applicable to other public companies that are not emerging growth companies. These exemptions include:

- being permitted to provide only two years of audited financial statements, in addition to any required unaudited interim financial statements, with correspondingly reduced "Management's Discussion and Analysis of Financial Condition and Results of Operations" disclosure;
- not being required to comply with the auditor attestation requirements in the assessment of our internal control over financial reporting;
- not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements;
- reduced disclosure obligations regarding executive compensation; and
- not being required to hold a non-binding advisory vote on executive compensation or obtain stockholder approval of any golden parachute payments not previously approved.

We may take advantage of these reporting exemptions until we are no longer an emerging growth company. We will remain an emerging growth company until the earlier of (1) the last day of the fiscal year (a) following the fifth anniversary of the completion of this offering, (b) in which we have total annual gross revenue of at least $1 billion or (c) in which we are deemed to be a large accelerated filer, which means the market value of our common stock that is held by non-affiliates exceeds $700 million as of the prior June 30th and (2) the date on which we have issued more than $1 billion in non-convertible debt during the prior three-year period. We may choose to take advantage of some, but not all, of the available exemptions. We have taken advantage of some reduced reporting burdens in this prospectus. Accordingly, the information contained herein may be different than the information you receive from other public companies in which you hold stock.

In addition, under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have irrevocably elected not to avail ourselves of this exemption from new or revised accounting standards and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

The Offering

Common stock offered by GlycoMimetics	4,000,000 shares
Total common stock to be outstanding after this offering	14,555,496 shares
Option to purchase additional shares of common stock	We have granted the underwriters an option for a period of 30 days from the date of this prospectus to purchase an additional 600,000 shares of our common stock.
Use of proceeds	We expect the net proceeds to us from this offering, after expenses, to be approximately $53.3 million, based on an assumed initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus. The principal purposes of this offering are to create a public market for our common stock and to facilitate our future access to the public equity markets, as well as to obtain additional capital. We intend to use the net proceeds from this offering as follows: ■ approximately $35.0 million to conduct planned Phase 1 and Phase 1/2 clinical trials of GMI-1271; ■ approximately $15.0 million to fund the research and development of our preclinical pipeline, including drug discovery; and ■ the remainder for working capital and other general corporate purposes. See "Use of Proceeds" on page 39 for additional information.
Risk factors	See the section titled "Risk Factors" beginning on page 11 and the other information included in this prospectus for a discussion of factors you should carefully consider before deciding to invest in our common stock.
Proposed NASDAQ Global Market symbol	GLYC

The number of shares of our common stock that will be outstanding after this offering is based on 10,555,496 shares of common stock outstanding as of September 30, 2013, and excludes:

- 1,173,287 shares of our common stock issuable upon the exercise of stock options outstanding under our 2003 stock incentive plan as of September 30, 2013, at a weighted average exercise price of $1.24 per share;
- 635,249 shares of our common stock issuable upon exercise of warrants outstanding as of September 30, 2013, at a weighted average exercise price of $0.39 per share;
- approximately 575,000 shares of our common stock issuable upon the exercise of stock options we expect to grant to our executive officers and directors under our 2013 equity incentive plan upon the effective date of the registration statement of which this prospectus is a part, which will have an exercise price equal to the initial public offering price in this offering; and
- an additional approximately 600,000 shares of our common stock reserved for future issuance under our equity incentive plans following this offering.

Except as otherwise indicated herein, all information in this prospectus, including the number of shares that will be outstanding after this offering, assumes or gives effect to:

- a 1-for-3.302 reverse stock split of our common stock effected on October 25, 2013;
- the conversion of all outstanding shares of our convertible preferred stock into an aggregate of 9,305,359 shares of our common stock, which will occur automatically upon the completion of this offering; and
- no exercise of the underwriters' option to purchase additional shares of our common stock.

Summary Financial Data

The following tables set forth summary financial data of GlycoMimetics, Inc. for the periods indicated. The following summary financial data for the years ended December 31, 2011 and 2012 are derived from our audited financial statements, which have been audited by Ernst & Young LLP, an independent registered public accounting firm, appearing elsewhere in this prospectus. The data should be read together with "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 prospectus. The summary statement of operations data for the six months ended June 30, 2012 and 2013 and for the period from May 21, 2003 (date of inception) through June 30, 2013 and the summary balance sheet data as of June 30, 2013 are derived from unaudited financial statements appearing elsewhere in this prospectus.

The unaudited financial statements include all adjustments, consisting of normal recurring accruals, that management considers necessary for a fair presentation of the financial position and the results of operations for these periods. Our historical results are not necessarily indicative of the results to be expected in the future, and our operating results for the six months ended June 30, 2013 are not necessarily indicative of the results that may be expected for the entire year ending December 31, 2013 or any other future period.

(in thousands, except share and per share data)	YEAR ENDED DECEMBER 31,		SIX MONTHS ENDED JUNE 30,		PERIOD FROM MAY 21, 2003 (DATE OF INCEPTION) TO JUNE 30, 2013
	2011	2012	2012	2013	
Statement of Operations Data:					
Revenue	$ 3,814	$ 15,257	$ 7,542	$ 3,863	$ 23,465
Costs and expenses:					
Research and development	7,799	9,438	4,256	5,624	64,723
General and administrative	2,100	2,157	1,090	1,263	14,233
Total costs and expenses	9,899	11,595	5,346	6,887	78,956
Income (loss) from operations	(6,085)	3,662	2,196	(3,024)	(55,491)
Other income (expense):					
Interest income (expense), net	8	21	12	1	(172)
Other expense, net	(36)	(27)	(13)	(4)	(34)
Total other expense	(28)	(6)	(1)	(3)	(206)
Net income (loss)	$ (6,113)	$ 3,656	$ 2,195	$ (3,027)	$ (55,697)
Net income (loss) per share of common stock—basic	$ (6.58)	$ 3.93	$ 2.36	$ (3.23)	
Net income (loss) per share of common stock—diluted	$ (6.58)	$ 0.33	$ 0.20	$ (3.23)	
Weighted average shares outstanding—basic	928,604	929,619	929,619	937,590	
Weighted average shares outstanding—diluted	928,604	11,016,532	11,018,521	937,590	
Pro forma net income (loss) per share—basic		$ 0.36		$ (0.30)	
Pro forma net income (loss) per share—diluted		$ 0.33		$ (0.30)	
Pro forma weighted average shares outstanding—basic		10,234,987		10,242,959	
Pro forma weighted average shares outstanding—diluted		11,016,532		10,242,959	

The following table presents our summary balance sheet data:

- on an actual basis as of June 30, 2013;
- on a pro forma basis to give effect to the conversion of all outstanding shares of our convertible preferred stock into an aggregate of 9,305,359 shares of our common stock, which will occur automatically upon the completion of this offering; and
- on a pro forma as adjusted basis to give further effect to our sale of 4,000,000 shares of common stock in this offering at an assumed initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The pro forma as adjusted information presented in the summary balance sheet data is illustrative only and will change based on the actual initial public offering price and other terms of this offering determined at pricing. Each $1.00 increase or decrease in the assumed initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease each of cash and cash equivalents, working capital, total assets and total stockholders' equity on a pro forma as adjusted basis by approximately $3.7 million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same.

	AS OF JUNE 30, 2013		
(in thousands) **Balance Sheet Data:**	ACTUAL	PRO FORMA	PRO FORMA AS ADJUSTED
Cash and cash equivalents	$10,778	$10,778	$64,078
Working capital	9,471	9,471	62,771
Total assets	11,554	11,554	64,854
Total liabilities	1,815	1,815	1,815
Total stockholders' equity	9,738	9,738	63,038

RISK FACTORS

Investing in our common stock involves a high degree of risk. Before you invest in our common stock, you should carefully consider the following risks, as well as general economic and business risks, and all of the other information contained in this prospectus. 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, which would cause you to lose all or part of your investment. When determining whether to invest, you should also refer to the other information contained in this prospectus, including our financial statements and the related notes thereto.

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. While we generated net income of $3.7 million for the year ended December 31, 2012 as a result of recognizing $15.0 million of revenue under our license agreement with Pfizer, we incurred net losses of $6.1 million for the year ended December 31, 2011 and $3.0 million for the six months ended June 30, 2013. As of June 30, 2013, we had an accumulated deficit of $55.7 million. We have financed our operations to date with $64.1 million raised in private placements of convertible debt and convertible preferred stock and $22.5 million received in 2011 as an upfront payment under our license agreement with Pfizer. We have not generated any meaningful revenue since our inception other than from the upfront payment.

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. Although responsibility for further development, regulatory approval and potential commercialization of our lead drug candidate, GMI-1070, has transferred to Pfizer under our collaboration with them following the recent completion of our Phase 2 clinical trial, we anticipate that our expenses will increase substantially as we:

- commence clinical trials of GMI-1271;
- 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 other than GMI-1070 for which we may obtain regulatory approval;
- maintain, expand and protect our intellectual property portfolio;
- hire additional clinical, quality control 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 additional 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 other than GMI-1070, 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 GMI-1070, our ability to generate revenue is dependent upon the achievement of development, regulatory and commercial milestones and sales sufficient to generate royalties under our license agreement with Pfizer, and the achievement of such milestones is largely out of our control. If Pfizer fails, or chooses not to

continue, to further develop, seek regulatory approval for or commercialize GMI-1070, our ability to generate revenue with respect to GMI-1070 will be significantly reduced or eliminated. Because all of our drug candidates other than GMI-1070 are still in preclinical development, if we are unable to generate revenue from our license agreement with Pfizer, we may never become profitable, and we may not be able to invest in the further development of our other drug candidates.

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 you to lose all or part of your investment.

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 the net proceeds from this offering, together with our existing cash and cash equivalents as of June 30, 2013, will enable us to fund our operating expenses and capital expenditure requirements for at least the next 12 months, without giving effect to any potential milestone payments we may receive under our agreement with Pfizer. 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:

- our agreement with Pfizer remaining in effect and our ability to achieve milestones under this and any other license or collaboration agreement that we may enter into in the future, including a potential $35.0 million milestone payment upon dosing the first patient in a Phase 3 clinical trial, of which we may receive $15.0 million as an advance under specified circumstances;
- the progress and results of the Phase 3 clinical trial of GMI-1070 that we expect Pfizer to commence in mid-2014, pending approval through Pfizer's governance process;
- the scope, progress, results and costs of preclinical development, laboratory testing and clinical trials for our other drug candidates, including our planned Phase 1 and Phase 1/2 clinical trials of GMI-1271;
- 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 other than GMI-1070 for which we receive marketing approval;
- any royalties we receive from Pfizer with respect to sales of GMI-1070, if it receives marketing approval;
- the revenue, if any, received from commercial sales of our drug candidates other than GMI-1070 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 and Pfizer or any 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 many 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, including purchasers of common stock in this offering, 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 Pfizer. 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 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, with respect to GMI-1070, conducting clinical trials. All but one of our drug candidates are still in preclinical development. 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. Consequently, any predictions you make about our future success or viability may not be as accurate as they could be if we had a longer operating history.

We may encounter unforeseen expenses, difficulties, complications, delays and other known or unknown factors in achieving our business objectives. With respect to our drug candidates other than GMI-1070, 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 utilize our net operating loss carryforwards and certain other tax attributes may be limited.

Under Section 382 of the Internal Revenue Code of 1986, as amended, if a corporation undergoes an "ownership change," 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, or NOL, carryforwards and other pre-change tax attributes to offset its post-change income may be limited. We may experience ownership changes in the future as a result of shifts in our stock ownership. As of December 31, 2012, we had federal NOL carryforwards of $11.4 million, state NOL carryforwards of $1.8 million and research and development tax credit carryforwards of $3.3 million, each of which could be limited if we experience an ownership change.

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 are very early in our development efforts and have only one drug candidate, GMI-1070, that has completed a clinical trial. 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.

We are very early in our development efforts and have only one drug candidate, GMI-1070, that has completed a clinical trial. All of 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. Other than with respect to GMI-1070, for which our collaborator Pfizer now has the responsibility for further development and commercialization, our ability to generate revenue from our other drug candidates, which we do not expect will 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 one 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.

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 GMI-1070 and GMI-1271 are intended to treat patients with sickle cell disease and AML, respectively, both of which represent a relatively low percentage of the population as compared to other diseases, 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 is highly dependent on our existing collaboration with Pfizer, and future collaborations may also be important to us. 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. Under our license agreement with Pfizer, Pfizer is responsible for all further development, regulatory approval and potential commercialization efforts with respect to GMI-1070. All of our drug candidates other than GMI-1070 are still in preclinical development, and therefore our success is highly dependent on our collaboration with Pfizer. We cannot assure you that Pfizer will continue to develop GMI-1070 in a timely manner, or at all, or, if it achieves regulatory approval, that Pfizer will successfully commercialize GMI-1070.

Our Pfizer collaboration, and any future 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 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 our collaboration with Pfizer or any other collaborations we might enter into in the future 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, including the $35.0 million payment for the next milestone under the Pfizer agreement or the potential $15.0 million advance against that milestone payment. In addition, even if we are eligible to receive these payments, they could be substantially delayed. For example, under our license agreement, Pfizer has the option to commence another Phase 2 clinical trial of GMI-1070, and such commencement would delay or inhibit our ability to receive some of the milestone payments we might otherwise have received under the agreement. 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 prospectus also apply to the activities of our collaborators.

If Pfizer or a 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.

For our drug candidates other than GMI-1070, we may in the future determine to collaborate with pharmaceutical and biotechnology companies for their development and potential commercialization. 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 other than GMI-1070, and those third parties may not perform satisfactorily, including failing to meet deadlines for the completion of such trials.

We currently expect to engage a third-party contract research organization, or CRO, to conduct our planned clinical trials for GMI-1271 and 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 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 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 GMI-1070, for which manufacturing responsibility has shifted to Pfizer, 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 receive marketing approval. 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 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.

Our drug candidates and any drugs that we may develop may compete with other drug candidates and drugs for access to manufacturing facilities. There are a limited number of manufacturers that operate under cGMP regulations and that might be capable of manufacturing for us. Any performance failure on the part of our existing or future manufacturers could delay clinical development or marketing approval. We do not currently have arrangements in place for redundant supply or a second source for bulk drug substance. We are currently manufacturing GMI-1271 through a third party, but the drug supply to treat patients in our planned Phase 1 clinical trial is not yet available and there is no guarantee that it will become available in time for the anticipated start of that trial. 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.

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.

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 drug candidates other than GMI-1070, 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. Under our collaboration with Pfizer, Pfizer is responsible for the commercialization of GMI-1070, our lead drug candidate, if it receives regulatory approval. To achieve commercial success for any other 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.

With respect to GMI-1070, we are not aware of any therapies that have been approved for treatment of patients experiencing VOC. The only drug approved for the prevention of VOC, but not for the resolution of an ongoing VOC episode, is hydroxyurea, which is available in both generic and branded formulations. We are also aware of a company, Mast Therapeutics, Inc., that is developing a drug to treat an ongoing VOC episode. Mast is currently conducting a Phase 3 clinical trial in pediatric patients 8 to 17 years old experiencing VOC. If Mast's drug achieves regulatory approval before GMI-1070, it could adversely affect commercialization of GMI-1070 if it is approved.

In addition to efforts to treat ongoing VOC episodes, we are aware of a number of companies developing therapies intended to prevent VOC from occurring in the first place. One company, Selexys Pharmaceuticals Corporation, is developing a therapy that, like our drug candidates, targets selectins. Selexys has announced that it has commenced enrollment in a Phase 2 clinical trial for its selectin antagonist drug candidate. Other companies are using different approaches to target a variety of biological mechanisms. We are also aware of efforts to develop cures for sickle cell disease through approaches such as bone marrow transplant and gene therapy. If any these approaches are successful and receive regulatory approval, it could limit the market for a drug such as GMI-1070.

In addition, numerous non-profit and non-commercial foundations and interest groups also are committed to improving outcomes for patients with sickle cell disease. Advances in the understanding of the signaling pathways associated with sickle cell disease may lead to further interest and development of treatment options. There is also increasing interest among for-profit companies in developing drugs for rare diseases, which may have the effect of increasing the development of drug candidates to treat sickle cell disease generally or VOC in particular. Legislative action, such as the potential to expand the priority review voucher system to rare pediatric diseases, may generate further interest in developing drug candidates to treat sickle cell disease or VOC and increase competition. If an alternative effective treatment or cure for VOC or sickle cell disease receives regulatory approval, the potential commercial success of GMI-1070 could be jeopardized.

In addition, a competitor's drug candidate with an orphan drug designation may receive marketing approval prior to GMI-1070. For example, we believe Mast has already received orphan drug designation in Europe for its drug candidate intended to treat an ongoing VOC episode. If Mast receives orphan drug designation in the United States and marketing approval for its drug candidate prior to GMI-1070 receiving marketing approval, the commercial success of GMI-1070 could be significantly limited.

With respect to GMI-1271 and its development for treatment of AML and other hematologic cancers, there is substantial potential competition from other therapies currently in development. While some chemotherapies in development for AML could potentially be complementary to GMI-1271, there are also therapies in development that could be directly competitive with GMI-1271. For example, Mozobil, which is currently marketed by Sanofi, is being studied in combination with chemotherapy for the treatment of AML and myeloma. As the treatment landscape for AML changes, there is substantial risk that GMI-1271 might not provide additional benefit over other therapies.

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 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.

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 and other early stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These companies compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

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

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. 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 currently hold $5.0 million of product liability insurance coverage in the aggregate, with a per incident limit of $5.0 million, which may not be adequate to cover all liabilities that we may incur. 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 for drug candidates other than GMI-1070. 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 is 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.

For marketing exclusivity in the treatment of an ongoing VOC episode in sickle cell disease, we expect to rely primarily on the orphan drug designation that the FDA has granted us for GMI-1070, which includes the treatment of the complications of sickle cell disease. However, in order to obtain marketing exclusivity, we must receive the first marketing approval for such indication. In addition, the orphan drug designation does not convey any advantage in, or shorten the duration of, the regulatory review or approval process.

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 our most advanced drug candidate, GMI-1070, we may not be able to obtain orphan drug marketing exclusivity for this drug candidate 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 and the EMA for GMI-1070 for the treatment of VOC, and we may seek orphan drug designation for our other drug candidates. 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 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 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 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 for GMI-1070 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 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 GMI-1070 to treat VOC, 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 program. 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 GMI-1070.

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 FDA approval. The regulatory approval process outside the United States generally includes all of the risks associated with obtaining 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 marketing our drug candidates internationally could hurt our business.

We or our collaborators may seek regulatory approval for GMI-1070 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 geo-political actions, including war and terrorism.

These and other risks associated with our potential international operations may compromise our ability to achieve or maintain profitability.

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 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 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 criminal sanctions, civil penalties, contractual damages, reputational harm, administrative burdens and diminished profits and future earnings.

Healthcare providers, physicians and third-party payors in the United States and elsewhere will play a primary role in the recommendation and prescription of any drug candidates for which we obtain marketing approval. Our 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 sell, market and distribute any drugs for which we obtain marketing approval. In addition, we may be subject to transparency laws and patient privacy 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 and state healthcare programs, such as Medicare and Medicaid;
- federal civil and criminal false claims laws and civil monetary penalty laws, including the federal False Claims Act, which impose criminal and civil penalties, including civil whistleblower or *qui tam* actions, against 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, 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 data collection beginning on August 1, 2013, requirements for manufacturers to submit reports to CMS by March 31, 2014, and the 90th day of each subsequent calendar year, and disclosure of such information to be made by CMS on a publicly available website beginning in September 2014; 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; 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, imprisonment, 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 and has been significantly affected by major legislative initiatives. In March 2010, President Obama signed into law the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or collectively the PPACA, a sweeping law intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, 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 the PPACA of importance to our 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 agree to offer 50% 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 beginning in 2014, 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.

In addition, other legislative changes have been proposed and adopted since the PPACA was enacted. These changes include aggregate reductions to Medicare payments to providers of up to 2% per fiscal year, starting in 2013. 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. 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.

We expect that the PPACA, as well as other healthcare reform measures that may be adopted in the future, 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. 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 Vice President of Research and Chief Scientific Officer; Helen Thackray, our Vice President of Clinical Development and Chief Medical Officer; and Brian Hahn, our 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 intend to enter into new employment agreements with our executive officers that will be effective upon the completion of this offering, each of them may currently terminate their employment with us at any time and will continue to be able to do so after the completion of this offering. We do not maintain "key person" insurance for any of our executives or employees other than Ms. King and Dr. Magnani.

Recruiting and retaining qualified scientific and clinical personnel and, if we progress the development of our drug pipeline other than GMI-1070 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 be employed by employers other than us and 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 may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements.

We are exposed to the risk of employee fraud or other misconduct. Misconduct by employees could include intentional failures to comply with 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. Effective upon the completion of this offering, we will adopt 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, those actions could have a significant impact on our business, including the imposition of significant fines or other sanctions.

Risks Related to this Offering, Ownership of Our Common Stock and Our Status as a Public Company

An active trading market for our common stock may not develop and you may not be able to resell your shares of our common stock at or above the initial offering price, if at all.

Prior to this offering, there has been no public market for our common stock. The initial public offering price for our common stock will be determined through negotiations with the underwriters and may not be indicative of the price at which our common stock will trade upon the completion of this offering. Although we have applied to list our common stock on The NASDAQ Global Market, an active trading market for our shares may never develop or be sustained following this offering. If an active market for our common stock does not develop or is not sustained, it may be difficult for you to sell shares you purchased in this offering at an attractive price, if at all.

The trading price of the shares of our common stock may be volatile, and purchasers of our common stock could incur substantial losses.

Our stock price may be 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;
- 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 will be influenced by the research and reports that equity research analysts publish about us and our business. We do not currently have, and may never obtain, research coverage by equity research analysts. Equity research analysts may elect not to provide research coverage of our common stock after the completion of this offering, and such lack of research coverage may adversely affect the market price of our common stock. In the event we do 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.

If you purchase shares of our common stock in this offering, you will suffer immediate dilution of your investment.

We expect the initial public offering price of our common stock to be substantially higher than the net tangible book value per share of our common stock. Therefore, if you purchase shares of our common stock in this offering, you will pay a price per share that substantially exceeds our pro forma as adjusted net tangible book value per share after this offering. Based on an assumed initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, you will experience immediate dilution of $10.58 per share, representing the difference between our pro forma as adjusted net tangible book value per share after this offering and the assumed initial public offering price.

In addition, as of September 30, 2013, we had outstanding stock options to purchase an aggregate of 1,173,287 shares of common stock at a weighted average exercise price of $1.24 per share and warrants to purchase an aggregate of 635,249 shares of common stock at a weighted average exercise price of $0.39 per share. To the extent these outstanding options and warrants are exercised, there will be further dilution to investors in this offering.

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

Sales of a substantial number of 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 following this offering, the market price of our common stock could decline significantly.

Upon the completion of this offering, we will have outstanding 14,555,496 shares of common stock, assuming no exercise of outstanding options or warrants. Of these shares, the 4,000,000 shares sold in this offering will be freely tradable and the remaining 10,555,496 additional shares of common stock will be available for sale in the public market beginning 180 days after the date of this prospectus following the expiration of lock-up agreements between some of our stockholders and the underwriters. The representatives of the underwriters may release these stockholders from their lock-up agreements with the underwriters at any time, which would allow for earlier sales of shares in the public market.

In addition, following the completion of this offering, we intend to file one or more registration statements on Form S-8 registering the issuance of approximately 2,350,000 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 on Form S-8 will be available for sale in the public market subject to vesting arrangements and exercise of options, the lock-up agreements described above and the restrictions of Rule 144 in the case of our affiliates.

Additionally, after this offering, the holders of an aggregate of 10,210,228 shares of our common stock and 635,249 shares of our common stock issuable upon the exercise of outstanding warrants, or their transferees, will

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 as they will be in effect following this offering 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 you and other stockholders. For example, our board of directors will have 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 will also contain other provisions that could have an anti-takeover effect, including:

- only one of our three classes of directors will be elected each year;
- stockholders will not be entitled to remove directors other than by a 66 2/3% vote and only for cause;
- stockholders will not be 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.

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.

Upon the completion of this offering, our executive officers, directors and current beneficial owners of 5% or more of our common stock and their respective affiliates will, in the aggregate, beneficially own approximately 72% of our outstanding common stock. Further, funds controlled by one investor, New Enterprise Associates, or NEA, will beneficially own approximately 54% of our common stock. Assuming an initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, if our 5% stockholders and their affiliated entities purchase all of the shares they have indicated an interest in purchasing in this offering, the number of shares of our common stock beneficially owned by our executive officers, directors and stockholders who owned more than 5% of our outstanding common stock before this offering will, in the aggregate, increase to approximately 75% of our common stock, and NEA's beneficial ownership will increase to approximately 57% of our common stock. As a result, NEA will be able to control, and these other persons, acting together, will be able to significantly influence, all 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.

Some of these persons or entities may have interests different than yours. For example, because many of these stockholders purchased their shares at prices substantially below the price at which shares are being sold in this offering and have held their shares for a longer period, they may be more interested in selling our company to an acquirer than other investors, or they may want us to pursue strategies that deviate from the interests of other stockholders.

We are an "emerging growth company," and as a result of the reduced disclosure and governance requirements applicable to emerging growth companies, our common stock may be less attractive to investors.

We are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, and we intend to take advantage of some of the exemptions from reporting requirements that are applicable to other public companies that are not emerging growth companies, including:

- being permitted to provide only two years of audited financial statements, in addition to any required unaudited interim financial statements, with correspondingly reduced "Management's Discussion and Analysis of Financial Condition and Results of Operations" disclosure;
- not being required to comply with the auditor attestation requirements in the assessment of our internal control over financial reporting;
- not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements;
- reduced disclosure obligations regarding executive compensation; and
- not being required to hold a non-binding advisory vote on executive compensation or obtain stockholder approval of any golden parachute payments not previously approved.

We cannot predict if investors will find our common stock less attractive because we will rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile. We may take advantage of these reporting exemptions until we are no longer an emerging growth company. We will remain an emerging growth company until the earlier of (1) the last day of the fiscal year (a) following the fifth anniversary of the completion of this offering, (b) in which we have total annual gross revenue of at least $1.0 billion or (c) in which we are deemed to be a large accelerated filer, which means the market value of our common stock that is held by non-affiliates exceeds $700 million as of the prior June 30th and (2) the date on which we have issued more than $1.0 billion in non-convertible debt during the prior three-year period.

Under Section 107(b) of the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have irrevocably elected not to avail ourselves of this exemption from new or revised accounting standards and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

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

After the completion of this offering, we will be subject to the reporting requirements of the Securities Exchange Act of 1934, the Sarbanes-Oxley Act 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 controls over financial reporting. Commencing with our fiscal year ending December 31, 2014, we must perform system and process evaluation and testing of our internal controls over financial reporting to allow management to report on the effectiveness of our internal controls over financial reporting in our Form 10-K filing for that year, as required by Section 404 of the Sarbanes-Oxley Act. This will require that we incur substantial additional professional fees and internal costs to expand our accounting and finance functions and that we expend significant management efforts. Prior to this offering, we have never been required to test our internal controls within a specified period, and, as a result, we may experience difficulty in meeting these reporting requirements in a timely manner.

We may discover weaknesses in our system of internal financial and accounting controls and procedures that could result in a material misstatement of our financial statements. 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 not able to comply with the requirements of Section 404 of the Sarbanes-Oxley Act in a timely manner, or if we are unable to maintain proper and effective internal controls, we may not be able to produce timely and

accurate financial statements. 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 will have broad discretion in the use of proceeds from this offering and may invest or spend the proceeds in ways with which you do not agree and in ways that may not increase the value of your investment.

We will have broad discretion over the use of proceeds from this offering. You may not agree with our decisions, and our use of the proceeds may not yield any return on your investment. We expect to use the net proceeds to us from this offering to conduct clinical trials of GMI-1271, to fund the research and development of our preclinical pipeline, including drug discovery, and for working capital and general corporate purposes. Our failure to apply the net proceeds from this offering effectively could compromise our ability to pursue our growth strategy and we might not be able to yield a significant return, if any, on our investment of these net proceeds. In addition, the net proceeds from this offering may not be sufficient for our anticipated uses, and we may need additional resources to progress our drug candidates to the stage we expect. You will not have the opportunity to influence our decisions on how to use our net proceeds from this offering.

Because we do not anticipate paying any cash dividends on our common stock in the foreseeable future, capital appreciation, if any, will be your sole source of gains and you may never receive a return on your investment.

You should not rely on an investment in our common stock to provide dividend income. 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. As a result, capital appreciation, if any, of our common stock will be your sole source of gain for the foreseeable future. Investors seeking cash dividends should not purchase our common stock.

We will 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 will incur significant additional legal, accounting and other costs. These additional 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 The NASDAQ Stock Market, 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.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS AND INDUSTRY DATA

This prospectus contains forward-looking statements that involve substantial risks and uncertainties. The forward-looking statements are contained principally in the sections entitled "Prospectus Summary," "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Business," but are also contained elsewhere in this prospectus. 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 prospectus, 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 ability to achieve anticipated milestones under our collaboration with Pfizer for our drug candidate GMI-1070;
- our planned clinical trials for our drug candidate GMI-1271;
- the timing of and our ability to obtain and maintain regulatory approvals for our drug candidates;
- the clinical utility of our drug candidates;
- 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; and
- our estimates regarding future revenues, expenses and needs for additional financing.

You should refer to the "Risk Factors" section of this prospectus 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 prospectus 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 read this prospectus and the documents that we reference in this prospectus and have filed as exhibits to the registration statement, of which this prospectus is a part, completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of our forward-looking statements by these cautionary statements.

This prospectus includes statistical and other industry and market data that we obtained from industry publications and research, surveys and studies conducted by third parties. Industry publications and third party research, surveys and studies generally indicate that their information has been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information.

USE OF PROCEEDS

We estimate that the net proceeds from our issuance and sale of 4,000,000 shares of our common stock in this offering will be approximately $53.3 million, or approximately $61.7 million if the underwriters exercise their option to purchase additional shares of common stock in full, based upon an assumed initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

Each $1.00 increase or decrease in the assumed initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease the net proceeds to us from this offering by approximately $3.7 million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same.

We currently estimate that we will use the net proceeds from this offering as follows:

- approximately $35.0 million to conduct planned Phase 1 and Phase 1/2 clinical trials of GMI-1271;
- approximately $15.0 million to fund the research and development of our preclinical pipeline, including drug discovery; and
- the remainder for working capital and other general corporate purposes.

These expected uses represent our intentions based upon our current plans and business conditions, which could change in the future as our plans and business conditions evolve. The amounts and timing of our actual expenditures may vary significantly depending on numerous factors, including the progress of our development, the status of and results from clinical trials, as well as any new collaborations that we may enter into with third parties for our drug candidates, and any unforeseen cash needs.

As a result, our management will have broad discretion in the application of the net proceeds from this offering, and investors will be relying on the judgment of our management regarding the application of the net proceeds from this offering. The timing and amount of our actual expenditures will be based on many factors, including cash flows from operations and the anticipated growth of our business. Pending these uses, we plan to invest these net proceeds in short-term, interest bearing obligations, investment-grade instruments, certificates of deposit or direct or guaranteed obligations of the United States. The goal with respect to the investment of these net proceeds is capital preservation and liquidity so that such funds are readily available to fund our operations.

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.

CAPITALIZATION

The following table sets forth our cash and cash equivalents and our capitalization as of June 30, 2013:

- on an actual basis;
- on a pro forma basis to give effect to the conversion of the outstanding shares of our convertible preferred stock into an aggregate of 9,305,359 shares of our common stock, which will occur automatically upon the completion of this offering; and
- on a pro forma as adjusted basis to give further effect to our sale of 4,000,000 shares of common stock in this offering at an assumed initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The following information is illustrative only of our cash and capitalization following the completion of this offering, and will change based on the actual initial public offering price and other terms of this offering determined at pricing. You should read this table together with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and the related notes appearing elsewhere in this prospectus.

	AS OF JUNE 30, 2013		
(in thousands, except share and per share data)	**ACTUAL**	**PRO FORMA**	**PRO FORMA AS ADJUSTED**
Cash and cash equivalents	$ 10,778	$ 10,778	$ 64,078
Stockholders' equity:			
Preferred stock, $0.001 per share; no shares authorized, issued or outstanding, actual or pro forma; 5,000,000 shares authorized, no shares issued or outstanding, pro forma as adjusted	$ —	$ —	$ —
Series A-1 convertible preferred stock, $0.001 par value; 60,342,745 shares authorized, 30,726,326 shares issued and outstanding, actual; no shares authorized, issued or outstanding, pro forma and pro forma as adjusted	31	—	—
Common stock, $0.001 par value; 70,258,276 shares authorized, 947,211 shares issued and outstanding, actual; 70,258,276 shares authorized, 10,252,570 shares issued and outstanding, pro forma; 100,000,000 shares authorized, 14,252,570 shares issued and outstanding, pro forma as adjusted	3	10	14
Additional paid-in-capital	65,401	65,425	118,721
Accumulated deficit	(55,697)	(55,697)	(55,697)
Total stockholders' equity	9,738	9,738	63,038
Total capitalization	$ 9,738	$ 9,738	$ 63,038

Each $1.00 increase or decrease in the assumed initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease the pro forma as adjusted amount of each of cash and cash equivalents, additional paid-in capital, total stockholders' equity and total capitalization by approximately $3.7 million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same.

The number of shares of common stock outstanding in the table above does not include:

- 1,476,892 shares of our common stock issuable upon the exercise of stock options outstanding under our 2003 stock incentive plan as of June 30, 2013, at a weighted average exercise price of $1.22 per share;
- 635,249 shares of our common stock issuable upon the exercise of warrants outstanding as of June 30, 2013, at a weighted average exercise price of $0.39 per share; and
- an aggregate of approximately 1,175,000 shares of our common stock to be reserved for future issuance under our equity incentive plans.

DILUTION

If you invest in our common stock in this offering, your interest will be diluted to the extent of the difference between the initial public offering price per share and the pro forma as adjusted net tangible book value per share of our common stock immediately after this offering. Net tangible book value per share is determined by dividing our total tangible assets less total liabilities by the number of outstanding shares of our common stock.

As of June 30, 2013, we had a net tangible book value of $9.7 million, or $10.28 per share of common stock. On a pro forma basis, after giving effect to the conversion of the outstanding shares of our convertible preferred stock into 9,305,359 shares of our common stock upon the completion of this offering, our net tangible book value would have been $9.7 million, or $0.95 per share of common stock.

Investors participating in this offering will incur immediate and substantial dilution. After giving effect to the issuance and sale of 4,000,000 shares of our common stock in this offering at an assumed initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us, our pro forma as adjusted net tangible book value as of June 30, 2013 would have been approximately $63.0 million, or approximately $4.42 per share of common stock. This represents an immediate increase in the pro forma net tangible book value of $3.47 per share to existing stockholders, and an immediate dilution in the pro forma net tangible book value of $10.58 per share to investors purchasing shares of our common stock in this offering. The following table illustrates this per share dilution:

Assumed initial public offering price per share		$15.00
Actual net tangible book value per share as of June 30, 2013	$10.28	
Decrease per share attributable to conversion of convertible preferred stock	(9.33)	
Pro forma net tangible book value per share before this offering	0.95	
Increase in pro forma net tangible book value per share attributable to new investors participating in this offering	3.47	
Pro forma as adjusted net tangible book value per share after this offering		4.42
Dilution per share to investors participating in this offering		$10.58

The dilution information discussed above is illustrative only and will change based on the actual initial public offering price and other terms of this offering determined at pricing. Each $1.00 increase or decrease in the assumed initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease our pro forma as adjusted net tangible book value by approximately $3.7 million, or approximately $0.26 per share, and the dilution per share to investors participating in this offering by approximately $0.74 per share, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same.

If the underwriters exercise their option in full to purchase 600,000 additional shares of common stock in this offering, the pro forma as adjusted net tangible book value per share after the offering would be $4.81 per share, the increase in the pro forma net tangible book value per share to existing stockholders would be $3.86 per share and the dilution to new investors purchasing common stock in this offering would be $10.19 per share.

The following table sets forth as of June 30, 2013, on the pro forma basis described above, the differences between the number of shares of common stock purchased from us, the total consideration paid and the weighted average price per share paid by existing stockholders and by investors purchasing shares of our common stock in this offering at an assumed initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page on this prospectus, before deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us:

	SHARES PURCHASED		TOTAL CONSIDERATION		WEIGHTED AVERAGE PRICE PER SHARE
	NUMBER	PERCENT	AMOUNT	PERCENT	
Existing stockholders	10,252,570	72%	$ 64,104,057	52%	$ 6.25
New investors	4,000,000	28	60,000,000	48	15.00
Total	14,252,570	100%	$124,104,057	100%	

Each $1.00 increase or decrease in the assumed initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease the total consideration paid by new investors by $4.0 million, and increase or decrease the percent of total consideration paid by new investors by approximately two percentage points, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same.

The table above also excludes:

- 1,476,892 shares of our common stock issuable upon the exercise of stock options outstanding under our 2003 stock incentive plan as of June 30, 2013, at a weighted average exercise price of $1.22 per share;
- 635,249 shares of our common stock issuable upon the exercise of warrants outstanding as of June 30, 2013, at a weighted average exercise price of $0.39 per share; and
- an aggregate of approximately 1,175,000 shares of our common stock to be reserved for future issuance under our equity incentive plans.

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

Certain of our existing investors and their affiliated entities, as well as other third parties with whom we have a preexisting business relationship, have indicated an interest in purchasing an aggregate of up to approximately $14.0 million in shares of our common stock in this offering at the initial public offering price. Assuming an initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, these entities would purchase an aggregate of up to approximately 933,333 of the 4,000,000 shares in this offering based on these indications of interest. However, because indications of interest are not binding agreements or commitments to purchase, these entities may determine to purchase fewer shares than they indicate an interest in purchasing or not to purchase any shares in this offering. It is also possible that these entities could indicate an interest in purchasing more shares of our common stock. In addition, the underwriters could determine to sell fewer shares to any of these entities than the entities indicate an interest in purchasing or not to sell any shares to these entities. The foregoing discussion and tables do not reflect any potential purchases by these entities or their affiliated entities.

SELECTED FINANCIAL DATA

The following tables set forth selected financial data of GlycoMimetics, Inc. for the periods indicated. The following selected financial data for the years ended December 31, 2011 and 2012 and the selected balance sheet data as of December 31, 2011 and 2012 are derived from our audited financial statements, which have been audited by Ernst & Young LLP, an independent registered public accounting firm, appearing elsewhere in this prospectus. The data should be read together with "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 prospectus. The selected statement of operations data for the six months ended June 30, 2012 and 2013 and for the period from May 21, 2003 (date of inception) through June 30, 2013 and the selected balance sheet data as of June 30, 2013 are derived from unaudited financial statements appearing elsewhere in this prospectus.

The unaudited financial statements include all adjustments, consisting of normal recurring accruals, that management considers necessary for a fair presentation of the financial position and the results of operations for these periods. Our historical results are not necessarily indicative of the results to be expected in the future, and our operating results for the six months ended June 30, 2013 are not necessarily indicative of the results that may be expected for the entire year ending December 31, 2013.

	YEAR ENDED DECEMBER 31,		SIX MONTHS ENDED JUNE 30,		PERIOD FROM MAY 21, 2003 (DATE OF INCEPTION) TO JUNE 30,
(in thousands, except share and per share data)	2011	2012	2012	2013	2013
Statement of Operations Data:					
Revenue	$ 3,814	$ 15,257	$ 7,542	$ 3,863	$ 23,465
Costs and expenses:					
Research and development	7,799	9,438	4,256	5,624	64,723
General and administrative	2,100	2,157	1,090	1,263	14,233
Total costs and expenses	9,899	11,595	5,346	6,887	78,956
Income (loss) from operations	(6,085)	3,662	2,196	(3,024)	(55,491)
Other income (expense):					
Interest income (expense), net	8	21	12	1	(172)
Other expense, net	(36)	(27)	(13)	(4)	(34)
Total other expense	(28)	(6)	(1)	(3)	(206)
Net income (loss)	$ (6,113)	$ 3,656	$ 2,195	$ (3,027)	$ (55,697)
Net income (loss) per share of common stock—basic	$ (6.58)	$ 3.93	$ 2.36	$ (3.23)	
Net income (loss) per share of common stock—diluted	$ (6.58)	$ 0.33	$ 0.20	$ (3.23)	
Weighted average shares outstanding, basic	928,604	929,619	929,619	937,590	
Weighted average shares outstanding, diluted	928,604	11,016,532	11,018,521	937,590	
Pro forma net income (loss) per share—basic		$ 0.36		$ (0.30)	
Pro forma net income (loss) per share—diluted		$ 0.33		$ (0.30)	
Pro forma weighted average shares outstanding—basic		10,234,987		10,242,959	
Pro forma weighted average shares outstanding—diluted		11,016,532		10,242,959	

(in thousands)	AS OF DECEMBER 31, 2011	AS OF DECEMBER 31, 2012	AS OF JUNE 30, 2013
Balance Sheet Data:			
Cash and cash equivalents	$28,172	$17,373	$10,778
Total assets	28,909	18,420	11,554
Total liabilities	20,452	5,891	1,815
Total stockholders' equity	8,457	12,528	9,738

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 financial statements and the related notes and other financial information included elsewhere in this prospectus. Some of the information contained in this discussion and analysis or set forth elsewhere in this prospectus, including information with respect to our plans and strategy for our business, includes forward-looking statements that involve risks and uncertainties. You should review the "Risk Factors" section of this prospectus 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.

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. Glycomimetics are molecules that mimic the structure of carbohydrates involved in important biological processes. Using our expertise in carbohydrate chemistry and knowledge of carbohydrate biology, we are developing a pipeline of proprietary glycomimetics that 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 initial efforts on drug candidates for rare diseases that we believe will qualify for orphan drug designation. We are developing our lead drug candidate, GMI-1070, for the treatment of VOC. In October 2011, we entered into a license agreement with Pfizer under which we were responsible for the clinical development of GMI-1070 through the completion of a Phase 2 clinical trial. Following our completion of the Phase 2 clinical trial in April 2013, Pfizer is now responsible for all further clinical development, regulatory approval and potential commercialization of GMI-1070 for all indications and Pfizer has commercial rights to GMI-1070 worldwide.

Building on our experience with GMI-1070, we are developing a pipeline of other glycomimetic drug candidates. Our second most advanced drug candidate, GMI-1271, is a specific E-selectin inhibitor, which we are developing to be used in combination with chemotherapy to treat patients with acute myeloid leukemia, or AML, and potentially other hematologic cancers. We are also developing a pipeline of other preclinical drug candidates based on our expertise in carbohydrate chemistry. We have retained the worldwide development and commercialization rights to all of our drug candidates other than GMI-1070.

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, beginning in 2008, conducting clinical trials of GMI-1070. To date, we have financed our operations primarily through private placements of our securities and an upfront payment that we received in 2011 under our collaboration with Pfizer. We have no products currently available for sale, and substantially all of our revenue to date has been revenue from the upfront payment from Pfizer, although we have received nominal amounts of revenue under research grants. Since our inception and through June 30, 2013, we have raised an aggregate of $86.6 million to fund our operations, of which $22.5 million was an upfront payment under our collaboration with Pfizer and $64.1 million was from the sale of our convertible promissory notes and convertible preferred stock.

Since inception, we have incurred significant operating losses. Although we generated net income of $3.7 million in 2012 as a result of recognizing $15.0 million of the $22.5 million upfront payment Pfizer made to us when we entered into our agreement with them as revenue during the year, our net loss was $3.0 million for the six months ended June 30, 2013, and we expect to continue to incur significant expenses and operating losses over at least the next several years. As of June 30, 2013, we had an accumulated deficit of $55.7 million. Our net losses may fluctuate significantly from quarter to quarter and year to year, depending on the timing of our clinical trials, the receipt of milestone payments, if any, under our collaboration with Pfizer, and our expenditures on other research and development activities. We anticipate that our expenses will increase substantially as we:

- prepare to file an IND and then initiate our planned Phase 1 and Phase 1/2 clinical trials of GMI-1271, beginning in 2014;

- 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 other than GMI-1070 that successfully complete clinical trials;
- ultimately establish a sales, marketing and distribution infrastructure and scale up external manufacturing capabilities to commercialize any drug candidates other than GMI-1070 for which we may obtain regulatory approval;
- maintain, expand and protect our intellectual property portfolio;
- hire additional clinical, quality control 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 in addition to the net proceeds from this offering. We may obtain additional financing in the future through the issuance of our common stock, through other equity or debt financings 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 the net proceeds from this offering and our existing cash and cash equivalents, together with interest thereon, will be sufficient to fund our operations for at least the next 12 months. 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 with Pfizer

In October 2011, we entered into the license agreement with Pfizer under which we granted Pfizer an exclusive worldwide license to develop and commercialize products containing GMI-1070 for all fields and uses. The license also covers specified back-up compounds along with modifications of and improvements to GMI-1070 that meet defined chemical properties. Pfizer is required to use commercially reasonable efforts, at its expense, to develop, obtain regulatory approval for and commercialize GMI-1070 for sickle cell disease in the United States. Under the terms of the agreement, we received a $22.5 million upfront payment. We are also eligible to earn potential milestone payments of up to $115.0 million upon the achievement of specified development milestones, including the dosing of the first patients in Phase 3 clinical trials for up to two indications and the first commercial sale of a licensed product in the United States and selected European countries for up to two indications, up to $70.0 million upon the achievement of specified regulatory milestones, including the acceptance of our filings for regulatory approval by regulatory authorities in the United States and Europe for up to two indications, and up to $135.0 million upon the achievement of specified levels of annual net sales of licensed products. We are also eligible to receive tiered royalties for each licensed product, with percentages ranging from the low double digits to the low teens, based on net sales worldwide, subject to reductions in specified circumstances.

The first potential milestone payment that we might be entitled to receive under the Pfizer agreement is $35.0 million upon the initiation of dosing of the first patient in a Phase 3 trial of GMI-1070 by Pfizer. In some specified circumstances, if Pfizer has not initiated dosing by April 2014, Pfizer is obligated to make an advance payment to us of $15.0 million against the first milestone payment.

Pfizer has advised us through the joint steering committee established under the agreement that they intend to begin enrolling patients for a Phase 3 trial of GMI-1070 in mid-2014, pending approval through Pfizer's governance process. Pfizer has also informed us through the joint steering committee that activities necessary to support the initiation of a Phase 3 trial in mid-2014 are currently underway pending approval through Pfizer's governance process. The steps that Pfizer has taken and is taking to prepare for a Phase 3 trial include manufacturing of the drug substance to be used in the Phase 3 trial, completion of toxicology studies that would support a Phase 3 trial and an NDA, engagement with regulatory authorities in the United States and overseas to discuss plans for the conduct of a Phase 3 trial, planning and preparation for a so-called TQTc clinical trial to evaluate cardiac safety that would support a Phase 3 trial, contracting with a CRO to provide services in the conduct of a Phase 3 trial and convening clinical investigators in the United States and overseas to discuss plans for a Phase 3 trial.

Although Pfizer has taken and is taking a number of steps to prepare for Phase 3 initiation in mid-2014, there can be no assurance that Pfizer will proceed on that schedule, or at all. There also can be no assurance that, if Pfizer does not initiate dosing by April 2014, the conditions to its obligation to make the $35.0 million milestone payment or the $15.0 million advance will be satisfied.

We have a research services agreement with the University of Basel, or the University, under which University personnel have performed research services for us on an as-requested basis since 2004. The agreement includes one-year research terms, and we have no affirmative obligation to purchase any minimum amount of services in any year beyond what we commit to at the beginning of each term, if any. For each of the research terms ended in February 2012 and 2013, we paid the University approximately $150,000. As part of the original consideration for entering into this agreement, we granted to the University the right to receive payments from us under specified circumstances. If we receive any future milestone payments or royalties from Pfizer with respect to GMI-1070, we have agreed to pay 10% of those amounts 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 prospectus, we believe the following are the critical accounting policies used in the preparation of our financial statements that require significant estimates and judgments.

Revenue Recognition

Research Grant Contracts

From time to time, we are awarded reimbursement contracts for services and development grant contracts with government and non-government entities and philanthropic organizations. Under these contracts, we are typically reimbursed for our costs in connection with specific research or development activities. We recognize revenue as and to the extent we incur costs in connection with performance under these arrangements.

License and Collaboration Agreements

We have entered into a license agreement with Pfizer. Under the agreement, Pfizer made a nonrefundable $22.5 million upfront payment to us in 2011 and may become obligated to make potential milestone payments to us upon the achievement of significant clinical development milestones, regulatory approvals and sales-based events. The agreement also contemplates royalty payments to us on any future net sales of GMI-1070 worldwide.

Collaborative research and development agreements can provide for one or more of upfront license fees, research payments and milestone payments. Agreements with multiple components, such as deliverables or similar items, are referred to as multi-element revenue arrangements and are evaluated according to the provisions of Accounting Standards Codification, or ASC, Topic 605-25, *Revenue Recognition—Multiple-Element Arrangements*, which we adopted effective as of January 1, 2011, to determine whether the deliverables can be separated into more than one unit of accounting. An item can generally be considered to be a separate unit of accounting if both of the following criteria are met:

- the delivered item(s) has value to our customer on a standalone basis; and

- the arrangement includes a general right of return relative to the delivered item(s), and delivery or performance of the undelivered item(s) is considered probable and substantially in our control.

Items that cannot be divided into separate units are combined with other units of accounting, as appropriate. Consideration received is then allocated among the separate units based on a selling price hierarchy. The selling price hierarchy for each deliverable is based on vendor-specific objective evidence, or VSOE, if it is available; third-party evidence of selling price, or TPE, if VSOE is not available; or an estimated selling price, if neither VSOE nor TPE is available.

Our license agreement with Pfizer represents a multiple-element revenue arrangement. To account for this transaction, we determined the elements, or deliverables, included in the arrangement and allocated arrangement consideration to the various elements based on each element's relative selling price. The identification of individual elements in a multiple-element arrangement and the estimation of the selling price of each element involve significant judgment, including consideration as to whether each delivered element has standalone value to our collaborator.

The primary deliverable under our license arrangement with Pfizer is an exclusive worldwide license to GMI-1070, which is currently being developed to treat people experiencing VOC. The arrangement also includes deliverables related to research and preclinical development activities to be performed by us on Pfizer's behalf and our participation on a joint steering committee. We concluded that these deliverables should be accounted for as a single unit of accounting, and we therefore determined to recognize the upfront payment of $22.5 million as revenue over the expected development period of 1.5 years, which was the period over which we expected to provide our research and development services and participate on the joint steering committee under the arrangement. Our determination of the appropriate length of the period over which to recognize revenue was consistent with the research plan agreed to with Pfizer.

In reaching this conclusion, we evaluated whether the license to GMI-1070 has standalone value to Pfizer. Factors we considered in determining whether the license has standalone value included whether or not Pfizer can use the license for its intended purpose without the receipt of the remaining deliverables, the value of the license without the undelivered items, Pfizer's or other vendors' ability to provide the undelivered items, the proprietary nature of the license and know-how, and the availability of our glycomimetics expertise in the general marketplace. Based on all relevant facts and circumstances and, most significantly, on the proprietary nature of our platform and the related proprietary nature of our research services, we concluded that standalone value does not exist for the license and, therefore, the license is not a separate unit of accounting under the collaboration and should be combined with the research and development services we are obligated to provide, including our participation on the joint steering committee.

We also evaluated whether our participation on the joint steering committee is a substantive obligation and therefore a separate unit of accounting. The joint steering committee is responsible for overseeing the general working relationships, determining the protocols to be followed in the research and development performed and evaluating the results from the continued development of the drug candidate. The factors we considered in determining if our participation on the joint steering committee is a substantive obligation included:

- which party negotiated or requested the steering committee;
- how frequently the steering committee meets;
- whether or not there are any penalties or other recourse if we do not attend the steering committee meetings;
- which party has decision-making authority on the steering committee; and
- whether or not Pfizer has the requisite experience and expertise associated with the research and development of GMI-1070.

We considered that we may terminate our participation on the joint steering committee at any point during the agreement. Further, the estimated selling price of our obligation was not material to the overall license agreement. Based on all relevant facts and circumstances, we concluded that our participation on the joint steering committee is not a substantive obligation and, therefore, is not a separate unit of accounting under the collaboration.

We were not able to establish VSOE or TPE for the separate unit deliverables under the arrangement with Pfizer, as we do not have a history of entering into such arrangements or selling the individual deliverables within such arrangements separately. Accordingly, we determined that the selling price for the deliverables under the Pfizer license agreement should be determined using the best estimate of selling price. The process of determining the best estimate of selling price involved significant judgment on our part and included consideration of multiple factors, including market conditions and company-specific factors, such as those factors contemplated in negotiating the agreement and internally developed models that included assumptions related to market opportunity, discounted cash flows, estimated development costs, probability of success and the time needed to commercialize a drug candidate pursuant to the license. In validating the best estimate of selling price, we considered whether changes in key assumptions used to determine the best estimate of selling price would have a significant effect on the allocation of the arrangement consideration between the multiple deliverables.

Our license agreement with Pfizer also includes contingent milestone payments related to specified development, regulatory and commercial milestones. We adopted ASC Topic 605-28, *Revenue Recognition—Milestone Method*, effective as of January 1, 2011. Under this guidance, we may recognize revenue contingent upon the achievement of a substantive milestone in its entirety in the period the milestone is achieved. Milestones are considered substantive if all of the following conditions are met:

- the milestone is nonrefundable;
- achievement of the milestone was not reasonably assured at the inception of the arrangement;
- substantive effort is involved to achieve the milestone;
- the amount of the milestone appears reasonable in relation to the effort expended or the risk associated with achievement of the milestone; and
- a reasonable amount of time passes between the upfront license payment and the first milestone payment, as well as between each subsequent milestone payment.

Our determination as to whether a payment meets these five conditions involves management's judgment. If any of these conditions are not met, the resulting payment would not be considered a substantive milestone and would instead be considered part of the consideration for the single unit of accounting. In addition, if we determine that one milestone is not substantive, it could prevent us from concluding that subsequent milestones are substantive and, as a result, any additional milestone payments could also be considered part of the consideration for the single unit of accounting and would be recognized as revenue as those performance obligations are performed under either the proportional performance method or the straight-line method.

We have evaluated whether each milestone under the Pfizer arrangement is substantive and at risk to both parties on the basis of the contingent nature of that milestone. This evaluation included an assessment of whether:

- the consideration is commensurate with either our performance to achieve the milestone or the enhancement of the value of the delivered item(s) as a result of a specific outcome resulting from our performance to achieve the milestone;
- the consideration relates solely to past performance; and
- the consideration is reasonable relative to all of the deliverables and payment terms within the arrangement.

Based on this evaluation, we concluded that the milestones under the Pfizer collaboration are substantive, due to the uncertainty of future clinical development success and the additional effort and time that is expected before the milestones could be achieved. Accordingly, each milestone will be recognized as revenue upon its achievement, assuming all other revenue recognition criteria are met.

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, less estimated forfeitures, on a straight-line basis over the requisite service period of the awards, which generally equals the vesting period. We have selected the Black-Scholes 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:

- the expected life of the stock option award;
- the expected volatility of the underlying common stock; and
- the fair value of our common stock determined on the date of grant.

The following table summarizes the assumptions we used for estimating the fair value of stock options granted to employees for the periods indicated:

	YEAR ENDED DECEMBER 31,		SIX MONTHS ENDED JUNE 30,	
	2011	2012	2012	2013
Risk-free interest rate	1.31%	0.60%	0.60%	0.56%
Expected life of option term	6.25 years	6.25 years	6.25 years	6.25 years
Volatility	102.41%	94.77%	94.77%	78.07%
Estimated dividend yield	0%	0%	0%	0%
Weighted average grant date fair value	$0.89	$1.52	$1.52	$2.51

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. 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. 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 is based on the historical volatilities of a peer group of comparable publicly traded companies with drug candidates in similar stages of development.

The amount of stock-based compensation expense recognized during a period is based on the value of the portion of the awards that are ultimately expected to vest. Our estimate of pre-vesting forfeitures, or forfeiture rate, is based on our analysis of historical behavior by stock option holders. The estimated forfeiture rate is applied to the total estimated fair value of the awards, as derived from the Black-Scholes model, to compute the stock-based compensation expense, net of pre-vesting forfeitures, to be recognized in our statements of operations. We estimate forfeitures for employee grants at the time of grant and revise the estimates, if necessary, in subsequent periods if actual forfeitures differ from those estimates.

Our assumptions for a particular period may differ from those used in prior periods, and changes in the assumptions may have a significant impact on the fair value of future equity awards, which could have a material impact on our consolidated financial statements. We grant stock options with exercise prices equal to the estimated fair value of our common stock on the date of grant.

Based upon an assumed initial public offering price of $15.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, the aggregate intrinsic value of outstanding options to purchase shares of our common stock as of June 30, 2013 was $20.4 million, of which $17.2 million related to vested options and $3.2 million related to unvested options.

The following table summarizes, by grant date, the number of shares of common stock subject to stock options granted from January 1, 2012 through the date of this prospectus, as well as the associated per share exercise price and the estimated fair value per share of our common stock on the grant date.

GRANT DATE	NUMBER OF SHARES UNDERLYING OPTIONS GRANTED	EXERCISE PRICE PER SHARE	ESTIMATED FAIR VALUE PER SHARE	PER SHARE GRANT DATE INTRINSIC VALUE PER OPTION
March 20, 2012	75,070	$1.98	$1.98	$—
July 17, 2012	36,901	1.98	1.98	—
December 19, 2012	24,606	1.98	1.98	—
April 9, 2013	9,296	3.73	3.73	—

Determination of the Fair Value of Common Stock on Grant Dates

We are a private company with no active public market for our common stock. Therefore, we have periodically determined for financial reporting purposes the estimated per share fair value of our common stock at various dates using contemporaneous valuations performed in accordance with the guidance outlined in the American Institute of Certified Public Accountants Practice Aid, *Valuation of Privately-Held Company Equity Securities Issued as Compensation*, also known as the Practice Aid. We performed these contemporaneous valuations as of January 1, 2012 and April 1, 2013. In conducting the contemporaneous valuations, we considered all objective and subjective factors that we believed to be relevant for each valuation conducted, including our best estimate of our business condition, prospects and operating performance at each valuation date. Within the contemporaneous valuations performed, a range of factors, assumptions and methodologies were used. The significant factors included:

- our results of operations, financial position and the status of research and development efforts;
- the composition of, and changes to, our management team and board of directors;
- the lack of liquidity of our common stock as a private company;
- our stage of development and business strategy and the material risks related to our business and industry;
- our discounted future cash flows, based on our projected operating results;
- the potential impact on our common stock of liquidation preference rights of our convertible preferred stock;
- the achievement of enterprise milestones, including entering into collaboration and license agreements;
- the valuation of publicly traded companies in the life sciences and biotechnology industries, as well as recently completed mergers and acquisitions of peer companies;
- any external market conditions affecting the life sciences and biotechnology industries;
- the likelihood of achieving a liquidity event for the holders of our common stock and stock options, such as an initial public offering, or IPO, or a sale of our company, given prevailing market conditions;
- the state of the IPO market for similarly situated privately held biotechnology companies; and
- any recent contemporaneous valuations prepared in accordance with methodologies outlined in the Practice Aid.

The dates of our contemporaneous valuations have not always coincided with the dates of our stock-based compensation grants. In determining the exercise prices of the stock options granted, our board of directors considered, among other things, the most recent contemporaneous valuations of our common stock and our assessment of additional objective and subjective factors we believed were relevant as of the grant date. The additional factors considered when determining any changes in fair value between the most recent contemporaneous valuation and the grant dates included, when available, the prices paid in recent transactions involving our equity securities, as well as our stage of development, our operating and financial performance and current business conditions.

There are significant judgments and estimates inherent in the determination of fair value of our common stock, including the contemporaneous valuations. These judgments and estimates include assumptions regarding our future operating performance, the time to completing an IPO or other liquidity event and the determinations of the appropriate valuation methods. If we had made different assumptions, our stock-based compensation expense, net income (loss) and net income (loss) per common share could have been significantly different.

Common Stock Valuation Methodologies

The Practice Aid describes market, income and cost approaches to valuing equity securities, each of which approaches is summarized below.

Market Approach

The market approach uses similar companies or transactions in the marketplace. When using the guideline company method of the market approach in determining the fair value of common stock, a company identifies companies similar to its business and uses these guideline companies to develop relevant market multiples and ratios, which are then applied to its financial forecasts to create an indication of total equity value. When using the similar transaction methodology of the market approach in determining the fair value of common stock, a company uses publicly disclosed data from arm's-length transactions involving similar companies to develop relationships or value measures between the prices paid for the target companies and the underlying financial performance of those companies. These value measures are then applied to a company's applicable operating data to create an indication of total equity value.

Income Approach

For the income approach, a company typically uses the discounted free cash flow method, which is based on the premise that equity value as of the respective valuation date is equal to the projected future free cash flows and expected terminal value of the business, discounted by a required rate of return that investors would demand given the risks of ownership and the risks associated with achieving the stream of projected future free cash flows.

Cost Approach

The cost approach involves identifying a company's significant tangible assets, estimating the individual current market values of each and then totaling them to derive the value of the business as a whole. A company can use the cost approach to value its adjusted net assets available to common stockholders if it were forced to liquidate its assets if its business model failed and the company was unable to raise additional financing.

Based on our stage of development, as described by the Practice Aid, and the fact that we had not raised any financing since October 2009, we exclusively used the income approach in determining the fair value of our common stock as of each grant date.

Methods Used to Allocate Our Enterprise Value to Classes of Securities

In accordance with the Practice Aid, we considered the various methods for allocating the enterprise value across our classes and series of capital stock to determine the fair value of our common stock at each valuation date. The methods we considered consisted of:

Current Value Method

Under the current value method, once the fair value of the enterprise is established, the value is allocated to the various series of preferred and common stock based on their respective seniority, liquidation preferences or conversion values, whichever is greatest.

Option Pricing Method

Under the option pricing method, or OPM, shares are valued by creating a series of theoretical call options with exercise prices based on the liquidation preferences and conversion terms of each equity class. The values of the preferred and common stock are inferred by analyzing these options.

Probability-Weighted Expected Return Method

The probability-weighted expected return method, or PWERM, is a scenario-based analysis that estimates the value per share based on the probability-weighted present value of expected future investment returns, considering each of the possible outcomes available to us, as well as the economic and control rights of each share class.

For each of the contemporaneous valuations described below, we used the OPM to determine the estimated fair value of our common stock.

January 1, 2012 Valuation

In October 2011, we entered into our collaboration with Pfizer and, in light of the significance of that transaction, deemed it appropriate to obtain a contemporaneous valuation of our common stock as of January 1, 2012. Because we had detailed financial projections available that were based on assumptions in light of the Pfizer transaction and the potential milestone payments we might receive under that arrangement, we used those projections to estimate our future cash flows. We then discounted those projected cash flows back to their present value, using an assumed risk-adjusted cost of capital of approximately 22%, to estimate our enterprise value.

We then allocated the estimated enterprise value to the classes of our capital stock using the OPM. The OPM used in this analysis assumed a time to liquidity event of between three and four years. The OPM also assumed an annual volatility rate of between 78% and 88% for the various estimates of time to liquidity. Our estimates of volatility were based on historical stock price trading data for a group of seven biotechnology companies we considered comparable to us.

Using the OPM, we estimated that the fully marketable, minority basis value of the common stock was between $2.84 and $2.97 per share. We then applied a discount for lack of marketability, or DLOM, of between 31% and 39% for the various estimates of time to a liquidity event. This DLOM was determined based on an Asian/average protective put option analysis. Based on this methodology, we concluded that our common stock had a fair value of $1.98 per share as of January 1, 2012.

2012 Option Grants

Our board of directors granted options to purchase common stock on March 20, 2012, July 17, 2012 and December 19, 2012, with each option having an exercise price of $1.98 per share. In establishing this exercise price, our board of directors considered input from management, including the valuation we conducted of our common stock as of January 1, 2012, as well as the objective and subjective factors outlined above. At each grant date, our board of directors considered the events and circumstances most likely to affect the value of our common stock that occurred between January 2012 and the grant date, and whether those events and circumstances were part of the assumptions used in the January 2012 valuation. Our board of directors concluded that there were no events or circumstances that occurred between January 2012 and December 2012 that were indicative of a significant change in the fair value of our common stock. During the year, we continued to make progress on our Phase 2 clinical trial of GMI-1070, but we did not complete enrollment of patients in this trial until January 2013. Based on these factors, our board of directors determined that the fair value of our common stock at each grant date during 2012 was $1.98 per share.

April 1, 2013 Valuation

In April 2013, we completed our Phase 2 clinical trial of GMI-1070 and announced top-line results. In light of the significance of that development, we deemed it appropriate to obtain a contemporaneous valuation of our common stock as of April 1, 2013. In this valuation, we used the same methodology as we had used for our January 1, 2012 valuation, but with updated assumptions based upon the completion of the Phase 2 clinical trial. We continued to apply an assumed risk-adjusted cost of capital of approximately 22% to our projected cash flows in order to estimate our enterprise value.

We then allocated the estimated enterprise value to the classes of our capital stock using the OPM. The OPM used in this analysis assumed a time to liquidity event of between 1.5 and 2.9 years. The OPM also assumed an annual volatility rate of between 69% and 71% for the estimates of time to liquidity. Our estimates of volatility were based on historical stock price trading data for the same group of seven biotechnology companies we considered comparable to us in our January 1, 2012 valuation.

Using the OPM, we estimated that the fully marketable, minority basis value of the common stock was between $4.89 and $4.99 per share. We then applied a DLOM of between 20% and 28% for the various estimates of time to a liquidity event. We lowered the DLOM from that used in the prior valuation because we believed that we were moving closer to a potential liquidity event. Based on this methodology, we concluded that our common stock had a fair value of $3.73 per share as of April 1, 2013. The primary reason for the increase in the estimated fair value of our common stock from January 1, 2012 to April 1, 2013 was the increased probability of receiving milestone payments under our Pfizer collaboration as a result of having completed the Phase 2 clinical trial.

2013 Option Grants

Our board of directors granted options to purchase common stock on April 9, 2013, with each option having an exercise price of $3.73 per share. In establishing this exercise price, our board of directors considered input from management, giving substantial weight to the valuation we conducted of our common stock as of April 1, 2013. Our board of directors concluded that there were no events or circumstances that occurred between April 1, 2013 and April 9, 2013 that were indicative of a change in the fair value of our common stock and therefore determined that the fair value of our common stock on that grant date was $3.73 per share.

Determination of Estimated Offering Price

In July 2013, we selected underwriters for this offering. The midpoint of the preliminary range for this offering as determined by us and the underwriters is $15.00 per share. In comparison, our estimate of the fair value of our common stock was $3.73 per share as of the April 1, 2013 valuation. We note that, as is typical in IPOs, the preliminary range was not derived using a formal determination of fair value, but was determined based upon discussions between us and the underwriters. Among the factors that were considered in setting this range were our prospects and the history of and prospects for our industry, the general condition of the securities markets and the recent market prices of, and the demand for, publicly traded common stock of comparable companies.

We believe that the difference between the fair value of our common stock as of April 1, 2013 and the midpoint of the estimated price range for this offering is the result of these factors as well as the fact that the estimated IPO price range necessarily assumes that the IPO has occurred, a public market for our common stock has been created and our preferred stock has converted into common stock in connection with the IPO. The estimated IPO price range therefore excludes any DLOM of our common stock and any consideration of the preferences of our convertible preferred stock, which we factored into the April 1, 2013 contemporaneous valuation. In addition, since the time of the April 1, 2013 valuation, Pfizer has informed us through the joint steering committee that additional activities necessary to support the initiation of the Phase 3 clinical trial in mid-2014 are currently underway, pending approval through Pfizer's governance process. During this period, we have also had further conversations with the FDA regarding our development plans for GMI-1070, and we have progressed our plans for the development of GMI-1271, including generation of additional supportive preclinical data.

Research and Development Expenses

Research and development costs are charged to expense as incurred and include employee-related expenses, including salaries, benefits and travel, expenses incurred under agreements with CROs and investigative sites that conduct preclinical studies and clinical trials, as well as the cost of acquiring, developing and manufacturing clinical trial materials, facilities, depreciation and other expenses, which include direct and allocated expenses for rent and maintenance of facilities, insurance and other supplies and costs associated with preclinical activities and regulatory operations.

We record costs for some development activities, such as clinical trials, based on our evaluation of the progress to completion of specific tasks using data such as patient enrollment, clinical site activations, or information provided to us by our vendors on their actual costs incurred. 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 in the financial statements as prepaid or accrued research and development expense, as the case may be.

Income Taxes

We recorded deferred tax assets of $22.7 million as of December 31, 2012, which have been fully offset by a valuation allowance due to uncertainties surrounding our ability to realize these tax benefits. The deferred tax assets are primarily composed of federal and state tax net operating loss, or NOL, carryforwards and research and development tax credit carryforwards. As of December 31, 2012, we had federal NOL carryforwards of $11.4 million, state NOL carryforwards of $1.8 million and research and development tax credit carryforwards of $3.3 million available to reduce future taxable income, if any. Our federal and state NOL carryforwards will begin to expire at various dates starting in 2023. In general, if we experience a greater than 50 percentage point aggregate change in ownership of specified significant stockholders over a three-year period, utilization of our pre-change NOL carryforwards will be subject to an annual limitation under Section 382 of the U.S. Internal Revenue Code of 1986, as amended, and similar state laws. Such limitations may result in expiration of a portion of the NOL carryforwards before utilization and may be substantial. If we experience a Section 382 ownership change as a result of changes in

our stock ownership, some of which changes may be outside our control, the tax benefits related to the NOL carryforwards may be further limited or lost.

Components of Operating Results

Revenue

To date, we have not generated any revenue from product sales and do not expect to generate any revenue from the sale of drugs in the near future. Substantially all of our revenue recognized to date has consisted of the upfront payment under our agreement with Pfizer. As of June 30, 2013, we have not received any development, regulatory or commercial milestone payments or any royalties under the Pfizer collaboration.

Since our inception, we have also recognized a nominal amount of revenue under research grant contracts, generally to the extent of our costs incurred in connection with specific research or development activities.

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.

To date, our research and development expenses have related primarily to the development of GMI-1070 and our other drug candidates. However, as of April 2013, when we completed our Phase 2 clinical trial of GMI-1070, all further clinical development obligations associated with GMI-1070 have shifted to Pfizer.

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, as shown below.

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 GMI-1271 and our other drug candidates 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, but are not limited to:

- 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, potential commercialization of our drug candidates and the increased costs of operating as a public company. These increases will likely include increased costs related to the hiring of additional personnel and fees to outside consultants, lawyers and accountants, among other expenses. Additionally, we anticipate increased costs associated with being a public company, including expenses related to services associated with maintaining compliance with NASDAQ listing rules and SEC requirements, insurance and investor relations costs. In addition, if any of our other drug candidates other than GMI-1070 obtains regulatory approval, we expect to incur expenses associated with building a sales and marketing team. However, we do not expect to receive any such regulatory approval for at least the next several years.

Other Income (Expense)

Other income (expense), net consists of interest income earned on our cash and cash equivalents, offset by other expense.

Results of Operations for the Six Months Ended June 30, 2012 and 2013

The following table sets forth our results of operations for the six months ended June 30, 2012 and 2013:

(in thousands)	SIX MONTHS ENDED JUNE 30, 2012	SIX MONTHS ENDED JUNE 30, 2013	PERIOD-TO-PERIOD CHANGE
Revenue	$7,542	$ 3,863	$(3,679)
Costs and expenses:			
Research and development	4,256	5,624	1,368
General and administrative	1,090	1,263	173
Total costs and expenses	5,346	6,887	1,541
Income (loss) from operations	2,196	(3,024)	(5,220)
Other income (expense):			
Interest income (expense), net	12	1	(11)
Other expense, net	(13)	(4)	9
Total other expense	(1)	(3)	(2)
Net income (loss)	$2,195	$(3,027)	$(5,222)

Revenue

Revenue decreased by $3.7 million to $3.9 million for the six months ended June 30, 2013, compared to the six months ended June 30, 2012, reflecting a decrease of 49%. We recognized $7.5 million of the upfront payment from Pfizer during the six months ended June 30, 2012, and the upfront payment was fully recognized as of March 31, 2013, consistent with the completion of our development obligations under the collaboration.

Research and Development Expense

Research and development expense increased by $1.4 million to $5.6 million for the six months ended June 30, 2013, from $4.3 million in the six months ended June 30, 2012, reflecting an increase of 32%. The increase in research and development expense was primarily attributable to an increase in expenses related to the manufacturing and process development of GMI-1271 in preparation for the filing of an IND for this drug candidate in the first quarter of 2014.

The following table summarizes our research and development expenses by functional area for the six months ended June 30, 2012 and 2013 and from our inception to June 30, 2013:

(in thousands)	SIX MONTHS ENDED JUNE 30,		PERIOD FROM MAY 21, 2003 (DATE OF INCEPTION) TO JUNE 30, 2013
	2012	2013	
Clinical development	$1,074	$ 961	$ 9,242
Personnel related	1,508	1,935	19,017
Consulting fees	98	143	2,960
Manufacturing and formulation	402	1,193	13,255
Institutional research	147	169	5,607
Preclinical research	424	544	6,633
Laboratory costs	512	581	7,467
Stock-based compensation	91	98	542
	$4,256	$5,624	$64,723

The following table summarizes our research and development expenses by drug candidate for the six months ended June 30, 2012 and 2013 and from our inception to June 30, 2013:

(in thousands)	SIX MONTHS ENDED JUNE 30,		PERIOD FROM MAY 21, 2003 (DATE OF INCEPTION) TO JUNE 30, 2013
	2012	2013	
GMI-1070	$1,133	$1,005	$22,892
GMI-1271	561	1,424	3,751
GMI-1051	53	—	255
Other research and development	910	1,162	18,266
Personnel related and stock-based compensation	1,599	2,033	19,559
	$4,256	$5,624	$64,723

General and Administrative Expense

For the six months ended June 30, 2013, our general and administrative expenses increased by $173,000, or 16%, compared to the six months ended June 30, 2012, primarily related to increased professional services costs.

Results of Operations for the Years Ended December 31, 2011 and 2012

The following table sets forth our results of operations for the years ended December 31, 2011 and 2012:

(in thousands)	YEAR ENDED DECEMBER 31, 2011	2012	PERIOD-TO-PERIOD CHANGE
Revenue	$ 3,814	$15,257	$11,443
Costs and expenses:			
Research and development	7,799	9,438	1,639
General and administrative	2,100	2,157	57
Total costs and expenses	9,899	11,595	1,696
Income (loss) from operations	(6,085)	3,662	9,747
Other income (expense):			
Interest income (expense), net	8	21	13
Other expense, net	(36)	(27)	9
Total other expense	(28)	(6)	22
Net income (loss)	$(6,113)	$ 3,656	$ 9,769

Revenue

Revenue increased by $11.4 million to $15.3 million for the year ended December 31, 2012, compared to the year ended December 31, 2011, reflecting an increase of 300%. We entered into the collaboration with Pfizer in October 2011 and therefore only recognized $3.8 million of the $22.5 million upfront payment during the year ended December 31, 2011, reflecting less than three months of recognition, compared to $15.3 million for the year ended December 31, 2012, reflecting a full year of recognition. Revenue for the year ended December 31, 2012 also included $257,000 related to a research grant.

Research and Development Expense

Research and development expense increased by $1.6 million to $9.4 million for the year ended December 31, 2012 from $7.8 million for the year ended December 31, 2011, reflecting an increase of 21%. The increase in research and development expense was primarily attributable to an increase of $1.3 million in expenses related to manufacturing activities for our GMI-1271 program.

The following table summarizes our research and development expenses by functional area for the years ended December 31, 2011 and 2012 and from our inception to December 31, 2012:

(in thousands)	YEAR ENDED DECEMBER 31, 2011	2012	PERIOD FROM MAY 21, 2003 (DATE OF INCEPTION) TO DECEMBER 31, 2012
Clinical development	$2,140	$2,162	$ 8,281
Personnel related	2,645	3,145	17,082
Consulting fees	407	196	2,817
Milestone payments	—	—	—
Manufacturing and formulation	542	1,194	12,062
Institutional research	633	392	5,439
Preclinical research	533	1,091	6,089
Laboratory costs	730	1,067	6,886
Stock-based compensation	169	191	444
	$7,799	$9,438	$59,100

The following table summarizes our research and development expenses by drug candidate for the years ended December 31, 2011 and 2012 and from our inception to December 31, 2012:

(in thousands)	YEAR ENDED DECEMBER 31, 2011	YEAR ENDED DECEMBER 31, 2012	PERIOD FROM MAY 21, 2003 (DATE OF INCEPTION) TO DECEMBER 31, 2012
GMI-1070	$2,746	$2,260	$21,887
GMI-1271	315	1,607	2,327
GMI-1051	2	55	255
Other research and development	1,923	2,178	17,105
Personnel related and stock-based compensation	2,813	3,338	17,526
	$7,799	$9,438	$59,100

General and Administrative Expense

For the year ended December 31, 2012, our general and administrative expenses increased by $57,000, or 3%, compared to the year ended December 31, 2011, primarily related to increased professional services costs.

Liquidity and Capital Resources

Sources of Liquidity

Since our inception and through June 30, 2013, we have raised an aggregate of $86.6 million to fund our operations, of which $22.5 million was the upfront payment under our license agreement with Pfizer and $64.1 million was from the sale of convertible promissory notes and our convertible preferred stock. As of June 30, 2013, we had $10.8 million in cash and cash equivalents.

We are potentially eligible to earn a significant amount of milestone payments and royalties under our agreement with Pfizer. Our ability to earn these payments and their timing is dependent upon the outcome of Pfizer's 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 GMI-1271 or our other drug candidates. We are also unable to predict when, if ever, material net cash inflows will commence from GMI-1070 or GMI-1271. 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; and
- launching commercial sales of drugs, if and when approved, whether alone or in collaboration with others.

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 collaboration with Pfizer. Except for Pfizer's obligation to make milestone payments under our agreement with them, upon the completion of this offering, we will 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 the net proceeds from this offering, together with our existing cash and cash equivalents as of June 30, 2013, will enable us to fund our operating expenses and capital expenditure requirements for at least the next 12 months, without giving effect to any potential milestone payments we may receive under our license agreement with Pfizer. 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

Operating Activities

Net cash used in operating activities was $5.2 million during the six months ended June 30, 2012 compared to $6.6 million during the six months ended June 30, 2013. The increase in cash used in operating activities in the six months ended June 30, 2013 compared to the six months ended June 30, 2012 was driven by an increase in operating expenses attributable to the manufacturing and process development of GMI-1271 in preparation for the filing of an IND for this drug candidate in the first quarter of 2014.

Net cash provided by operating activities was $13.9 million for the year ended December 31, 2011 compared to net cash used of $10.5 million for the year ended December 31, 2012. The change was attributable to our having received the $22.5 million upfront payment from Pfizer in October 2011. In addition, we experienced higher operating expenses in 2012 as compared to 2011 resulting from increased clinical trial activities related to GMI-1070 as we neared completion of our Phase 2 clinical trial.

Investing Activities

Net cash used in investing activities relates primarily to the purchase of property and equipment. The increase in property and equipment purchases of $316,000 in 2012 compared to $182,000 in 2011, consisted primarily of purchases of additional laboratory equipment due to the expansion of our research and development activities in 2012. The decrease from $172,000 in the six months ended June 30, 2012 to $30,000 in the six months ended June 30, 2013 resulted from fewer purchases of laboratory equipment in 2013.

Financing Activities

Our financing activities have not been material since our last financing round in October 2009. Net cash provided by financing activities of $20,000 during the six months ended June 30, 2013 reflected cash received from employee stock option exercises, and there were no such activities during the six months ended June 30, 2012. During the year ended December 31, 2011, cash used in financing activities consisted of $24,000 related to the repayment of promissory notes. We did not have any significant cash flows from financing activities during the year ended December 31, 2012.

Contractual Obligations

The following summarizes our significant contractual obligations as of December 31, 2012, all of which consisted of obligations under a non-cancelable lease for our office space, with a term through October 2015, that is subject to escalation clauses.

	PAYMENT DUE BY PERIOD				
(in thousands)	TOTAL	LESS THAN 1 YEAR	1-3 YEARS	3-5 YEARS	MORE THAN 5 YEARS
Operating leases	$1,208	$415	$793	$—	$—
Total	$1,208	$415	$793	$—	$—

We have no material non-cancelable purchase commitments with contract manufacturers or service providers, as we have generally contracted on a cancelable purchase order basis.

The contractual obligations table does not include any potential future payments we may be required to make under our research agreement with the University of Basel, under which we have agreed to pay 10% of any future milestone payments or royalties we may receive from Pfizer with respect to GMI-1070. Due to the uncertainty of the achievement and timing of the events requiring payment under that agreement, the amounts to be paid by us are not fixed or determinable at this time.

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.

Recent Accounting Pronouncements

In May 2011, the Financial Accounting Standards Board, or FASB, issued Accounting Standards Update, or ASU, 2011-04, *Amendments to Achieve Common Fair Value Measurement and Disclosure Requirements in U.S. GAAP and IFRSs*, which amended ASC Topic 820 to achieve common fair value measurements and disclosure requirements in GAAP and International Financial Reporting Standards, or IFRS. The amendments in ASU 2011-05 result in common fair value measurement and disclosure requirements in GAAP and IFRS. Consequently, the amendments change the wording used to describe many of the requirements in GAAP for measuring fair value and for disclosing information about fair value measurements. This amendment was effective for fiscal years beginning after December 15, 2011. Our adoption of this amendment did not have a material impact on our financial statements for the year ended December 31, 2012.

JOBS Act

In April 2012, the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, was enacted. Section 107(b) of the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. Thus, an emerging growth company can delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have irrevocably elected not to avail ourselves of this extended transition period, and, as a result, we will adopt new or revised accounting standards on the relevant dates on which adoption of such standards is required for other public companies.

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, 2011 and 2012 and June 30, 2013, we had cash and cash equivalents of $28.2 million, $17.4 million and $10.8 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.

BUSINESS

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. Glycomimetics are molecules that mimic the structure of carbohydrates involved in important biological processes. Using our expertise in carbohydrate chemistry and knowledge of carbohydrate biology, we are developing a pipeline of proprietary glycomimetics that 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 initial efforts on drug candidates for rare diseases that we believe will qualify for orphan drug designation. We are developing our lead drug candidate, GMI-1070, also known as rivipansel sodium, 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. We have entered into a collaboration with Pfizer Inc. for the further development and potential commercialization of GMI-1070 worldwide. GMI-1070 has received fast track designation from the U.S. Food and Drug Administration, or 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, or EU. We believe the clinical progress of GMI-1070 provides evidence of the significant potential of our lead program and our proprietary glycomimetics platform. Building on our experience with GMI-1070, we are developing our second most advanced drug candidate, GMI-1271, to be used in combination with chemotherapy to treat acute myeloid leukemia, or AML, a life-threatening hematologic cancer, and potentially other hematologic cancers.

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 carbohydrates to the surface of the proteins. The addition of these carbohydrate structures affects the functions of these 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 the onset and progression of VOC. 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 enable us to design selectin antagonists and other glycomimetics that inhibit the disease-related functions of certain carbohydrates. We believe this expertise and knowledge enable us to develop novel drug candidates to address unmet medical needs.

We are developing our lead drug candidate, GMI-1070, to treat VOC. GMI-1070 is a glycomimetic drug candidate that acts as a pan-selectin antagonist, meaning it binds to all three members of the selectin family, E-, P- and L-selectin. We believe that GMI-1070, by acting as a pan-selectin antagonist, inhibits the role that selectins play in VOC.

Sickle cell disease is a genetic disease that, according to the U.S. Centers for Disease Control and Prevention, or CDC, affects millions of people throughout the world, including an estimated 90,000 to 100,000 people in the United States. VOC is one of the most severe complications of sickle cell disease. It can result in acute ischemic tissue injury at one or more sites, with inflammation and pain of varying degrees of severity. The standard of care in the United States for people experiencing VOC is to manage its symptoms, which typically includes hospitalization, narcotic pain management and hydration. There are no approved therapies that interrupt VOC once it has started or that treat the underlying cause of the pain. Hydroxyurea is a generic drug that is approved for the prevention of VOC, but it is not effective in the acute setting to relieve symptoms or resolve an ongoing VOC episode. In addition, hydroxyurea is not suitable for all patients and can have significant toxicities and side effects. According to the CDC, there were approximately 73,000 hospitalizations related to VOC in the United States in 2010. We believe that GMI-1070, if approved, would be the first drug to interrupt the underlying cause of VOC, thereby potentially reducing the use of narcotics for pain management and enabling patients to leave the hospital more quickly.

We have completed four clinical trials of GMI-1070 involving a total of 163 subjects. In April 2013, we completed a Phase 2 clinical trial in which 76 patients hospitalized for VOC, ranging from 12 to 60 years old, were treated with the standard of care plus either GMI-1070 or placebo. In this trial, patients treated with GMI-1070 experienced reductions in the time to reach resolution of VOC, length of hospital stay and use of opioid analgesics for pain management, in each case as compared to patients receiving placebo. This improvement was seen in both adult and pediatric patients. Adverse event rates and severity were comparable between those treated with GMI-1070 and those receiving placebo.

We entered into a license agreement in October 2011 with Pfizer, under which Pfizer has rights to develop and commercialize GMI-1070 for all indications worldwide. Following the completion of our Phase 2 clinical trial, Pfizer is now responsible for the further clinical development, regulatory approval and potential commercialization of GMI-1070. We expect Pfizer to commence a Phase 3 clinical trial of GMI-1070 in mid-2014, pending approval through Pfizer's governance process. Under the Pfizer agreement, we received an upfront payment of $22.5 million from Pfizer. We are also eligible to receive payments of up to $115.0 million upon the achievement of specified development milestones, including the dosing of the first patients in Phase 3 clinical trials for up to two indications and the first commercial sale of a licensed product in the United States and selected European countries for up to two indications, up to $70.0 million upon the achievement of specified regulatory milestones, including the acceptance of our filings for regulatory approval by regulatory authorities in the United States and Europe for up to two indications, and up to $135.0 million upon the achievement of specified levels of annual net sales of licensed products. We are also eligible to receive tiered royalties, with percentages ranging from the low double digits to the low teens, based on net sales of GMI-1070 worldwide, subject to reductions in specified circumstances. Under a separate research agreement with the University of Basel, we have agreed to pay 10% of any future milestone payments and royalties we may receive from Pfizer with respect to GMI-1070. We have retained the worldwide development and commercialization rights to all of our drug candidates other than GMI-1070.

We are developing a pipeline of other drug candidates based on our expertise in carbohydrate chemistry, including compounds that are designed to be specific to particular selectins. We are developing GMI-1271, a specific E-selectin inhibitor, to be used in combination with chemotherapy to treat patients with AML and potentially other hematologic cancers. 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, GMI-1271 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 GMI-1271 as compared to animals treated with chemotherapy alone. In other animal studies, GMI-1271 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 GMI-1271 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 GMI-1271 results in lower bone marrow toxicity due to its inhibition of E-selectin, which makes stem cells in the bone marrow divide less frequently, thereby protecting them from chemotherapy agents that target rapidly dividing cells. Based on our preclinical studies, we believe GMI-1271 may improve chemotherapy response rates, duration of remission and, ultimately, survival in patients with hematologic cancers like AML.

We are planning to hold a pre-IND meeting with the FDA in the fourth quarter of 2013 and to file an IND for GMI-1271 in the first quarter of 2014. Assuming the IND is accepted, we plan to initiate a Phase 1 single dose-escalation clinical trial in healthy volunteers in the second quarter of 2014, to be followed by Phase 1/2 multiple dose-escalation clinical trials in defined populations of patients with AML.

Our preclinical pipeline also includes other E-selectin antagonists that we are designing and testing for oral availability, glycomimetic compounds that simultaneously target both E-selectin and a chemokine receptor known as CXCR4, and glycomimetic compounds focused on other targets. For example, we are investigating several compounds, including GMI-1051, to treat pseudomonas infections in combination with antibiotics.

Our intellectual property portfolio contains issued patents and patent applications directed to, among other things, compositions of matter and methods of use for our drug candidates. Our issued patents directed to GMI-1070 and methods of use are expected to expire between 2023 and 2030, and our patent applications directed to GMI-1271, if issued, are expected to expire between 2032 and 2033.

We were founded in 2003 and are headquartered in Gaithersburg, Maryland. Our principal investors are funds managed by New Enterprise Associates, Genzyme Corporation, Anthem Capital, Alliance Technology Ventures and Rosetta Capital.

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:

- ***Support Pfizer's further development of our lead drug candidate, GMI-1070***. We will continue to work with Pfizer as it proceeds with further clinical development of GMI-1070, including the Phase 3 clinical trial that we expect Pfizer to initiate in mid-2014, and pursues regulatory approval of GMI-1070. We expect to use any milestone and royalty payments that we may receive from Pfizer to accelerate the development of our other drug candidates.
- ***Rapidly advance GMI-1271 for the treatment of AML***. We intend to build on our experience developing GMI-1070 to rapidly advance GMI-1271 for the treatment of AML in combination with chemotherapy. We plan to file an IND with the FDA in the first quarter of 2014 for this indication. Assuming the IND is accepted, we plan to initiate a Phase 1 dose-escalation clinical trial in healthy volunteers in the second quarter of 2014, to be followed by Phase 1/2 dose-escalation clinical trials in defined populations of patients with AML. We have retained worldwide development and commercialization rights to GMI-1271.
- ***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 drugs or may address larger market opportunities. We are in the process of selecting and intend to develop a drug candidate that simultaneously inhibits both E-selectin and CXCR4 for use in the treatment of cancers with significant bone marrow involvement, such as myeloma. We are also working to design an orally available E-selectin antagonist, which we believe could be of significant interest to potential collaborators for major market opportunities, such as the treatment of cardiovascular disease.
- ***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. One potential target is pseudomonas, a pathogenic form of bacteria that results in serious infections and is frequently resistant to treatment with antibiotics. We have observed results in animal models that suggest glycomimetic drugs can be used to improve treatment of pseudomonas infections. We have an active preclinical program testing and optimizing compounds to treat these infections.

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, 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 such as inflammatory diseases, cancer and infection. 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.

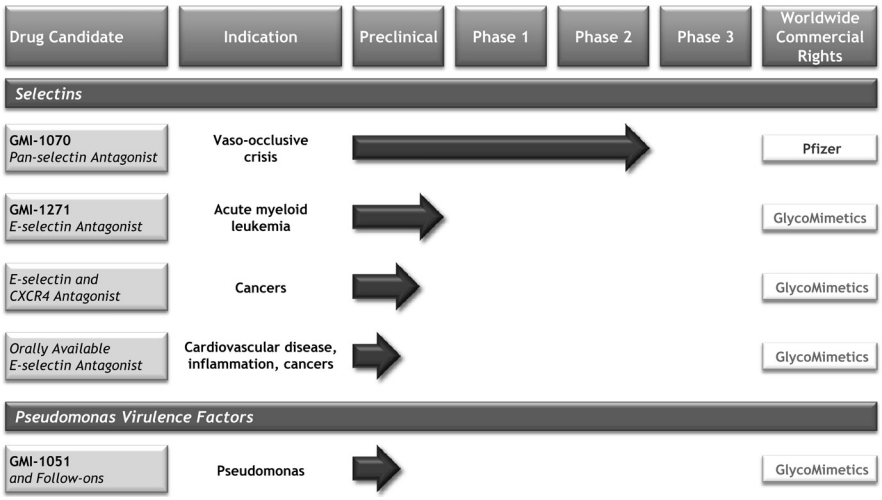
Once we identify a carbohydrate structure involved in a disease pathway, we design molecules that mimic that carbohydrate structure and inhibit its disease-related functions by binding to the carbohydrate's target receptor, thereby blocking the binding by the native carbohydrate itself. For example, one of the naturally modified Lewis structures binds to selectins, which play a key role in VOC. GMI-1070 mimics that carbohydrate structure and accordingly binds to selectins, which we believe thereby inhibits the progression of VOC. 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.



GMI-1070—Targeting Selectins to Treat VOC

We are developing GMI-1070 to treat VOC with the goal of reducing duration of VOC episodes, length of hospital stay and use of opioid analgesics for pain management. In our Phase 2 clinical trial, patients treated with GMI-1070 plus the standard of care demonstrated improvement in these endpoints, in each case as compared to patients receiving placebo plus the standard of care.

Sickle Cell Disease and VOC

Sickle cell disease is a genetic disease that, according to the CDC, affects millions of people throughout the world, including an estimated 90,000 to 100,000 people in the United States. One of the most severe complications of sickle cell disease is VOC. VOC episodes are typically characterized by excruciating musculoskeletal pain, visceral pain and pain in other locations, and occur periodically throughout the life of a person with sickle cell disease. The CDC estimates that VOC resulted in approximately 73,000 hospitalizations in the United States in 2010. According to the National Hospital Discharge Survey conducted by the National Center for Health Statistics, these hospitalizations have an average duration of approximately six days. The standard of care in the United States for people experiencing VOC is to manage its symptoms, which typically includes hospitalization, narcotic pain management and hydration. There are no approved therapies that interrupt VOC once it has started or that treat the underlying cause of the pain.

Among both adults and children with sickle cell disease, VOC is the most common reason for seeking medical attention resulting in hospitalization. VOC affects multiple organ systems, and may result in significant clinical complications. Most sickle cell disease-related deaths occur during acute VOC, and are due to infection, acute chest syndrome, stroke or multi-organ failure.

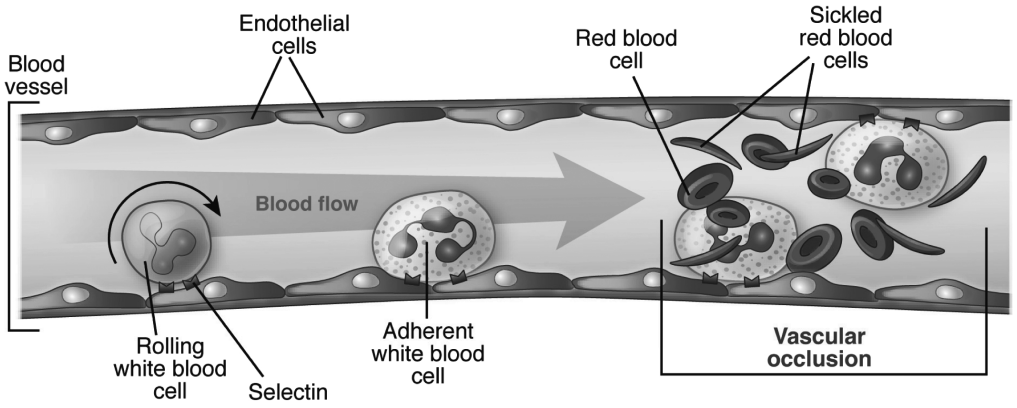
Market Opportunity for Treatment of VOC

We believe that effective treatment of VOC could provide significant clinical and pharmacoeconomic benefit. According to the U.S. Agency for Healthcare Research and Quality, the average hospital charges in the United States for a patient treated for VOC were approximately $20,000 in 2006. In some states, these charges may be substantially higher. For example, according to the California Office of Statewide Health Planning and Development, the average hospital charges for a patient treated for VOC in California were over $40,000 in 2006. A reduction in the length of a hospital stay could reduce these costs. If GMI-1070 is shown to be safe and effective in reducing the duration of VOC in hospitalized patients, it could also be tested to determine if hospitalization could be prevented with use of GMI-1070 in the emergency department, or if VOC could be managed safely and effectively in the home or in an outpatient setting through a self-administered dosage form, thereby avoiding costly emergency department visits. We believe that uses in each of these settings represent potentially significant market opportunities.

The Role of Selectins in VOC

The cause of vascular occlusion involves both an inflammatory component and a mechanical component. In the inflammatory component, white blood cells begin to roll along and then adhere to the endothelium, the thin layer of cells that lines the interior surface of blood vessels. These white blood cells then become activated and express adhesion receptors known as integrins, which bind and form aggregates with platelets, red blood cells and other white blood cells. These cell aggregates are responsible for the mechanical component of vascular occlusion, in which rigid sickled red blood cells are more easily caught in the post-capillary venules, which are very small blood vessels connecting the capillaries and the veins. The resulting vascular occlusion causes slowing of blood flow in the post-capillary venules, contributing to inadequate oxygen supply in the local tissue, known as ischemia, which in turn causes further tissue inflammation and pain.

The development of VOC is illustrated in the following diagram:



Selectins are important in this process because they act as adhesion molecules and play a key role in the initial recognition and binding of white blood cells to the endothelial cells, and their formation of aggregates with platelets, red blood cells and other white blood cells. White blood cells express carbohydrates on their surfaces that bind to E-selectin that is present on inflamed vascular endothelium. White blood cells bound to E-selectin on the endothelial cells then become activated and act as adhesion sites for platelets, red blood cells and other white blood cells, thereby leading to the formation of an occlusion. GMI-1070 is a glycomimetic drug candidate designed to inhibit binding of all three types of selectins and inhibit the selectin-mediated recognition and binding of white blood cells to the endothelium. The rationale for the development of GMI-1070 to treat VOC is that, by blocking these steps in the vaso-occlusive process, it has the potential to decrease the duration and intensity of VOC.

Limitations of the Current Standard of Care for VOC

The current standard of care for VOC is focused on managing its symptoms. Narcotics are typically used for the management of acute pain associated with VOC. Pain management often starts with oral medications taken at home at the onset of pain. However, if the pain is not relieved, or if it progresses, patients may seek medical attention in a clinic setting or emergency department. Pain that is not controlled in these settings may require hospitalization for more potent pain medications, typically administered intravenously. The patient must stay in the hospital to receive these intravenous, or IV, pain medications until the VOC resolves and the pain subsides. Other supportive measures during hospitalization include hydration, supplemental oxygen and treatment of any concurrent infections or other conditions. While pain medications can be effective in managing pain during VOC, they do not affect or resolve the underlying vascular occlusion, tissue ischemia or potential organ damage.

The only approved drug targeting VOC is hydroxyurea, which is available in both generic and branded formulations. Hydroxyurea has been approved as a once-daily oral treatment for reducing the frequency of VOC and the need for blood transfusions in adult patients with recurrent moderate-to-severe VOC. While hydroxyurea has been shown to reduce the frequency of VOC in some patient groups, it is not effective in relieving symptoms or accelerating the resolution of an ongoing VOC episode. Moreover, hydroxyurea is not suitable for all patients and can have significant toxicities and side effects. In particular, hydroxyurea is labeled to inform patients that it can cause a severe decrease in the number of blood cells in a patient's bone marrow, which may increase risks that the patient will develop a serious infection or bleeding, and that it may increase the risk that the patient will develop certain cancers. Additionally, since hydroxyurea is prescribed to be taken on a daily basis, lack of patient compliance can be a barrier to its optimal use.

Since available therapies do not interrupt the VOC episode, opioid narcotics are generally prescribed to treat the pain until the VOC runs its natural course. Use of narcotics can lead to tissue or organ damage and resulting complications and morbidities, prolonged hospital stays and associated continuation of pain and suffering. Treatment of pain with IV narcotics and management of VOC-related complications typically require hospital stays ranging from a few days to a few weeks, with an average length of stay of approximately six days.

GMI-1070 Clinical Results

We held a pre-IND meeting with the FDA in June 2007 and submitted an IND for GMI-1070 in July 2008. Upon approval of the IND, we initiated a single dose Phase 1a trial of GMI-1070 in August 2008. In December 2008, we completed the Phase 1a trial, in which 40 healthy volunteers were enrolled. Of these subjects, 30 were dosed once with one of five dose levels of GMI-1070, ranging from 2 to 40 mg/kg, and 10 received placebo. In addition, we completed a multiple dose Phase 1b trial in February 2009, in which 32 healthy volunteers were enrolled. Of these subjects, 24 were dosed with four dose levels of GMI-1070, and eight received placebo. Three groups of six subjects each were dosed at 5, 10 or 20 mg/kg every eight hours for 13 doses. An additional group of six subjects received a loading dose of 40 mg/kg, followed by 20 mg/kg every eight hours for six doses. The results of these trials demonstrated a half-life of GMI-1070 of approximately seven hours, with the drug excreted largely intact. GMI-1070 was well tolerated in these subjects and no safety concerns were identified. Adverse events occurred at similar rates across the treatment groups in both of these trials.

In 2010, we completed a Phase 1 pilot trial in 15 adults with sickle cell disease not experiencing VOC. In this trial, patients received a loading dose of 20 mg/kg of GMI-1070, followed by a dose of 10 mg/kg ten hours later. The trial focused on the evaluation of safety, pharmacokinetic, or PK, profiles and certain biomarkers. In individuals with sickle cell disease and at the dose levels intended for further evaluation, no safety concerns associated with the use of GMI-1070 were identified and the PK profile was also similar to that seen in healthy volunteers. When administered to patients with sickle cell disease, GMI-1070 was shown to affect biomarkers of inflammation and coagulation. The results of this trial were selected for oral presentations at the annual meetings of the American Society of Hematology in December 2011 and 2012.

Results from these three Phase 1 clinical trials demonstrated evidence of linear PK for GMI-1070 when administered as single or multiple doses to the 72 healthy volunteers and the 15 patients with sickle cell disease. GMI-1070 was well tolerated in these subjects and no safety concerns were identified. Adverse events occurred at similar rates across the treatment groups in these trials.

We also completed a Phase 2 clinical trial of GMI-1070 in sickle cell patients hospitalized for VOC. We announced top-line results from this trial in April 2013. This trial was a randomized, double-blind, placebo-controlled trial at 22 sites in the United States and Canada evaluating the safety, efficacy and PK of multiple IV doses of GMI-1070 or placebo in 76 patients hospitalized for VOC, ranging from 12 to 60 years old. Of these patients, 43 received GMI-1070 and 33 received placebo, in both cases in addition to the standard of care. Patients receiving GMI-1070 in the trial received one of two dose levels. Patients in the low dose group received a loading dose of 20 mg/kg, followed by a 10 mg/kg dose every 12 hours. Patients in the high dose group received a loading dose of 40 mg/kg, followed by a 20 mg/kg dose every 12 hours.

In patients receiving GMI-1070 in this trial, there were reductions in multiple measures related to a VOC episode as compared to patients receiving placebo. Two widely used statistical methods, known as ANCOVA and Kaplan-Meier, were used to analyze the results of this trial. The time to reach resolution of VOC, the primary endpoint of the trial, was reduced in the patients receiving GMI-1070 by a mean of 41.0 hours, as measured by ANCOVA, with a p-value of 0.192, and reduced by a median of 63.3 hours, as measured by Kaplan-Meier, with a p-value of 0.187. P-value is a conventional statistical method for measuring the statistical significance of clinical results. A p-value of 0.05 or less represents statistical significance, meaning that there is a less than 1-in-20 likelihood that the observed results occurred by chance. In addition, in the patients receiving GMI-1070, the time to hospital discharge was reduced by a mean of 54.7 hours, as measured by ANCOVA, with a p-value of 0.096, and a median of 83.9 hours, as measured by Kaplan-Meier, with a p-value of 0.092. The time to transition off IV analgesics was reduced by a mean of 47.0 hours, as measured by ANCOVA, with a p-value of 0.137, and a median of 75.7 hours, with a p-value of 0.089, as measured by Kaplan-Meier. The cumulative amount of opioid analgesic administered during hospitalization was reduced by 83%, as measured by ANCOVA, with a p-value of 0.01. Although the Phase 2 clinical trial was not large enough to detect statistically significant differences in these endpoints, other than with respect to the reduction in cumulative amount of opioid analgesic administered, we believe the observed reductions in these measures in patients treated with GMI-1070, and the consistency of a positive response across multiple measures, demonstrate the potential benefit of GMI-1070.

The types and frequency of adverse events and serious adverse events were comparable across the treatment groups in the Phase 2 clinical trial. The most common serious adverse event was rehospitalization for VOC. Measures of organ function, respiratory and cardiac function and routine tests of medical status while in the hospital were similar between the groups. One serious rash occurred in the high dose group, which resolved with minimal medical treatment. Acute chest syndrome, a complication of sickle cell disease affecting the lungs, occurred in six subjects receiving GMI-1070 and in three subjects receiving placebo. Rehospitalization rates for VOC were similar between the groups and lower than the rehospitalization rate that is typical for VOC.

We believe the favorable effects we observed in our Phase 2 clinical trial are the result of mechanism-based resolution of VOC. Specifically, we believe that by inhibiting selectin-mediated adhesion of white blood cells to the endothelium, GMI-1070 prevents propagation of VOC and promotes early resolution. Results from the Phase 2 clinical trial provide the first clinical evidence of a positive effect of GMI-1070 in adult and pediatric patients experiencing VOC. No currently available therapies provide similar benefits to patients in VOC. Based on the data from our Phase 2 clinical trial for GMI-1070, we believe GMI-1070 has the potential to become the first drug approved to treat VOC in both adult and pediatric patient populations. Although Mast Therapeutics, Inc. is currently conducting a Phase 3 clinical trial of a drug candidate that may be used to treat an ongoing VOC episode, we believe that it is only being tested in pediatric patients ages 8 to 17 years old, unlike GMI-1070 which is being tested to treat both adult and pediatric patients experiencing VOC.

If GMI-1070 is demonstrated to be safe and effective for the treatment of VOC, we believe it may show substantial clinical and pharmacoeconomic benefit. If patients treated with GMI-1070 are discharged more quickly from the hospital, there is potential to reduce the costs of hospitalization, in addition to showing clinical benefit by reduced duration of VOC episodes and reduced use of opioid analgesics for pain management. In addition, if GMI-1070 is shown to be safe and effective for treating VOC in hospitalized patients, it is possible that it could be tested in patients experiencing VOC who are not hospitalized to determine if hospitalization could be prevented or if pain from VOC could be managed safely and effectively in the home or in an outpatient setting. We believe that uses in each of these settings could represent significant market opportunities for GMI-1070. Following the completion of the Phase 2 clinical trial, Pfizer is now responsible for the further clinical development, regulatory approval and potential commercialization of GMI-1070.

Pfizer has advised us through the joint steering committee established under the Pfizer agreement that they intend to begin enrolling adult and pediatric patients for a Phase 3 trial of GMI-1070 in mid-2014, pending approval through Pfizer's governance process. Pfizer has also informed us through the joint steering committee that activities necessary to support the initiation of a Phase 3 trial in mid-2014 are currently underway pending approval through Pfizer's governance process. The steps that Pfizer has taken and is taking to prepare for a Phase 3 trial include manufacturing of the drug substance to be used in the Phase 3 trial, completion of toxicology studies that would support a Phase 3 trial and an NDA, engagement with regulatory authorities in the United States and overseas to discuss plans for the conduct of a Phase 3 trial planning and preparation for a so-called TQTc clinical trial to evaluate cardiac safety that would support a Phase 3 trial, contracting with a CRO to provide services in the conduct of a Phase 3 trial and convening clinical investigators in the United States and overseas to discuss plans for a Phase 3 trial. Additionally, we expect to hold an End of Phase 2 meeting with the FDA before the end of 2013. Although Pfizer has taken and is taking a number of steps to prepare for Phase 3 initiation in mid-2014, there can be no assurance that Pfizer will proceed on that schedule, or at all.

GMI-1271—Targeting the Bone Marrow Microenvironment to Treat Hematologic Cancers

We are developing GMI-1271, a specific E-selectin antagonist, to be used in combination with chemotherapy to treat AML and potentially other hematologic cancers. We believe that GMI-1271 may be used as first-line treatment for elderly AML patients, as well as adjunctive treatment for patients with relapsed or refractory AML. GMI-1271 targets interactions between cancer cells and the bone marrow microenvironment. In preclinical studies, combining GMI-1271 with chemotherapy made cancer cells more sensitive to chemotherapy. In other preclinical studies, GMI-1271 also reduced some of the toxic effects of chemotherapy, including neutropenia and mucositis, on normal cells.

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. The American Cancer Society estimates that in 2013, approximately 15,000 people in the United States will be diagnosed with AML and over 10,000 people in the United States will die of the disease. AML is more commonly present in elderly patients, with a median age at diagnosis of 67 years according to the National Cancer Institute. In a review published in the *Journal of Clinical Oncology*, the median overall survival of patients 60 years old or older was 8.7 months. The overall five-year relative survival rate for all AML patients is 24%, and only 5% for patients over 65 years old at diagnosis. 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 of those 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 AML patients, 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, hypomethylators and supportive care. Further, many elderly AML patients 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 and survival rates. We therefore believe that our E-selectin antagonist, GMI-1271, has the potential to improve the current treatment of AML patients.

GMI-1271 Preclinical Development

Some leukemia cells, known as blast cells, bind to E-selectin in the bone marrow where they are relatively protected from the effects of chemotherapy. This phenomenon is known as cell adhesion-mediated drug resistance, or CAMDR. We believe that E-selectin inhibition disrupts the adhesion involved in CAMDR and mobilizes blast cells out of the bone marrow and into the bloodstream, making them more susceptible to chemotherapy. We believe that this mechanism of action may allow GMI-1271 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 GMI-1271 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 bound to E-selectin were more resistant to chemotherapy. In a related study, when treated with GMI-1271, 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. In another *in vitro* study, GMI-1271 inhibited the E-selectin-mediated activation of the Wnt and Hedgehog signaling pathways, which are known to play important roles in the development and progression of AML. These pathways are activated in tumors when they are bound to E-selectin, and activation of these pathways may enhance the survival of these tumor cells. We believe that all of this data supports our strategy for targeting E-selectin in these patients. GMI-1271 represents a novel agent that we believe could potentially be combined with many chemotherapeutic agents.

We believe that GMI-1271, by targeting the interactions between cancer cells and bone marrow, may not be specific as to cancer type. In addition to our studies of GMI-1271 targeting AML, we have also tested the drug candidate in other cancer models. In *in vivo* studies involving animal models of pancreatic cancer and breast cancer, GMI-1271, as a single agent, inhibited metastasis, and in the breast cancer model it also translated to improved survival. When combined with chemotherapy, in the pancreatic cancer model, GMI-1271 reduced metastasis to a more significant degree than did the chemotherapy alone.

In addition to its anti-tumor effects, GMI-1271, in animal models, has shown protection against some of the toxicities of chemotherapy. In particular, animals treated with GMI-1271 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 GMI-1271 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 GMI-1070 and were published in the journal *Nature Medicine* in December 2012. Based on these reductions in some of the toxicities of chemotherapy, we are considering evaluation of these effects as secondary efficacy endpoints in our planned clinical trials.

GMI-1271 Clinical Plans

We are planning to hold a pre-IND meeting with the FDA in the fourth quarter of 2013 and to file an IND for GMI-1271 in the first quarter of 2014. Assuming the IND is accepted, we plan to initiate a Phase 1 single dose-escalation clinical trial of GMI-1271 in healthy volunteers in the second quarter of 2014, to be followed by a Phase 1/2 multiple dose-escalation clinical trial in defined populations of patients with AML. Once dose-escalation is complete, we plan to extend the Phase 1/2 clinical trial into specific patient populations in two or three randomized, placebo-controlled clinical trials. Each of these randomized clinical trials will evaluate a different group of patients with AML. We anticipate that the first two trials will focus on elderly AML patients and relapsed AML patients of all ages. As we obtain more data on GMI-1271 in AML and other malignancies, a third randomized clinical trial may include an additional AML patient group, or may expand to additional hematologic cancers. In these trials, we expect that patients will receive GMI-1271 in combination with standard of care chemotherapy. Each trial may therefore evaluate GMI-1271 in conjunction with a different chemotherapy regimen, based on the standard for that patient population. Although final trial designs are not complete, we expect that the trials will likely be blinded through the first or second course of GMI-1271 in combination with chemotherapy, then unblinded to allow an ongoing evaluation of patient outcomes in comparison to the standard of care. These trials will likely evaluate both short-term outcomes, including response rates and minimal residual disease, and longer-term outcomes, including duration of remission and progression-free survival.

Drug Candidates Targeting E-selectin and CXCR4

We have identified a family of drug candidates that are designed to simultaneously inhibit both E-selectin and a chemokine receptor known as CXCR4. We intend to select one of these drug candidates to be developed for the treatment of cancers with significant bone marrow involvement, such as myeloma. Chemokines are signaling proteins secreted by cells that bind CXCR4. E-selectin and CXCR4 are binding targets that share important roles in cellular migration in cancer and inflammation. Therefore, a compound targeting both E-selectin and CXCR4 may also be useful in treating inflammatory components of disease.

CXCR4 has been successfully targeted by the approved drug plerixaflor, which is marketed by Sanofi as Mozobil. This drug has been shown to improve the mobilization of stem cells out of bone marrow and into the circulating blood where they can be collected in anticipation of a stem cell transplant. CXCR4 is a binding protein on the surface of stem cells that keeps them in the bone marrow and prevents them from entering the bloodstream. Mozobil works by binding to CXCR4 on stem cells, thereby blocking the bond that normally keeps them anchored to the bone marrow. Mozobil is currently in clinical trials to treat AML and myeloma in combination with chemotherapy.

Due to the similar cellular functions of E-selectin and CXCR4 as adhesion molecules that bind 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 as compared to targeting CXCR4 alone.

GMI-1051 and Other Drug Candidates Targeting Pseudomonas Virulence Factors

Pseudomonas is a pathogenic form of bacteria that is responsible for an increasing number of infections and is frequently resistant to treatment with antibiotics. These bacteria express and secrete molecules known as virulence factors, which are involved in key functions of bacterial survival and propagation. These virulence factors bind to specific carbohydrate structures, which we believe can be targeted with glycomimetic drugs. We have developed one drug candidate, GMI-1051, which is an antagonist of two important pseudomonas virulence factors, PA-IL and PA-IIL.

We have conducted a number of *in vitro* and *in vivo* preclinical studies of GMI-1051. In each study, GMI-1051 inhibited the functions of both PA-IL and PA-IIL and had greater affinity for these targets than did the native carbohydrates. We also studied GMI-1051 *in vivo* in three animal models of pseudomonas infection. In one study, GMI-1051 improved survival of mice in a chronic lung infection model when dosed in combination with tobramycin, an antibacterial often used to treat pseudomonas infections, as compared to treatment with tobramycin alone. In two other studies, GMI-1051 reduced bacterial load in an acute lung infection model and improved survival in a model of surgical infection. We are actively testing and optimizing GMI-1051 and other similar compounds to identify the most suitable drug candidates for further development.

Our Collaboration with Pfizer

Overview

In October 2011, we entered into a license agreement with Pfizer, under which we granted Pfizer an exclusive worldwide license to develop and commercialize GMI-1070, also known as rivipansel sodium, for all fields and uses. The products licensed under the agreement also include certain backup compounds, along with modifications of and improvements to GMI-1070 that meet defined chemical properties.

Under the terms of the agreement, we received a $22.5 million upfront payment and are eligible to earn up to $115.0 million upon the achievement of specified development milestones, including the dosing of the first patients in Phase 3 clinical trials for up to two indications and the first commercial sale of a licensed product in the United States and selected European countries for up to two indications, up to $70.0 million upon the achievement of specified regulatory milestones, including the acceptance of our filings for regulatory approval by regulatory authorities in the United States and Europe for up to two indications, and up to $135.0 million upon the achievement of specified levels of annual net sales of licensed products. We are also eligible to receive tiered royalties for each licensed product, with percentages ranging from the low double digits to the low teens, based on net sales of GMI-1070 worldwide, subject to reductions in specified circumstances.

Development and Commercialization Obligations

Pfizer will initially develop and seek approval for GMI-1070 in the field of sickle cell disease under the agreement. We were responsible for completion of the Phase 2 clinical trial relating to VOC associated with sickle cell disease. Following the recent completion of the Phase 2 clinical trial, we now have no further development or commercialization obligations, and Pfizer is required to use commercially reasonable efforts, at its expense, to develop, obtain regulatory approval for and commercialize GMI-1070 for sickle cell disease in the United States. Pfizer generally must notify us in writing promptly of any decision to cease development activities, efforts to obtain regulatory approval or commercialization of GMI-1070 for the first approved indication.

Governance

The agreement establishes a non-voting, joint steering committee to facilitate the exchange of information regarding the development of licensed products and the initial commercialization plans for such products.

Exclusivity Restrictions

During the term of the agreement, we may not directly or indirectly commercialize any pharmaceutical compound or product that is labeled for the treatment, prevention or prophylaxis of a vaso-occlusive or painful crisis associated with sickle cell disease anywhere in the world, subject to specified exceptions if we or our affiliates were to undergo a change of control.

Term and Termination

The agreement will expire on a licensed product-by-licensed product and country-by-country basis on the date of termination of the applicable royalty term with respect to each licensed product in each country and in its entirety upon the expiration of all applicable royalty terms for all licensed products in all countries. The royalty term for each licensed product in each country is the period commencing with the first commercial sale in the applicable country and ending on the expiration of specified patent coverage or 10 years following the first commercial sale in the applicable country, whichever is later. Pfizer has the right to terminate the agreement, subject to certain notice requirements. The agreement may also be terminated in its entirety either by Pfizer or by us in the event of an uncured material breach by the other party or in the event the other party becomes subject to specified bankruptcy, insolvency or similar circumstances.

Effects of Termination

Upon termination of the agreement by Pfizer for convenience or by us, all rights and licenses granted to Pfizer under the agreement will terminate and Pfizer is obligated to grant us a non-exclusive worldwide license to specified Pfizer proprietary rights to develop and commercialize licensed products in the form being used or sold by Pfizer at the time of such termination, to transfer to us specified data and regulatory materials and approvals, and to provide for the continued supply of licensed products subject to specified terms. If Pfizer has completed additional clinical trials for the applicable licensed product and we obtain such a license or obtain such data and materials and commercialize a licensed product, then, for a period of 10 years from the first commercial sale of such licensed product, Pfizer is eligible to receive royalties at defined percentages in the low single-digits on net sales of such licensed product worldwide, up to a defined aggregate payment cap. The applicable royalty rate and maximum royalty payment cap depend on the stage of clinical development at the time of such termination.

Research Services Agreement with University of Basel

We have a research services agreement with the University of Basel, or the University, under which University personnel have performed research services for us on an as-requested basis since 2004 pursuant to separately negotiated research plan work orders, each lasting one year. We have no obligation to continue to purchase services from the University under the agreement. Under the current research plan, the University is performing research services related to potential oral selectin antagonists and PK evaluation for new selectin antagonists in development by us. We have agreed to pay the University consideration for the research services performed, as determined in connection with each annual research plan work order. For each of the annual research terms ended in February 2012 and 2013, we paid the University approximately $150,000.

We do not license any intellectual property from the University under this agreement as the University assigns to us its rights in any intellectual property jointly developed under this agreement. However, as part of the original consideration for entering into the agreement, we granted to the University the right to receive payments from us under specified circumstances. Accordingly, if we receive any future milestone payments or royalties from Pfizer with respect to GMI-1070, we have agreed to pay 10% of those amounts to the University, subject to specified exceptions. We do not expect any of our other product candidates to be covered by the payment obligations under this agreement. These potential payments to the University are our only affirmative obligation under the agreement other than payment for research services for ongoing research plan work orders.

The agreement remains in effect until we are no longer obligated to make any potential payments. The agreement contemplates individual one year research terms, which have been implemented by annual amendments to the agreement. The current research term will expire in February 2014. The agreement may be terminated by us if the investigator performing the services under the agreement becomes incapacitated to properly carry out his duties under the agreement. The agreement may also be terminated by either party upon material breach by the other party unless the breaching party cures the breach within 90 days.

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. As more fully described below, we have issued patents directed to GMI-1070 and methods of use that are expected to expire between 2023 and 2030. We have patent applications directed to GMI-1271 that, if issued, are expected to expire between 2032 and 2033. We also rely on trade secrets and careful monitoring of our proprietary information to protect aspects of our business that are not amenable to, or that we do not consider appropriate for, patent protection.

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.

Our patent portfolio is summarized below.

GMI-1070

Our patent coverage on GMI-1070 is based on patent filings that are wholly owned by us. We own six issued U.S. patents that are expected to expire between 2023 and 2029 and that cover the compound GMI-1070, GMI-1070 as a member of a class of related compounds and methods of using these compounds to modulate selectin-mediated function and for the treatment of sickle cell disease or a complication associated therewith. On January 25, 2013, we applied for a broadening reissue of one of these patents, U.S. Patent 7,728,117, which expires in 2029 and covers the compound GMI-1070. The reissue application seeks claims to, among other things, pharmaceutical compositions comprising GMI-1070. We do not know when or even if a reissue patent will be granted, or, if a reissue patent is granted, whether the claims under the reissue patent will be broader or narrower than the original patent. If granted, U.S. Patent 7,728,117 will be surrendered and the reissue patent will have the same force and effect as the original patent and the same 2029 expiration date. However, even if we successfully achieve reissue of the patent on such an application, the amendment of any claims may impact our ability to enforce this patent against third parties in relation to infringement occurring before the date of reissue, if the claims of the reissued patent are not substantially identical to those of the original patent, and we will not be able to enforce our reissued patent against third parties who infringe the reissued patent, if such third parties were not also infringing our original patent. In addition to the above six patents, we have one U.S. patent expected to expire in 2030 that covers the use of GMI-1070, specifically and as a member of a class, to inhibit metastasis of a cancer of the blood. We have one pending U.S. patent application which has recently been allowed by the USPTO that covers GMI-1070, specifically or as a member of a class, as well as the use of these compounds, to inhibit selectin-mediated function and to treat platelet-mediated disease or a thrombosis disease. If this patent is issued, it is expected to expire in 2029. We have two additional patents and one additional patent application that cover compounds closely related to GMI-1070 and compositions thereof.

We also have patent applications and patents abroad related to these key U.S. patents and patent applications. We own issued patents in Australia, Austria, Belgium, Bulgaria, Canada, Switzerland, Cyprus, Czech Republic, Germany,

Denmark, Estonia, Spain, Finland, France, United Kingdom, Greece, Hungary, Ireland, Iceland, Italy, Japan, Lithuania, Luxembourg, Latvia, Monaco, Netherlands, Poland, Portugal, Romania, Sweden, Slovenia, Slovakia, South Africa and Turkey that are expected to expire between 2023 and 2028 and that cover the compound GMI-1070, GMI-1070 as a member of a class of related compounds and methods of using these compounds to modulate selectin-mediated function, including for the treatment of sickle cell disease or a complication associated therewith. We also have three additional foreign patents that cover compounds closely related to GMI-1070 and compositions thereof. In addition, we have patent applications pending in Australia, Canada, China, Europe, Hong Kong, Japan and India that cover GMI-1070, specifically or as a member of a class, to inhibit selectin-mediated function, to treat platelet-mediated disease or a thrombosis disease or to inhibit metastasis of a cancer of the blood. The patents from these applications, if issued, are expected to expire between 2023 and 2029.

GMI-1271

Our GMI-1271 patent portfolio consists of one pending Patent Cooperation Treaty, or PCT, application and four pending U.S. provisional applications that are wholly owned by us. The PCT application covers the compound GMI-1271, GMI-1271 as a member of a class of related compounds and methods of using these compounds to treat or prevent metastasis of cancer cells, inhibit infiltration of cancer cells into bone marrow, inhibit adhesion of a tumor cell to an endothelial cell, treat or prevent thrombosis and enhance hematopoietic stem cell survival. The PCT application is eligible for entry into the United States and non-U.S. countries. If issued, the resulting patents are expected to expire around 2032. The U.S. provisional applications are eligible for worldwide filing and may be used to establish non-provisional applications that, if issued, are expected to expire around 2033.

Other Drug Candidates

In addition, we have patent portfolios that are directed to, among other things, compounds that simultaneously inhibit both E-selectin and CXCR4 and compounds that target pseudomonas virulence factors. These patent portfolios are wholly owned by us and include five issued U.S. patents that are expected to expire between 2027 and 2031, five pending U.S. non-provisional patent applications that, if issued, are expected to expire between 2027 and 2031 and four pending U.S. provisional patent applications. The U.S. provisional applications are eligible for worldwide filing and may be used to establish non-provisional applications that, if issued, are expected to expire around 2033.

We also have patent applications and patents abroad related to these U.S. patents and applications, including patents in Australia, China, Sweden, Spain, Netherlands, Italy, Hungary, the United Kingdom, France, Denmark, Germany and Japan directed to pseudomonas virulence factors that are expected to expire in 2026.

The term of individual patents depends upon the legal term of the patents in the countries in which they are obtained. In most countries in which we file, the patent term is 20 years from the earliest date of filing, for example, of a nonprovisional patent application or PCT application.

In the United States, the term of a patent that covers an FDA-approved drug may also be eligible for patent term extension, which permits patent term restoration as compensation for the patent term lost during the FDA regulatory review process. The Hatch-Waxman Act permits a patent term extension of up to five years beyond the expiration of the patent. The length of the patent term extension is related to the length of time the drug is under regulatory review. Patent extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval, and only one patent applicable to an approved drug may be extended. Similar provisions are available in Europe and other foreign jurisdictions to extend the term of a patent that covers an approved drug. In the future, if and when our drug candidates receive FDA approval, we expect to apply for patent term extensions on patents covering those drugs. We intend to seek patent term extensions for any of our issued patents in any jurisdiction where these are available; however, there is no guarantee that the applicable authorities, including the FDA in the United States, will agree with our assessment of whether such extensions should be granted, and even if granted, the length of such extensions.

We also rely on trade secret protection for our confidential and proprietary information. Although we take steps to protect our proprietary information and trade secrets, including through agreements with our employees and consultants, third parties may independently develop substantially equivalent proprietary information and techniques or otherwise gain access to our trade secrets. Thus, we may not be able to meaningfully protect our trade secrets. It is our policy to require our employees, consultants, outside scientific collaborators, sponsored researchers and other

advisors to execute confidentiality agreements upon the commencement of employment or consulting relationships with us. These agreements provide that all confidential information concerning our business or financial affairs developed or made known to the individual during the course of the individual's relationship with us is to be kept confidential and not disclosed to third parties, except in specific circumstances. In the case of employees, the agreements provide that all inventions conceived by the individual, and which are related to our current or planned business or research and development or made during normal working hours, on our premises or using our equipment or proprietary information, are our exclusive property.

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 GMI-1070, 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 GMI-1070 has now transferred to Pfizer. With respect to our other drug candidates, we anticipate continuing to manage process development, scale-up and manufacturing under contracts with third parties.

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. With the exception of GMI-1070, to which we have granted Pfizer exclusive commercialization rights, we generally expect to retain commercial rights in the United States for our current drug candidates, all of which are still in preclinical 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.

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

The biotechnology and pharmaceutical industries are characterized by rapidly advancing technologies, intense competition and a strong emphasis on proprietary drugs. While we believe that our knowledge, experience and scientific resources provide us with competitive advantages, we face potential competition from many different sources, including major pharmaceutical, specialty pharmaceutical and biotechnology companies, academic institutions and governmental agencies and public and private research institutions. Any drug candidates that we successfully develop and commercialize will compete with existing therapies and new therapies that may become available in the future.

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.

With respect to GMI-1070, we are not aware of any therapies that have been approved for the treatment of patients experiencing an ongoing VOC episode. The only approved drug for the prevention of VOC is hydroxyurea. While hydroxyurea has been shown to reduce the frequency of VOC in some patient groups and is approved for chronic use for this indication, it is not effective in relieving symptoms or accelerating the resolution of an ongoing VOC episode. Moreover, hydroxyurea is not suitable for all patients and can have significant toxicities and side effects. We are also aware of a company, Mast Therapeutics, Inc., that is developing a drug to treat VOC once the crisis is underway. Mast has announced that it is currently conducting a Phase 3 clinical trial in pediatric patients 8 to 17 years old experiencing VOC.

In addition to efforts to treat VOC once it is underway, there are a number of companies developing therapies to prevent VOC from occurring. We are aware of another company, Selexys Pharmaceuticals Corporation, that is developing a therapy that targets selectins. We believe that the Selexys approach is focused on P-selectin. Selexys has announced that it has commenced enrollment in a Phase 2 clinical trial and that it has granted Novartis an option to acquire the company. Other companies are using different approaches to target a variety of biological mechanisms, including up-regulating fetal hemoglobin, inhibiting a platelet ADP receptor and increasing the affinity of sickle hemoglobin's binding to oxygen.

We are also aware of efforts to develop cures for sickle cell disease through approaches such as bone marrow transplant and gene therapy. Although bone marrow transplant is currently available, its use is limited by the lack of availability of matched donors and by the risk of serious complications, including graft versus host disease and infection. Attempts to develop a cure through gene therapy remain at an early stage, but if these approaches were to be successful and received regulatory approval, this could limit the market for a drug such as GMI-1070 being developed for treatment of VOC.

With respect to GMI-1271 and its development for the treatment of AML and other hematologic cancers, there is substantial potential competition from other therapies currently in development. While some chemotherapies in development for AML could potentially be complementary to GMI-1271, there are also therapies in development that could be directly competitive with GMI-1271. For example, Mozobil, which is currently marketed by Sanofi, is being studied in combination with chemotherapy for the treatment of AML. As the treatment landscape for AML changes, there is substantial risk that GMI-1271 might not provide additional benefit over other therapies.

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.

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 takes 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 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 and priority review, that are intended to expedite or simplify the process for the development and 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. GMI-1070 has received fast track designation from the FDA.

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 from filing of an NDA, rather than the standard review of ten months from filing under current PDUFA guidelines. Most products that are eligible for fast track designation are also likely to be considered appropriate to receive a priority review.

Post-Approval Requirements

Drugs manufactured or distributed pursuant to 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 and the establishments at which such products are manufactured, as well as new 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.

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 and Data Privacy and Security Laws and Regulations

In addition to FDA restrictions on marketing of pharmaceutical products, federal and state fraud and abuse laws restrict business practices in the biopharmaceutical industry. These laws include anti-kickback and false claims laws and regulations, as well as data privacy and security 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. 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 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 civil False Claims Act or the civil monetary penalties statute, which imposes penalties against any person 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. PPACA also created new federal requirements for reporting, by applicable manufacturers of covered drugs, payments and other transfers of value to physicians and teaching hospitals.

The federal False Claims Act prohibits any person from knowingly presenting, or causing to be presented, a false claim for payment to the federal government or knowingly making, using or causing to be made or used a false record or statement material to a false or fraudulent claim to the federal government. A claim includes "any request or demand" for money or property presented to the U.S. government. Several pharmaceutical and other healthcare companies have been prosecuted under these laws for allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product. Other companies 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 new federal criminal statutes that prohibit 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 and Clinical Health Act, or HITECH, and their respective implementing regulations, including the final omnibus rule published on January 25, 2013, imposes specified requirements relating to the privacy, security and transmission of individually identifiable health information. Among other things, HITECH makes HIPAA's privacy and 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 differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

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 criminal and significant civil monetary penalties, damages, fines, imprisonment, 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 commercial success of our drug candidates and our 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 governmental 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. 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 Coverage, Reimbursement and Pricing

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 and has been significantly affected by major legislative initiatives. For example, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, or the MMA, imposed new requirements for the distribution and pricing of prescription drugs for Medicare beneficiaries. Under Part D, Medicare beneficiaries may enroll in prescription drug plans offered by private entities that provide coverage of outpatient prescription drugs. Part D plans include both standalone prescription drug benefit plans and prescription drug coverage as a supplement to Medicare Advantage plans. Unlike Medicare Part A and B, Part D coverage is not standardized. Part D prescription drug plan sponsors are not required to pay for all covered Part D drugs, and each drug plan can develop its own drug formulary that identifies which drugs it will cover and at what tier or level. However, Part D prescription drug formularies must include drugs within each therapeutic category and class of covered Part D drugs, though not necessarily all the drugs in each category or class. Any formulary used by a Part D prescription drug plan must be developed and reviewed by a pharmacy and therapeutic committee. Government payment for some of the costs of prescription drugs may increase demand for any products for which we receive marketing approval. However, any negotiated prices for our future products covered by a Part D prescription drug plan will likely be lower than the prices we might otherwise obtain. Moreover, while the MMA applies only to drug benefits for Medicare beneficiaries, private payors often follow Medicare coverage policy and payment limitations in setting their own payment rates. Any reduction in payment that results from Medicare Part D may result in a similar reduction in payments from non-governmental payors.

The American Recovery and Reinvestment Act of 2009 provides funding for the federal government to compare the effectiveness of different treatments for the same illness. A plan for the research will be developed by the Department of Health and Human Services, the Agency for Healthcare Research and Quality and the National Institutes for Health, and periodic reports on the status of the research and related expenditures will be made to Congress. 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 changes the way healthcare is financed by both governmental and private insurers. Among other cost containment measures, the PPACA establishes 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. In the future, there may continue to be additional proposals relating to the reform of the U.S. healthcare system, some of which could further limit the prices we are able to charge for our drug candidates, once approved, or the amounts of reimbursement available for our drug candidates once they are approved.

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, starting in 2013. Under the Budget Control Act of 2011, as amended, federal budget "sequestration" Medicare payment reductions became effective on April 1, 2013 and automatically reduced payments under various government programs, including, for example, certain Medicare provider and supplier reimbursement payments. Sequestration may have a material adverse effect on our financial operations. 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, which could have a material adverse effect on our financial operations.

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 GMI-1070, 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 September 30, 2013, we had 28 employees, all of whom are 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.

Facilities

Our principal offices occupy approximately 20,000 square feet of leased office space in Gaithersburg, Maryland, pursuant to a lease agreement that expires in October 2015. We believe that our current facilities are suitable and adequate to meet our current needs. We intend to add new facilities or expand existing facilities as we add employees, and we believe that suitable additional or substitute space will be available as needed to accommodate any such expansion of our operations.

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.

MANAGEMENT

Directors and Executive Officers

The following table sets forth information concerning our directors and executive officers, including their ages as of September 30, 2013:

NAME	AGE	POSITION
Executive Officers:		
Rachel K. King	54	President, Chief Executive Officer and Director
John L. Magnani, Ph.D.	60	Vice President of Research, Chief Scientific Officer and Director
Helen M. Thackray, M.D.	45	Vice President of Clinical Development and Chief Medical Officer
Brian M. Hahn	39	Chief Financial Officer
Non-management Directors:		
M. James Barrett, Ph.D.	70	Chairman of the Board of Directors
John J. Baldwin, Ph.D.	78	Director
William M. Gust	70	Director
Michael A. Henos	64	Director
Franklin H. Top, Jr., M.D.	77	Director

Executive Officers

Rachel K. King

Ms. King is a co-founder of our company and has served as our President and Chief Executive Officer and as a member of our board of directors since our inception in 2003. Previously, Ms. King was an Executive in Residence at New Enterprise Associates, a venture capital firm, from 2001 to 2003. From 1999 to 2001, Ms. King served as a Senior Vice President of Novartis Corporation, a pharmaceutical company. Before joining Novartis, Ms. King spent 10 years with Genetic Therapy, Inc., a biotechnology company, where she served in a number of roles as part of the executive team, which included the company's initial public offering and later acquisition by Novartis. After the acquisition by Novartis, she served as Chief Executive Officer of Genetic Therapy, which was then a wholly owned subsidiary of Novartis. Ms. King previously worked at Alza Corporation, a pharmaceutical and medical systems company that was later acquired by Johnson & Johnson, as well as at Bain and Company, a management consulting firm. She received a B.A. from Dartmouth College and an M.B.A. from Harvard Business School. Ms. King currently serves as Chair of the Board of the Biotechnology Industry Organization, and was appointed by Maryland's governor as Chair of the Maryland Life Sciences Advisory Board. The board of directors believes that Ms. King's knowledge of our company as one of our co-founders and her experience with biotechnology companies prior to founding our company allow her to make valuable contributions to the board.

John L. Magnani, Ph.D.

Dr. Magnani is a co-founder of our company and has served as our Vice President of Research and Chief Scientific Officer and as a member of our board of directors since our inception in 2003. Dr. Magnani is also the founder, President and owner of GlycoTech Corporation. Prior to founding GlycoTech, Dr. Magnani was the Vice President of Research at BioCarb, Inc., one of the first glycobiology-based companies. Earlier in his career, Dr. Magnani was a tenured Research Chemist at the National Institute of Arthritis, Diabetes and Digestive and Kidney Diseases, part of the National Institutes of Health. Dr. Magnani received an A.B. from Washington University in St. Louis and a Ph.D. in biology from Princeton University. The board of directors believes that Dr. Magnani's knowledge of our company as one of our co-founders and his scientific expertise in glycobiology allow him to make valuable contributions to the board.

Helen M. Thackray, M.D.

Dr. Thackray has served as our Vice President of Clinical Development since 2006 and as our Chief Medical Officer since January 2012. Prior to joining our company, Dr. Thackray was Vice President of Clinical Product Development at Biosynexus, Inc., a biopharmaceutical company, from 2001 to 2006. From 1995 to 2011, Dr. Thackray was a practicing physician at the Children's National Medical Center in Washington, D.C., where she also completed her pediatrics residency and served as Pediatric Chief Resident and as an Adjunct Instructor in Pediatrics. From 1999 to

2000, she served as a Medical Genetics Fellow at the National Human Genome Research Institute, part of the National Institutes of Health. Dr. Thackray received a B.S. from Stanford University and an M.D. from The George Washington University School of Medicine. She is a board-certified pediatrician, a Fellow of the American Academy of Pediatrics and Assistant Clinical Professor of Pediatrics at The George Washington University School of Medicine. Dr. Thackray is also a member of the Institutional Review Board of Holy Cross Hospital in Silver Spring, Maryland, and recently served on the BIO PDUFA V Technical Discussions team.

Brian M. Hahn

Mr. Hahn has served as our Chief Financial Officer since January 2012 and previously served as our Director of Finance and Administration from February 2010 to January 2012. From 2002 to September 2009, Mr. Hahn served as Executive Director of Finance at MiddleBrook Pharmaceuticals, Inc., formerly Advancis Pharmaceutical, a specialty pharmaceutical company, and from September 2009 to February 2010 he served as Assistant Controller for OpGen, Inc., a biotechnology company. From 1998 to 2001, he was a senior accountant with Bering Truck Corporation. Mr. Hahn received a B.B.A. from Shenandoah University and an M.B.A. from the University of Maryland. Mr. Hahn currently serves as Chair for the Financial Executive Committee of the Technology Council of Maryland.

Non-management Directors

M. James Barrett, Ph.D.

Dr. Barrett has served as a member of our board of directors since 2003. He currently serves as a General Partner of New Enterprise Associates, or NEA, a venture capital firm, where he specializes in biotechnology and works with members of NEA's healthcare investment group on medical devices, healthcare information systems and healthcare services companies. Prior to joining NEA, from 1997 to 2001, Dr. Barrett founded and served as Chairman and Chief Executive Officer at Senseonics, a medical device company. Prior to that, he led three NEA-funded companies, serving from 1987 to 1995 as Chairman and Chief Executive Officer at Genetic Therapy, Inc. and from 1982 to 1987 as President and Chief Executive Officer at Life Technologies, Inc. and its predecessor, Bethesda Research Laboratories, Inc. Previously, Dr. Barrett worked at SmithKline Beecham Corporation, where he held a variety of positions, including President of its In Vitro Diagnostic Division and President of SmithKline Clinical Laboratories. He currently serves on the boards of directors of the publicly held life sciences companies Amicus Therapeutics, Inc., Clovis Oncology, Inc. and Supernus Pharmaceuticals, Inc. Within the past five years, he has served on the board of directors of the publicly traded companies Inhibitex, Inc. (acquired by Bristol-Myers Squibb Co.), YM Biosciences, Inc. and Targacept, Inc. Dr. Barrett received a Ph.D. in biochemistry from the University of Tennessee, an M.B.A. from the University of Santa Clara and a B.S. from Boston College. The board of directors believes that Dr. Barrett's experience overseeing NEA investments in biotechnology, serving as a member of the board of directors of other public companies, prior senior management experience, including as president and chief executive officer of biopharmaceutical companies, and his strong capital markets experience allow him to make valuable contributions to the board.

John J. Baldwin, Ph.D.

Dr. Baldwin has served as a member of our board of directors since 2003. Dr. Baldwin co-founded and has served on the boards of directors of Hua Medicine Ltd. and CarysBio Holdings Co., Ltd. since 2008 and 2011, respectively. From 2001 to 2008, Dr. Baldwin served as co-founder, President and Chief Scientific Officer at VITAE Pharmaceuticals, Inc., a pharmaceutical company. Prior to that, he served as co-founder and Chief Scientific and Technology Officer at Pharmacopeia, Inc., a biopharmaceutical company, from 1993 to 2001. In 2000, he also co-founded WuXi PharmaTech, a research and development service company located in China, and served on its board of directors from 2005 to 2007. Prior to Pharmacopeia, Dr. Baldwin spent over 30 years in various scientific and management positions at Merck & Co., a pharmaceutical company, most recently as Distinguished Senior Scientist. Dr. Baldwin received a B.S. from the University of Delaware and a Ph.D. in organic chemistry from the University of Minnesota. The board of directors believes that Dr. Baldwin's extensive scientific and managerial experience allows him to make valuable contributions to the board.

William M. Gust

Mr. Gust has served as a member of our board of directors since 2006. Since August 2009, Mr. Gust has served as co-founder, President and Chief Executive Officer at Plasmonix, Inc. an early stage nanomaterials company serving the life sciences industry. From 1994 to 2012, Mr. Gust served as Managing General Partner at Anthem Capital

Management, a venture capital firm. Prior to his venture capital career, Mr. Gust was with First Boston and L.F. Rothschild in security analysis and investment banking. Mr. Gust received a B.A. from Northwestern University. The board of directors believes that Mr. Gust's extensive investment and managerial experience, including his experience in working with entrepreneurial companies, allows him to make valuable contributions to the board.

Michael A. Henos

Mr. Henos has served as a member of our board of directors since 2003. Mr. Henos is the founder of, and since 1993 has served as Managing General Partner at, Alliance Technology Ventures, L.P., a venture capital firm, where he focuses on investments in biotechnology and personalized medicine. From 1991 to 2001, Mr. Henos also served as a General Partner at Aspen Ventures, a venture capital partnership. Mr. Henos previously served as a Vice President at 3i Ventures Corporation, the predecessor of Aspen Ventures, from 1986 to 1991. From 1984 to 1986, Mr. Henos served as a healthcare consultant with Ernst & Young, specializing in venture financing of startup medical technology companies. Before joining Ernst & Young, Mr. Henos served in a variety of operating management positions and co-founded and served as Chief Executive Officer at ProMed Technologies, Inc. Within the past five years, Mr. Henos has served as Chairman or as a director of the publicly traded companies Inhibitex, Inc., Genoptix, Inc. (acquired by Novartis Corporation) and AtheroGenics, Inc. Mr. Henos received a B.S. and an M.B.A. from the University of California at Los Angeles. The board of directors believes that Mr. Henos's extensive experience as a past director of several public companies, including biopharmaceutical companies, as well as his financial expertise, allow him to make valuable contributions to the board.

Franklin H. Top, Jr., M.D.

Dr. Top has served as a member of our board of directors since 2003. Dr. Top joined MedImmune, LLC, a pharmaceutical company, as Executive Vice President in 1988 and became Medical Director in 1990, serving in that position until 2003. Dr. Top also served as a member of MedImmune's board of directors from 1988 to 2003. From 2004 until his retirement in 2010, Dr. Top served as Senior Vice President of MedImmune's venture capital affiliate, MedImmune Ventures Inc. From 1987 to 1988, Dr. Top served as Senior Vice President for Clinical and Regulatory Affairs at Praxis Biologics, a biotechnology company. Prior to 1987, Dr. Top served for 22 years in the U.S. Army Medical Research and Development Command where he was appointed Director and Commandant, Walter Reed Army Institute of Research in 1983. Dr. Top received an M.D. and a B.S. from Yale University. The board of directors believes that Dr. Top's extensive scientific and managerial experience, including his experience in working with entrepreneurial companies as a venture capital investor, allows him to make valuable contributions to the board.

Board Composition

Our board of directors currently consists of seven members. Each director is currently elected to the board for a one-year term, to serve until the election and qualification of successor directors at the annual meeting of stockholders, or until the director's earlier removal, resignation or death.

Our directors were elected to and currently serve on the board pursuant to a stockholders agreement among us and several of our largest stockholders. This agreement will terminate upon the completion of this offering, after which there will be no further contractual obligations regarding the election of our directors.

In accordance with our amended and restated certificate of incorporation, which will be in effect upon the completion of this offering, our board of directors will be divided into three classes, each of which will consist, as nearly as possible, of one-third of the total number of directors constituting our entire board and which will serve staggered three-year terms. At each annual meeting of stockholders, the successors to directors whose terms then expire will be elected to serve from the time of election and qualification until the third annual meeting following election. Our directors will be divided among the three classes as follows:

- Class I, which will consist of Ms. King and Mr. Henos, and their term will expire at our first annual meeting of stockholders to be held after the completion of this offering;
- Class II, which will consist of Drs. Barrett, Magnani and Baldwin, and their term will expire at our second annual meeting of stockholders to be held after the completion of this offering; and
- Class III, which will consist of Mr. Gust and Dr. Top, and their term will expire at our third annual meeting of stockholders to be held after the completion of this offering.

Our amended and restated bylaws, which will become effective upon the completion of this offering, will provide that the authorized number of directors may be changed only by resolution approved by a majority of our board of directors. Any additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of the directors.

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

Director Independence

Our board of directors has undertaken a review of the independence of our directors and considered whether any director has a material relationship with us that could compromise his or her ability to exercise independent judgment in carrying out his or her responsibilities. As a result of this review, our board of directors has determined that Drs. Barrett, Baldwin and Top and Messrs. Gust and Henos, representing five of our seven directors, are "independent directors" as defined under NASDAQ listing rules.

Committees of the Board of Directors

Our board of directors has established an audit committee, a compensation committee and a nominating and corporate governance committee, each of which has the composition and responsibilities described below. From time to time, the board may establish other committees to facilitate the management of our business.

Audit Committee

Our audit committee reviews our internal accounting procedures and consults with and reviews the services provided by our independent registered public accountants. Our audit committee consists of three directors, Dr. Barrett, Mr. Henos and Mr. Gust. Mr. Henos is the chairman of the audit committee and our board of directors has determined that each of Dr. Barrett and Mr. Henos are "audit committee financial experts" as defined by SEC rules and regulations. Under Rule 10A-3 under the Securities Exchange Act of 1934, as amended, or the Exchange Act, we are permitted to phase in our compliance with the independent audit committee requirements set forth in NASDAQ Rule 5605(c) and Rule 10A-3 under the Exchange Act as follows: (1) one independent member at the time of listing, (2) a majority of independent members within 90 days of listing and (3) all independent members within one year of listing. Our board of directors has determined that each of Messrs. Henos and Gust are independent directors under NASDAQ listing rules and under Rule 10A-3 under the Exchange Act, as amended. Within one year of our listing on The NASDAQ Global Market, we expect that Dr. Barrett will have resigned from our audit committee and that any new directors added to the audit committee will be independent under NASDAQ listing rules and Rule 10A-3. We intend to continue to evaluate the requirements applicable to us and we intend to comply with future requirements to the extent that they become applicable to our audit committee. The principal duties and responsibilities of our audit committee include:

- appointing and retaining an independent registered public accounting firm to serve as independent auditor to audit our financial statements, overseeing the independent auditor's work and determining the independent auditor's compensation;
- approving in advance all audit services and non-audit services to be provided to us by our independent auditor;
- establishing procedures for the receipt, retention and treatment of complaints received by us regarding accounting, internal accounting controls, auditing or compliance matters, as well as for the confidential, anonymous submission by our employees of concerns regarding questionable accounting or auditing matters;
- reviewing and discussing with management and our independent auditor the results of the annual audit and the independent auditor's review of our quarterly financial statements; and
- conferring with management and our independent auditor about the scope, adequacy and effectiveness of our internal accounting controls, the objectivity of our financial reporting and our accounting policies and practices.

Compensation Committee

Our compensation committee reviews and determines the compensation of all our executive officers. Our compensation committee consists of two directors, Dr. Barrett and Mr. Henos, each of whom is a non-employee member of our board of directors as defined in Rule 16b-3 under the Exchange Act and an outside director under Section 162(m) of the Code. Dr. Barrett is the chairman of the compensation committee. Our board of directors has determined that the composition of our compensation committee satisfies the applicable independence requirements under, and the functioning of our compensation committee complies with the applicable requirements of, NASDAQ listing rules and SEC rules and regulations. We intend to continue to evaluate and intend to comply with all future requirements applicable to our compensation committee. The principal duties and responsibilities of our compensation committee include:

- establishing and approving, and making recommendations to the board of directors regarding, performance goals and objectives relevant to the compensation of our chief executive officer, evaluating the performance of our chief executive officer in light of those goals and objectives and setting, or recommending to the full board of directors for approval, the chief executive officer's compensation, including incentive-based and equity-based compensation, based on that evaluation;
- setting the compensation of our other executive officers, based in part on the recommendations of our chief executive officer;
- exercising administrative authority under our equity incentive plans and other employee benefit plans;
- establishing policies and making recommendations to our board of directors regarding director compensation;
- reviewing and discussing with management the compensation discussion and analysis that we may be required from time to time to include in SEC filings; and
- preparing a compensation committee report on executive compensation as may be required from time to time to be included in our annual proxy statements or annual reports on Form 10-K filed with the SEC.

Nominating and Corporate Governance Committee

The nominating and corporate governance committee consists of three directors, Mr. Gust , Dr. Top and Dr. Baldwin. Mr. Gust is the chairman of the nominating and corporate governance committee. Our board of directors has determined that the composition of our nominating and corporate governance committee satisfies the applicable independence requirements under, and the functioning of our nominating and corporate governance committee complies with the applicable requirements of, NASDAQ listing rules and SEC rules and regulations. We will continue to evaluate and will comply with all future requirements applicable to our nominating and corporate governance committee. The nominating and corporate governance committee's responsibilities include:

- assessing the need for new directors and identifying individuals qualified to become directors;
- recommending to the board of directors the persons to be nominated for election as directors and to each of the board's committees;
- assessing individual director performance, participation and qualifications;
- developing and recommending to the board corporate governance principles;
- monitoring the effectiveness of the board and the quality of the relationship between management and the board; and
- overseeing an annual evaluation of the board's performance.

Code of Business Conduct and Ethics for Employees, Executive Officers and Directors

Effective upon the completion of this offering, we have adopted a Code of Business Conduct and Ethics, or the Code of Conduct, applicable to all of our employees, executive officers and directors. Following the completion of this offering, the Code of Conduct will be available on our website at *www.glycomimetics.com*. The nominating and corporate governance committee of our board of directors will be responsible for overseeing the Code of Conduct and must approve any waivers of the Code of Conduct for executive officers and directors. We expect that any amendments to the Code of Conduct, or any waivers of its requirements, will be disclosed on our website.

Compensation Committee Interlocks and Insider Participation

None of our directors who currently serve as members of our compensation committee is, or has at any time during the past year been, one of our officers or employees. None of our executive officers currently serves, or in the past year has served, as a member of the board of directors or compensation committee of any other entity that has one or more executive officers serving on our board of directors or compensation committee.

Non-Employee Director Compensation

We have not historically paid cash retainers or other compensation with respect to service on our board of directors, except for reimbursement of direct expenses incurred in connection with attending meetings of our board of directors or committees of our board of directors.

None of our non-employee directors received compensation for service on our board of directors during the year ended December 31, 2012 and, accordingly, we have not included a 2012 Director Compensation Table. Ms. King, our President and Chief Executive Officer, and Dr. Magnani, our Vice President of Research and Chief Scientific Officer, are also directors, but do not receive any additional compensation for their service as directors. Ms. King's and Dr. Magnani's compensation as executive officers is set forth below under "Executive Compensation—2012 Summary Compensation Table."

In September 2013, our board of directors approved a non-employee director compensation policy to be effective upon the completion of this offering.

Under this director compensation policy, we will pay each of our non-employee directors a cash retainer for service on the board of directors and for service on each committee on which the director is a member. The chairman of each committee will receive a higher retainer for such service. These retainers are payable in arrears in four equal quarterly installments on the last day of each quarter, provided that the amount of such payment will be prorated for any portion of such quarter that the director is not serving on our board of directors. No retainers will be paid in respect of any period prior to the completion of this offering. The retainers paid to non-employee directors for service on the board of directors and for service on each committee of the board of directors on which the director is a member are as follows:

	MEMBER ANNUAL SERVICE RETAINER	CHAIRMAN ADDITIONAL ANNUAL SERVICE RETAINER
Board of Directors	$30,000	$22,500
Audit Committee	7,000	7,000
Compensation Committee	5,000	5,000
Nominating and Corporate Governance Committee	3,000	3,000

We will also continue to reimburse our non-employee directors for reasonable travel and out-of-pocket expenses incurred in connection with attending our board of director and committee meetings.

In addition, under our director compensation policy, each non-employee director serving on our board of directors upon the completion of this offering and each non-employee director elected to our board of directors after the completion of this offering will receive an option to purchase a number of shares of our common stock equal to approximately 0.082% of the number of shares of our common stock that will be outstanding upon the completion of this offering. Based upon the number of shares we expect to sell as set forth on the cover of this prospectus, we expect that each such option grant will be for approximately 14,000 shares. With respect to each non-employee director serving on our board of directors upon the completion of this offering, these options will vest concurrently with the expiration of the initial term of office for the class in which such director serves, subject to the director's continued service as a director. Further, on the date of the each annual meeting of stockholders held after the completion of this offering, each non-employee director that continues to serve as a non-employee member on our board of directors will receive an option to purchase a number of shares of our common stock equal to approximately

0.041% of the number of shares of our common stock that will be outstanding upon the completion of this offering. Based upon the number of shares we expect to sell as set forth on the cover of this prospectus, we expect that each such option grant will be for approximately 7,000 shares. The exercise price of these options will equal the fair market value of our common stock on the date of grant.

This policy is intended to provide a total compensation package that enables us to attract and retain qualified and experienced individuals to serve as directors and to align our directors' interests with those of our stockholders.

Non-Employee Director Equity Outstanding at 2012 Year End

The following table provides information about outstanding stock options held by each of our non-employee directors as of December 31, 2012. All of these options were granted under our 2003 stock incentive plan.

	OPTION AWARDS
M. James Barrett, Ph.D	12,295
John J. Baldwin, Ph.D	12,295
William M. Gust	12,295
Michael A. Henos	12,295
Franklin H. Top, Jr., M.D.	12,295

EXECUTIVE COMPENSATION

Our named executive officers for the year ended December 31, 2012 include our principal executive officer and our three other executive officers:

- Rachel King, our President and Chief Executive Officer;
- John Magnani, Ph.D., our Vice President of Research and Chief Scientific Officer;
- Helen Thackray, M.D., our Vice President of Clinical Development and Chief Medical Officer; and
- Brian Hahn, our Chief Financial Officer.

No other individuals served as executive officers of our company at any point during 2012.

2012 Summary Compensation Table

The following table presents the compensation awarded to, earned by or paid to each of our named executive officers for the year ended December 31, 2012.

NAME AND PRINCIPAL POSITION	SALARY ($)	BONUS ($)[1]	OPTION AWARDS ($)[2]	NON-EQUITY INCENTIVE PLAN COMPENSATION ($)[3]	ALL OTHER COMPENSATION ($)[4]	TOTAL ($)
Rachel King President and Chief Executive Officer	355,000	12,425	—	86,975	180	454,580
John Magnani, Ph.D. Chief Scientific Officer	285,000	7,125	—	49,875	180	342,180
Helen Thackray, M.D. Chief Medical Officer	305,000	7,625	—	53,375	180	366,180
Brian Hahn Chief Financial Officer	190,000	3,800	112,187	26,600	180	332,767

(1) The amounts reflect the discretionary bonus paid for performance during 2012, as discussed further below under "—Narrative to Summary Compensation Table—Annual Bonus."

(2) The amounts reflect the full grant date fair value for awards granted during 2012. The grant date fair value was computed in accordance with ASC Topic 718, *Compensation—Stock Compensation*. Unlike the calculations contained in our financial statements, this calculation does not give effect to any estimate of forfeitures related to service-based vesting, but assumes that the executive will perform the requisite service for the award to vest in full. The assumptions we used in valuing options are described in Note 5 to our audited financial statements included in this prospectus.

(3) The amounts reflect the portion of each officer's target bonus paid based on the achievement of our 2012 corporate goal of completing patient accrual in our Phase 2 clinical trial of GMI-1070, as discussed further below under "—Narrative to Summary Compensation Table—Annual Bonus."

(4) The amounts reflect insurance premiums paid by us during 2012 with respect to life insurance for the benefit of the officer.

Narrative to 2012 Summary Compensation Table

We review compensation annually for all employees, including our executives. In setting executive base salaries and bonuses and granting equity incentive awards, we consider compensation for comparable positions in the market, the historical compensation levels of our executives, individual performance as compared to our expectations and objectives, our desire to motivate our employees to achieve short- and long-term results that are in the best interests of our stockholders and a long-term commitment to our company. We do not target a specific competitive position or a specific mix of compensation among base salary, bonus or long-term incentives.

The compensation committee of our board of directors has historically determined our executives' compensation. Our compensation committee typically reviews and discusses management's proposed compensation with the chief executive officer for all executives other than the chief executive officer. Based on those discussions and its discretion, the compensation committee then recommends the compensation for each executive officer. Our

compensation committee, without members of management present, discusses and ultimately approves the compensation of our executive officers. To date, our compensation committee has not engaged a compensation consultant or adopted a peer group of companies for purposes of determining executive compensation.

Annual Base Salary

The following table presents the base salaries for each of our named executive officers for the years 2012 and 2013. The 2012 base salaries became effective on January 1, 2012 and the 2013 base salaries became effective on January 1, 2013 for all of the named executive officers.

NAME	2012 BASE SALARY ($)	2013 BASE SALARY ($)
Rachel King	355,000	365,650
John Magnani, Ph.D.	285,000	293,550
Helen Thackray, M.D.	305,000	314,500
Brian Hahn	190,000	200,000(1)

(1) In September 2013, Mr. Hahn's base salary was increased to $250,000.

In August 2013, our compensation committee approved increases in the named executive officers' salaries, effective upon the completion of this offering, to $417,900 for Ms. King, $310,000 for Dr. Magnani, $345,500 for Dr. Thackray and $286,000 for Mr. Hahn.

Annual Bonus

We seek to motivate and reward our executives for achievements relative to our corporate goals and expectations for each fiscal year. Each named executive officer has a target bonus opportunity, defined as a percentage of his or her annual salary. For 2012 and 2013, the target bonus was as follows:

NAME	2012 TARGET BONUS (% OF SALARY)	2013 TARGET BONUS (% OF SALARY)
Rachel King	35	35
John Magnani, Ph.D.	25	25
Helen Thackray, M.D.	25	25
Brian Hahn	20	25

In August 2013, our compensation committee approved increases in the named executive officers' target bonuses, effective upon the completion of this offering, to 50% for Ms. King and 35% for each of Dr. Magnani, Dr. Thackray and Mr. Hahn.

To reinforce the importance of integrated and collaborative leadership, our executives' bonuses have historically been solely based on company performance, and we did not include an individual performance component.

For 2012, 70% of each executive officer's target bonus was attributable to our corporate goal of completing patient accrual in our Phase 2 clinical trial of GMI-1070. This goal was substantially fully achieved as of the end of the year, and therefore each executive officer was awarded 70% of his or her target bonus for the year. Such amounts are reflected in the "Non-Equity Incentive Plan" column of the Summary Compensation Table above.

The remaining 30% of each executive officer's target bonus was based on a number of corporate objectives, taken together. The specific objectives considered by our compensation committee in determining the level of achievement for this 30% of the target bonus included:

- completing toxicology and safety studies, as well as initial process development and the initiation of manufacturing, all in support of our proposed IND for GMI-1271;
- completing preclinical studies to support the selection of new drug candidates for further development;
- identifying and initiating other new preclinical research programs; and
- increasing our company's visibility through publications, presentations and participation in conferences.

There was no specific weighting attributable to the achievement of any one of these objectives. Rather, the compensation committee made a subjective assessment of our achievement of these goals, after taking into account our chief executive officer's input as to their level of achievement. Based on these factors, in its sole discretion, our compensation committee determined to award each executive officer a discretionary amount equal to 10% of each executive officer's target bonus for the year, out of the 30% available. This 10% component is reflected in the "Bonus" column of the 2012 Summary Compensation Table above.

Long-Term Incentives

Our 2003 stock incentive plan authorizes us to make grants to eligible recipients of non-qualified stock options, incentive stock options and restricted stock awards. All of our awards under this plan have been in the form of stock options.

We typically grant stock options at the start of employment to each executive and our other employees. Through 2012, we have not maintained a practice of granting additional equity on an annual basis, but we have retained discretion to provide additional targeted grants in appropriate circumstances.

We award stock options on the date the compensation committee approves the grant. We set the option exercise price and grant date fair value based on our per-share valuation on the date of grant.

In 2012, we awarded a stock option to Mr. Hahn in connection with his promotion to our Chief Financial Officer. This was the only option grant to any of our named executive officers in 2012.

Our compensation committee has approved, subject to its final approval prior to the completion of this offering, the grant of stock options to our named executive officers upon the effective date of the registration statement of which this prospectus is a part. We expect to grant options to Ms. King, Dr. Magnani, Dr. Thackray and Mr. Hahn to purchase a number of shares equal to approximately 2.0%, 0.9%, 0.6% and 0.2%, respectively, of the number of shares of our common stock that will be outstanding upon the completion of this offering. Based upon the number of shares we expect to sell as set forth on the cover of this prospectus, we expect that these option grants to our named executive officers will be for approximately 505,000 shares in the aggregate. All such option grants will have an exercise price equal to the initial public offering price per share in this offering.

Employment Arrangements

Please see "—Potential Payments upon Termination of Employment or upon Change in Control" for information regarding the employment and severance agreements for each of our named executive officers.

Outstanding Equity Awards at End of 2012

The following table provides information about outstanding stock options held by each of our named executive officers at December 31, 2012. All of these options were granted under our 2003 stock incentive plan. None of our named executive officers held restricted stock or other stock awards at the end of 2012.

NAME	NUMBER OF SECURITIES UNDERLYING UNEXERCISED OPTIONS (#) EXERCISABLE	NUMBER OF SECURITIES UNDERLYING UNEXERCISED OPTIONS (#) UNEXERCISABLE	OPTION EXERCISE PRICE ($)	OPTION EXPIRATION DATE
Rachel King	4,542	—	1.12	10/31/2014
	45,487	—	1.12	07/30/2016
	436,543	114,879[1]	1.12	01/03/2021
John Magnani, Ph.D.	2,271	—	1.12	10/31/2014
	21,017	—	1.12	07/30/2016
	205,972	54,203[1]	1.12	01/03/2021
Helen Thackray, M.D.	9,085	—	1.12	08/23/2016
	138,961	36,568[1]	1.12	01/03/2021
Brian Hahn	17,429	7,176[2]	1.12	01/03/2021
	—	73,859[3]	1.98	03/19/2022

(1) The unvested shares underlying this option vest in 10 equal monthly installments through October 21, 2013, subject to the officer's continued service through each applicable vesting date.

(2) The unvested shares underlying this option vest in 14 equal monthly installments through February 16, 2014, subject to the officer's continued service through each applicable vesting date.

(3) 25% of the total shares underlying this option vested on January 1, 2013. The remaining shares vest 1/36th monthly through January 1, 2016, subject to the officer's continued service through each applicable vesting date.

Stock Option Exercises During 2012

None of our named executive officers exercised stock options during 2012 or held stock awards that vested in 2012.

Pension Benefits

Our named executive officers did not participate in, or otherwise receive any benefits under, any pension or retirement plan sponsored by us during 2012.

Nonqualified Deferred Compensation

Our named executive officers did not participate in, or otherwise receive any benefits under, any nonqualified deferred compensation plan sponsored by us during 2012.

Potential Payments upon Termination of Employment or upon Change in Control

In September 2013, our board of directors approved a form of amended and restated employment agreement to be entered into with each of our executive officers upon the completion of this offering. Pursuant to these employment agreements, each executive officer is eligible for severance benefits in specified circumstances. Under the terms of the agreements, upon execution and effectiveness of a severance agreement and release of claims, each executive officer will be entitled to severance payments if we terminate his or her employment without cause, or he or she terminates employment with us for good reason.

The following definitions have been adopted in these employment agreements:

- "cause" means that we have determined in our sole discretion that any of the following occurred: (a) the executive officer's breach of fiduciary duty or substantial misconduct with respect to our business and affairs, (b) the executive officer's neglect of duties or failure to act which can reasonably be expected to materially adversely affect our business or affairs, (c) the executive officer's material breach of the employment agreement, or of any provision of the proprietary information, assignment of inventions, noncompetition and nonsolicitation agreement to which the executive is a party which, to the extent curable, is not cured within 15 days after written notice thereof is given to the executive officer, (d) the commission by the executive officer of an act involving moral turpitude or fraud, (e) the executive officer's conviction of any felony, or of any misdemeanor involving fraud, theft, embezzlement, forgery or moral turpitude, (f) other conduct by the executive officer that is materially harmful to our business or reputation, or (g) the expiration of the employment agreement;
- "good reason" means any of the following without the executive officer's prior written consent: (a) any material diminution of the executive officer's duties or responsibilities under the employment agreement (except in each case in connection with a termination for cause or as a result of the executive officer's death or disability), or the assignment to the executive officer of duties or responsibilities that are materially inconsistent with the executive officer's then-current position, with the exception of certain situations involving the acquisition of the company; (b) any material breach of the employment agreement by us which we have not cured within 15 business days after written notice thereof is given to us; or (c) a relocation of the executive officer from our principal office to a location more than 35 miles from the location of our principal office, other than on required travel by the executive officer on business or on a temporary basis not to exceed a period equal to two calendar months; and
- "change in control" means any of the following: (a) a sale, lease, exchange or other transfer in one transaction or a series of related transactions of all or substantially all of our assets, other than the transfer of our assets to a majority-owned subsidiary corporation; (b) a merger or consolidation in which we are not the surviving corporation, unless the holders of our outstanding voting stock immediately prior to such transaction own, immediately after such transaction, securities representing at least 50% of the voting

power of the corporation or other entity surviving such transaction; (c) a reverse merger in which we are the surviving corporation but the shares of our common stock outstanding immediately preceding the merger are converted by virtue of the merger into other property, whether in the form of securities, cash or otherwise, unless the holders of our outstanding voting stock immediately prior to such transaction own, immediately after such transaction, securities representing at least 50% of our voting power; or (d) any transaction or series of related transactions in which in excess of 50% of our voting power is transferred; provided that, where required to avoid additional taxation under Section 409A of the Code, the event that occurs must also be a "change in the ownership or effective control of a corporation, or a change in the ownership of a substantial portion of the assets of a corporation" as defined under applicable regulations.

The following table summarizes the schedule of severance payments our executive officers would receive in the event of a qualifying termination.

SCENARIO AND EXECUTIVE LEVEL	SALARY CONTINUATION[1]	BONUS	CONTINUATION OF EMPLOYER PORTION OF MEDICAL, DENTAL AND VISION BENEFIT PREMIUMS	ACCELERATION OF UNVESTED EQUITY AWARDS
Prior to or More than 12 Months Following a Change in Control				
Chief Executive Officer	18 months	None	18 months	None
Chief Scientific Officer	18 months	None	18 months	None
Other Executive Officers	12 months	None	12 months	None
Within 12 Months Following a Change in Control				
Chief Executive Officer	18 months	Prorated Target Bonus[2]	18 months	Full Acceleration[3]
Chief Scientific Officer	18 months	Prorated Target Bonus[2]	18 months	Full Acceleration[3]
Other Executive Officers	12 months	Prorated Target Bonus[2]	12 months	Full Acceleration[3]

(1) If the termination is prior to or more than 12 months following a change in control, the executive officer's salary continuation will be paid on our regular payroll dates, less applicable withholdings and deductions. If the termination is within 12 months following a change in control, the executive officer's salary continuation will be paid in a lump-sum cash payment, less applicable withholdings and deductions, within 60 days following the change in control termination.

(2) The executive officer will receive payment of the executive officer's target bonus award for the year in which the executive officer's employment terminates, prorated through the date of the change in control termination, payable in a lump-sum cash payment, less applicable withholdings and deductions, within 60 days following the change in control termination.

(3) The executive officer will receive accelerated vesting of all then unvested equity awards that he or she may have, if any.

Health and Welfare Benefits

We maintain a defined contribution employee retirement plan for our employees. Our 401(k) plan is intended to qualify as a tax-qualified plan under Section 401 of the Internal Revenue Code so that contributions to our 401(k) plan, and income earned on such contributions, are not taxable to participants until withdrawn or distributed from the 401(k) plan. Our 401(k) plan provides that each participant may contribute a portion of his or her pre-tax compensation, up to a statutory limit, which is $17,500 for 2013. Participants who are at least 50 years old can also make "catch-up" contributions, which in 2013 may be up to an additional $5,500 above the statutory limit. Under our 401(k) plan, each employee is fully vested in his or her deferred salary contributions. Employee contributions are held and invested by the plan's trustee, subject to participants' ability to give investment directions by following specified procedures. We do not currently make discretionary contributions or matching contributions to our 401(k) plan.

We do not provide perquisites or personal benefits to our named executive officers. We do, however, pay the premiums for term life insurance for all of our employees, including our named executive officers.

Equity Incentive Plans

2013 Equity Incentive Plan

Our board of directors has adopted, and our stockholders have approved, our 2013 Equity Incentive Plan, or our 2013 plan. We do not expect to issue equity awards under our 2013 plan prior to the completion of this offering although, as described above under "—Narrative to 2012 Summary Compensation Table—Long-Term Incentives," our compensation committee has approved the grant of stock options to our executive officers under the 2013 Plan, which grants will be effective upon the effective date of the registration statement of which this prospectus is a part. Our 2013 plan will provide for the grant of incentive stock options within the meaning of Section 422 of the Internal Revenue Code, or the Code, to our employees and our 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 our employees, including officers, consultants and directors. Our 2013 plan will also provide for the grant of performance cash awards to our employees, consultants and directors.

Authorized Shares

The maximum number of shares of our common stock that may be issued under our 2013 plan is 1,000,000 shares, plus any shares subject to stock options or similar awards granted under our 2003 Stock Incentive Plan that expire or terminate without having been exercised in full or are forfeited to or repurchased by us. The number of shares of our common stock reserved for issuance under our 2013 plan will automatically increase on January 1 of each year, for a period of 10 years, from January 1, 2014 continuing through January 1, 2023, by 3% of the total number of shares of our common stock outstanding on December 31 of the preceding calendar year, or a lesser number of shares as may be determined by our 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.

Shares issued under our 2013 plan may be authorized but unissued or reacquired shares of our common stock. Shares subject to stock awards granted under our 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 our 2013 plan. Additionally, shares issued pursuant to stock awards under our 2013 plan that we repurchase or that are forfeited, as well as shares reacquired by us 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 our 2013 plan.

Administration

Our board of directors, or a duly authorized committee thereof, has the authority to administer our 2013 plan. Our board of directors has delegated its authority to administer our 2013 plan to our compensation committee under the terms of the compensation committee's charter. Our board of directors may also delegate to one or more of our officers the authority to (i) designate employees other than officers to receive specified stock awards and (ii) determine the number of shares of our common stock to be subject to such stock awards. Subject to the terms of our 2013 plan, the administrator has the authority to determine the terms of awards, including recipients, the exercise price or strike price of stock awards, if any, the number of shares subject to each stock award, the fair market value of a share of our common stock, the vesting schedule applicable to the awards, together with any vesting acceleration, the form of consideration, if any, payable upon exercise or settlement of the stock award and the terms and conditions of the award agreements for use under our 2013 plan.

The administrator has the power to modify outstanding awards under our 2013 plan. Subject to the terms of our 2013 plan, the administrator has the authority to reprice any outstanding option or stock appreciation right, cancel and re-grant any outstanding option or stock appreciation right in exchange for new stock awards, cash or other consideration or take any other action that is treated as a repricing under GAAP, with the consent of any adversely affected participant.

Section 162(m) Limits

No participant may be granted stock awards covering more than 2,000,000 shares of our common stock under our 2013 plan during any calendar year pursuant to stock options, stock appreciation rights and other stock awards whose value is determined by reference to an increase over an exercise price or strike price of at least 100% of the fair market value of our common stock on the date of grant. Additionally, no participant may be granted in a

calendar year a performance stock award covering more than 2,000,000 shares of our common stock or a performance cash award having a maximum value in excess of $3.0 million under our 2013 plan. These limitations enable us to grant awards that will be exempt from the $1.0 million limitation on the income tax deductibility of compensation paid per covered executive officer imposed by Section 162(m) of the Code.

Performance Awards

Our 2013 plan permits the grant of performance-based stock and cash awards that may qualify as performance-based compensation that is not subject to the $1.0 million limitation on the income tax deductibility of compensation paid per covered executive officer imposed by Section 162(m) of the Code. To enable us to grant performance-based awards that will qualify, our compensation committee can structure such awards so that the stock or cash will be issued or paid pursuant to such award only following the achievement of specified pre-established performance goals during a designated performance period.

Corporate Transactions

Our 2013 plan provides that in the event of a specified corporate transaction, including without limitation a consolidation, merger or similar transaction involving our company, the sale, lease or other disposition of all or substantially all of the assets of our company or the consolidated assets of our company and our subsidiaries, or a sale or disposition of at least 50% of the outstanding capital stock of our company, the administrator will determine how to treat each outstanding equity award. The administrator may:

- arrange for the assumption, continuation or substitution of an equity award by a successor corporation;
- arrange for the assignment of any reacquisition or repurchase rights held by us to a successor corporation;
- accelerate the vesting of the equity award and provide for its termination prior to the effective time of the corporate transaction;
- arrange for the lapse, in whole or in part, of any reacquisition or repurchase right held by us; or
- cancel the equity award prior to the transaction in exchange for a cash payment, which may be reduced by the exercise price payable in connection with the equity award.

The administrator is not obligated to treat all equity awards or portions of equity awards, even those that are of the same type, in the same manner. The administrator may take different actions with respect to the vested and unvested portions of an equity award.

Change in Control

The administrator may provide, in an individual award agreement or in any other written agreement between us and the participant, that the equity award will be subject to additional acceleration of vesting and exercisability in the event of a change in control. In the absence of such a provision, no such acceleration of the award will occur.

Plan Amendment or Termination

Our board has the authority to amend, suspend or terminate our 2013 plan, provided that such action does not materially impair the existing rights of any participant without such participant's written consent. No incentive stock options may be granted after the tenth anniversary of the date our board of directors adopts our 2013 plan.

2003 Stock Incentive Plan

Our board of directors adopted, and our stockholders approved, the 2003 Stock Incentive Plan, or the 2003 plan, in May 2003. Our 2003 plan was most recently amended by our board of directors and our stockholders in March 2012. Our 2003 plan provided for the grant of incentive stock options within the meaning of Section 422 of the Code to our employees, and for the grant of nonstatutory stock options and restricted stock awards to our officers, directors, employees, consultants and advisers. Pursuant to its terms, our 2003 plan automatically expired in May 2013.

Authorized Shares

We previously reserved 1,523,017 shares of our common stock for issuance under our 2003 plan. As of September 30, 2013, 321,648 shares of our common stock have been issued upon the exercise of options granted under our 2003 plan and options to purchase 1,173,287 shares of our common stock were outstanding at a weighted average exercise price of $1.24 per share. Effective upon the expiration of our 2003 plan, no further options or stock awards may be granted under our 2003 plan, but all outstanding stock awards continue to be governed by their existing terms.

Administration

Our board of directors, or a committee thereof appointed by our board of directors, administers our 2003 plan and the option and stock awards granted under it. Our board of directors delegated its authority to administer our 2003 plan to our compensation committee.

Corporate Transactions

Our 2003 plan provides that the administrator may provide that, in the event of a specified change of control transaction, including without limitation a dissolution or liquidation of our company, a merger, consolidation or reorganization of our company with one or more other entities in which our company is not the surviving entity, a sale of substantially all of the assets of our company or any transaction which results in the disposition of at least 60% of the voting power of our company, one or more of the following actions may be taken:

- the purchase of outstanding options for an amount of cash or property that could have been received upon the exercise of the options had the options been fully vested;
- the adjustment of the terms of the options to reflect the change of control transaction;
- the assumption or substitution of the options by a successor corporation; or
- the termination of the options immediately prior to the change of control transaction, provided that the holders of options are given a reasonable period of time to exercise the options with respect to at least 50% of the shares subject to the options, notwithstanding any limits on exercisability.

2013 Employee Stock Purchase Plan

Our board of directors has adopted, and our stockholders have approved, our 2013 Employee Stock Purchase Plan, or our 2013 ESPP. The 2013 ESPP will become effective upon the completion of this offering, but we have no current plans to grant purchase rights under our 2013 ESPP.

The maximum number of shares of our common stock that may be issued under our 2013 ESPP is 175,000 shares. Additionally, the number of shares of our common stock reserved for issuance under our 2013 ESPP will automatically increase on January 1 of each year, beginning on January 1 of the year after the completion of this offering and ending on and including January 1, 2023, by the lesser of (i) 1% of the total number of shares of our common stock outstanding on December 31 of the preceding calendar year, (ii) 1,000,000 shares of our common stock, or (iii) such lesser number of shares of common stock as determined by our board of directors. Shares subject to purchase rights granted under our 2013 ESPP that terminate without having been exercised in full will not reduce the number of shares available for issuance under our 2013 ESPP.

Our board of directors, or a duly authorized committee thereof, will administer our 2013 ESPP. Our board of directors has delegated its authority to administer our 2013 ESPP to our compensation committee under the terms of the compensation committee's charter.

Employees, including executive officers, of ours or any of our designated affiliates may have to satisfy one or more of the following service requirements before participating in our 2013 ESPP, as determined by the administrator: (i) customary employment with us or one of our affiliates for more than 20 hours per week and more than five months per calendar year, or (ii) continuous employment with us or one of our affiliates for a minimum period of time, not to exceed two years, prior to the first date of an offering. An employee may not be granted rights to purchase stock under our 2013 ESPP if such employee (i) immediately after the grant would own stock possessing 5% or more of the total combined voting power or value of all classes of our common stock, or (ii) holds rights to purchase stock under our 2013 ESPP that would accrue at a rate that exceeds $25,000 worth of our stock for each calendar year that the rights remain outstanding.

A component of our 2013 ESPP is intended to qualify as an employee stock purchase plan under Section 423 of the Code and the provisions of this component will be construed in a manner that is consistent with the requirements of Section 423 of the Code. In addition, the 2013 ESPP authorizes the grant of options to purchase shares of our common stock that do not meet the requirements of Section 423 of the Code because of deviations necessary to permit participation in the 2013 ESPP by employees who are foreign nationals or employed outside of the United States while complying with applicable foreign laws. Any such options must be granted pursuant to rules, procedures or subplans adopted by our board designed to achieve these objectives for eligible employees and our company. The

administrator may specify offerings with a duration of not more than 27 months, and may specify one or more shorter purchase periods within each offering. Each offering will have one or more purchase dates on which shares of our common stock will be purchased for the employees who are participating in the offering. The administrator, in its discretion, will determine the terms of offerings under our 2013 ESPP.

Our 2013 ESPP permits participants to purchase shares of our common stock through payroll deductions up to 15% of their earnings. Unless otherwise determined by the administrator, the purchase price of the shares will be 85% of the lower of the fair market value of our common stock on the first day of an offering or on the date of purchase. Participants may end their participation at any time during an offering and will be paid their accrued contributions that have not yet been used to purchase shares. Participation ends automatically upon termination of employment with us.

A participant may not transfer purchase rights under our 2013 ESPP other than by will, the laws of descent and distribution or as otherwise provided under our 2013 ESPP.

In the event of a specified corporate transaction, such as a merger or change in control of our company, a successor corporation may assume, continue or substitute each outstanding purchase right. If the successor corporation does not assume, continue or substitute for the outstanding purchase rights, the offering in progress will be shortened and a new exercise date will be set. The participants' purchase rights will be exercised on the new exercise date and such purchase rights will terminate immediately thereafter.

Our board of directors has the authority to amend, suspend or terminate our 2013 ESPP, at any time and for any reason. Our 2013 ESPP will remain in effect until terminated by our board of directors in accordance with the terms of the 2013 ESPP.

Limitations on Liability and Indemnification Matters

Upon the completion of this offering, our amended and restated certificate of incorporation will contain provisions that limit the liability of our current and former directors for monetary damages to the fullest extent permitted by Delaware law. Delaware law provides that directors of a corporation will not be personally liable for monetary damages for any breach of fiduciary duties as directors, except liability for:

- any breach of a director's duty of loyalty to the corporation or its stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- unlawful payments of dividends or unlawful stock repurchases or redemptions as provided in Section 174 of the Delaware General Corporation Law; or
- any transaction from which a director derived an improper personal benefit.

This limitation of liability does not apply to liabilities arising under federal securities laws and does not affect the availability of equitable remedies such as injunctive relief or rescission.

Our amended and restated certificate of incorporation and our amended and restated bylaws will provide that we are required to indemnify our directors to the fullest extent permitted by Delaware law. Our amended and restated bylaws will also provide that, upon satisfaction of certain conditions, we are required to advance expenses incurred by a director in advance of the final disposition of any action or proceeding, and permit us to secure insurance on behalf of any officer, director, employee or other agent for any liability arising out of his or her actions in that capacity regardless of whether we would otherwise be permitted to indemnify him or her under the provisions of Delaware law. Our amended and restated bylaws will also provide our board of directors with discretion to indemnify our officers and employees when determined appropriate by the board. We have entered into and expect to continue to enter into agreements to indemnify our directors, and we also expect to enter into agreements to indemnify our executive officers, as determined by the board of directors. With certain exceptions, these agreements provide for indemnification for related expenses including, among other things, attorneys' fees, judgments, fines and settlement amounts incurred by any of these individuals in any action or proceeding. We believe that these bylaw provisions and indemnification agreements are necessary to attract and retain qualified persons as directors. We also maintain customary directors' and officers' liability insurance.

The limitation of liability and indemnification provisions in our amended and restated certificate of incorporation and amended and restated bylaws may discourage stockholders from bringing a lawsuit against our directors for breach of their fiduciary duty. They may also reduce the likelihood of derivative litigation against our directors and officers, even though an action, if successful, might benefit us and other stockholders. Further, a stockholder's investment may be adversely affected to the extent that we pay the costs of settlement and damage awards against directors and officers as required by these indemnification provisions. At present, there is no pending litigation or proceeding involving any of our directors, officers or employees for which indemnification is sought and we are not aware of any threatened litigation that may result in claims for indemnification.

Rule 10b5-1 Sales Plans

Our directors and executive officers may adopt written plans, known as Rule 10b5-1 plans, in which they will contract with a broker to buy or sell shares of our common stock on a periodic basis. Under a Rule 10b5-1 plan, a broker executes trades pursuant to parameters established by the director or officer when entering into the plan, without further direction from them. The director or officer may amend a Rule 10b5-1 plan in some circumstances and may terminate a plan at any time. Our directors and executive officers also may buy or sell additional shares outside of a Rule 10b5-1 plan when they are not in possession of material nonpublic information subject to compliance with the terms of our insider trading policy. Prior to 180 days after the date of this offering, subject to early termination, the sale of any shares under such plan would be subject to the lock-up agreement that the director or officer has entered into with the underwriters.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

There have been no transactions since January 1, 2010 to which we have been a participant in which the amount involved exceeded or will exceed $120,000, and in which any of our directors, executive officers or holders of more than 5% of our capital stock, or any members of their immediate family, had or will have a direct or indirect material interest, other than compensation arrangements which are described under "Executive Compensation."

Participation in this Offering

Certain of our existing investors and their affiliated entities have indicated an interest in purchasing $11.0 million of shares of our common stock in this offering at the initial public offering price. Assuming an initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, these entities would purchase an aggregate of up to approximately 733,333 of the 4,000,000 shares in this offering based on these indications of interest. However, because indications of interest are not binding agreements or commitments to purchase, these stockholders may determine to purchase fewer shares than they indicate an interest in purchasing or not to purchase any shares in this offering. It is also possible that these stockholders could indicate an interest in purchasing more shares of our common stock. In addition, the underwriters could determine to sell fewer shares to any of these stockholders than the stockholders indicate an interest in purchasing or not to sell any shares to these stockholders.

Investor Rights Agreement

We have entered into an investor rights agreement, as amended, with our preferred stockholders, including entities affiliated with New Enterprise Associates and Genzyme Corporation, both of which beneficially own more than 5% of our common stock, family members and family trusts related to Rachel King, our Chief Executive Officer, and Claudia Henos, the spouse of one of our directors. The investor rights agreement, among other things:

- grants our preferred stockholders specified registration rights with respect to shares of our common stock, including shares of common stock issued or issuable upon conversion of the shares of convertible preferred stock held by them;
- obligates us to deliver periodic financial statements to some of the stockholders who are parties to the investor rights agreement; and
- grants a right of first refusal with respect to sales of our shares by us, subject to specified exclusions, which exclusions include the sale of the shares pursuant to this prospectus, to the stockholders who are parties to the investor rights agreement.

For more information regarding the registration rights provided in this agreement, please refer to the section titled "Description of Capital Stock—Registration Rights." The provisions of this agreement other than those relating to registration rights will terminate upon the completion of this offering.

Stockholders Agreement

We have entered into a stockholders agreement, as amended, with some of our stockholders, including entities affiliated with New Enterprise Associates and Genzyme Corporation, family members and family trusts related to Rachel King, our Chief Executive Officer, and Claudia Henos, the spouse of one of our directors. The stockholders agreement, among other things:

- provides for the voting of shares with respect to the constituency of our board of directors;
- provides for the voting of shares with respect to specified transactions approved by a majority of holders of our outstanding convertible preferred stock;
- grants our investors rights of first refusal and co-sale with respect to proposed transfers of our securities by specified stockholders; and
- grants us rights of first refusal with respect to proposed transfers of our securities by specified stockholders.

The stockholders agreement will terminate upon the completion of this offering.

Indemnification Agreements

Our amended and restated certificate of incorporation will contain provisions limiting the liability of directors, and our amended and restated bylaws will provide that we will indemnify each of our directors to the fullest extent permitted under Delaware law. Our amended and restated certificate of incorporation and amended and restated bylaws will also provide our board of directors with discretion to indemnify our officers and employees when determined appropriate by the board.

In addition, we have entered into an indemnification agreement with each of our directors and we intend to enter into similar agreements with our executive officers prior to the completion of this offering. For more information regarding these agreements, see "Executive Compensation—Limitations on Liability and Indemnification Matters."

Related Person Transaction Policy

Prior to this offering, we have not had a formal policy regarding approval of transactions with related parties. Prior to the completion of this offering, we expect to adopt a related person transaction policy that sets forth our procedures for the identification, review, consideration and approval or ratification of related person transactions. The policy will become effective immediately upon the execution of the underwriting agreement for this offering. For purposes of our policy only, a related person transaction is a transaction, arrangement or relationship, or any series of similar transactions, arrangements or relationships, in which we and any related person are, were or will be participants in which the amount involved exceeds $120,000. Transactions involving compensation for services provided to us as an employee or director are not covered by this policy. A related person is any executive officer, director or beneficial owner of more than 5% of any class of our voting securities, including any of their immediate family members and any entity owned or controlled by such persons.

Under the policy, if a transaction has been identified as a related person transaction, including any transaction that was not a related person transaction when originally consummated or any transaction that was not initially identified as a related person transaction prior to consummation, our management must present information regarding the related person transaction to our audit committee, or, if audit committee approval would be inappropriate, to another independent body of our board of directors, for review, consideration and approval or ratification. The presentation must include a description of, among other things, the material facts, the interests, direct and indirect, of the related persons, the benefits to us of the transaction and whether the transaction is on terms that are comparable to the terms available to or from, as the case may be, an unrelated third party or to or from employees generally. Under the policy, we will collect information that we deem reasonably necessary from each director, executive officer and, to the extent feasible, significant stockholder to enable us to identify any existing or potential related-person transactions and to effectuate the terms of the policy. In addition, under our Code of Business Conduct and Ethics that we expect to adopt prior to the completion of this offering, our employees and directors will have an affirmative responsibility to disclose any transaction or relationship that reasonably could be expected to give rise to a conflict of interest. In considering related person transactions, our audit committee, or other independent body of our board of directors, will take into account the relevant available facts and circumstances including, but not limited to:

- the risks, costs and benefits to us;
- the impact on a director's independence in the event that the related person is a director, immediate family member of a director or an entity with which a director is affiliated;
- the availability of other sources for comparable services or products; and
- the terms available to or from, as the case may be, unrelated third parties or to or from employees generally.

The policy requires that, in determining whether to approve, ratify or reject a related person transaction, our audit committee, or other independent body of our board of directors, must consider, in light of known circumstances, whether the transaction is in, or is not inconsistent with, our best interests and those of our stockholders, as our audit committee, or other independent body of our board of directors, determines in the good faith exercise of its discretion.

PRINCIPAL STOCKHOLDERS

The following table sets forth the beneficial ownership of our common stock as of September 30, 2013 for:

- each person, or group of affiliated persons, who is known by us to beneficially own more than 5% of our common stock;
- each of our executive officers;
- each of our directors; and
- all of our current executive officers and directors as a group.

The percentage ownership information shown in the table is based upon 10,555,496 shares of common stock outstanding as of September 30, 2013, after giving effect to the conversion of all of our convertible preferred stock into 9,305,359 shares of common stock, which will occur automatically upon the completion of this offering.

We have determined beneficial ownership in accordance with the rules of the SEC. These rules generally attribute beneficial ownership of securities to persons who possess sole or shared voting power or investment power with respect to those securities. In addition, the rules include shares of common stock issuable pursuant to the exercise of stock options or warrants that are either immediately exercisable or exercisable on or before November 29, 2013, which is 60 days after September 30, 2013. These shares are deemed to be outstanding and beneficially owned by the person holding those options or warrants for the purpose of computing the percentage ownership of that person, but they are not treated as outstanding for the purpose of computing the percentage ownership of any other person. Unless otherwise indicated, the persons or entities identified in this table have sole voting and investment power with respect to all shares shown as beneficially owned by them, subject to applicable community property laws.

Except as otherwise noted below, the address for persons listed in the table is c/o GlycoMimetics, Inc., 401 Professional Drive, Suite 250, Gaithersburg, Maryland 20879.

Certain of our existing investors and their affiliated entities have indicated an interest in purchasing $11.0 million of shares of our common stock in this offering at the initial public offering price. Assuming an initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, these entities would purchase an aggregate of up to approximately 733,333 of the 4,000,000 shares in this offering based on these indications of interest. However, because indications of interest are not binding agreements or commitments to purchase, these stockholders may determine to purchase fewer shares than they indicate an interest in purchasing or not to purchase any shares in this offering. It is also possible that these stockholders could indicate an interest in purchasing more shares of our common stock. In addition, the underwriters could determine to sell fewer shares to any of these stockholders than the stockholders indicate an interest in purchasing or not to sell any shares to these stockholders. The following table does not reflect any potential purchases by these stockholders or their affiliated entities.

NAME OF BENEFICIAL OWNER	NUMBER OF SHARES BENEFICIALLY OWNED	PERCENTAGE OF SHARES BENEFICIALLY OWNED	
		BEFORE OFFERING	AFTER OFFERING
Principal Stockholders:			
Entities affiliated with New Enterprise Associates, Inc.[1]	8,099,032	73.1%	53.7%
Genzyme Corporation[2]	1,193,625	11.3	8.2
Executive Officers and Directors:			
Rachel K. King[3]	615,382	5.6	4.1
John L. Magnani, Ph.D.[4]	319,605	3.0	2.2
Helen M. Thackray, M.D.[5]	184,615	1.7	1.3
Brian M. Hahn[6]	56,920	*	*
M. James Barrett, Ph.D.[7]	8,111,327	73.1	53.7
John J. Baldwin, Ph.D.[8]	12,294	*	*
William M. Gust[9]	446,954	4.2	3.1
Michael A. Henos[10]	521,664	4.9	3.6
Franklin H. Top, Jr., M.D.[11]	12,294	*	*
All current directors and executive officers as a group (9 persons)[12]	10,281,055	85.4	64.1

* Represents beneficial ownership of less than 1%.

(1) Consists of (a) 586,975 shares of common stock, 3,407,283 shares of common stock issuable upon conversion of shares of preferred stock and 523,897 shares of common stock issuable upon exercise of warrants held by New Enterprise Associates 10, L.P. ("NEA 10") and (b) 3,580,877 shares of common stock issuable upon conversion of shares of preferred stock held by New Enterprise Associates 13, L.P. ("NEA 13"). The shares directly held by NEA 10 are indirectly held by NEA Partners 10, L.P. ("NEA Partners 10"), its sole general partner. The individual general partners of NEA Partners 10 are M. James Barrett (a member of our board of directors), Peter J. Barris and Scott D. Sandell (the "NEA 10 Directors"). NEA Partners 10 and the NEA 10 Directors may be deemed to have shared voting and dispositive power over, and be deemed indirect beneficial owners of, the shares directly held by NEA 10. The shares directly held by NEA 13 are indirectly held by NEA Partners 13, L.P. ("NEA Partners 13"), its sole general partner, NEA 13 GP, LTD ("NEA 13 LTD"), the sole general partner of NEA Partners 13, and each of the individual directors of NEA 13 LTD. The individual Directors of NEA 13 LTD are M. James Barrett (a member of our board of directors), Peter J. Barris, Forest Baskett, Ryan D. Drant, Patrick J. Kerins, Krishna Kolluri, David M. Mott, Scott D. Sandell, Ravi Viswanathan and Harry R. Weller (the "NEA 13 Directors"). NEA Partners 13, NEA 13 LTD and the NEA 13 Directors may be deemed to have shared voting and dispositive power over, and be deemed indirect beneficial owners of, the shares directly held by NEA 13. The principal business address of New Enterprise Associates, Inc. is 1954 Greenspring Drive, Suite 600, Timonium, MD 21093. The percentage of shares beneficially owned after this offering would be 57.2%, assuming the purchase of all of the shares that the entities affiliated with New Enterprise Associates have indicated an interest in purchasing in this offering.

(2) Consists of shares of common stock issuable upon conversion of preferred stock. The principal business address of Genzyme Corporation is 500 Kendall Street, Cambridge, MA 02142.

(3) Consists of (a) 8,706 shares of common stock held directly, (b) 447,580 shares of common stock underlying options that are vested and exercisable within 60 days of September 30, 2013, (c) 1,741 shares of common stock held by Ms. King's spouse and (d) 157,356 shares of common stock held by family trusts for which Ms. King serves as trustee.

(4) Consists of (a) 19,836 shares of common stock held directly, (b) 222,895 shares of common stock underlying options that are vested and exercisable within 60 days of September 30, 2013, (c) 1,491 shares of common stock underlying immediately exercisable warrants, (d) 9,969 shares of common stock issuable upon conversion of preferred stock held directly and (e) 4,845 shares of common stock held by GlycoTech Corporation, of which Dr. Magnani is the sole stockholder.

(5) Consists of shares of common stock underlying options that are vested and exercisable within 60 days of September 30, 2013.

(6) Consists of shares of common stock underlying options that are vested and exercisable within 60 days of September 30, 2013.

(7) Consists of (a) 12,295 shares of common stock underlying options that are vested and exercisable within 60 days of September 30, 2013 and (b) the shares identified in footnote 1 above.

(8) Consists of (a) 605 shares of common stock held directly and (b) 11,689 shares of common stock underlying options that are vested and exercisable within 60 days of September 30, 2013.

(9) Consists of (a) 12,295 shares of common stock underlying options that are vested and exercisable within 60 days of September 30, 2013 and (b) 70,261 shares of common stock, 24,712 shares of common stock underlying immediately exercisable warrants and 339,686 shares of common stock issuable upon conversion of preferred stock held directly by Anthem Capital II, L.P. ("Anthem").

The general partner of Anthem is Anthem Capital Partners, LLC ("Anthem Partners"). Mr. Gust, a member of our board of directors, is a manager of Anthem Partners and may be deemed to share voting and dispositive power over the shares held by Anthem.

(10) Consists of (a) 10,732 shares of common stock held directly and 1,562 shares of common stock underlying options that are vested and exercisable within 60 days of September 30, 2013, (b) 11,936 shares of common stock issuable upon conversion of preferred stock held by Mr. Henos's spouse, (c) 114,888 shares of common stock, 43,207 shares of common stock underlying immediately exercisable warrants and 334,203 shares of common stock issuable upon conversion of preferred stock held by Alliance Technology Ventures III, L.P ("ATV III") and (d) 1,341 shares of common stock, 419 shares of common stock underlying immediately exercisable warrants and 3,376 shares of common stock issuable upon conversion of preferred stock held by ATV III Affiliates Fund, LP ("ATV III Affiliates"). Mr. Henos is a manager of ATV III Partners, LLC, the general partner of ATV III and ATV III Affiliates and shares voting and investment power with respect to the shares held by ATV III and ATV III Affiliates.

(11) Consists of (a) 605 shares of common stock held directly and (b) 11,689 shares of common stock underlying options that are vested and exercisable within 60 days of September 30, 2013.

(12) Consists of 1,108,118 shares of common stock, 7,687,330 shares of common stock issuable upon conversion of preferred stock, 593,726 shares of common stock underlying immediately exercisable warrants and 891,886 shares of common stock underlying options that are vested and exercisable within 60 days of September 30, 2013. The percentage of shares beneficially owned after this offering would be 67.4%, assuming the purchase of all of the shares that certain of our existing principal stockholders have indicated an interest in purchasing in this offering.

DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock and provisions of our amended and restated certificate of incorporation and amended and restated bylaws are summaries. You should also refer to the amended and restated certificate of incorporation and the amended and restated bylaws, which are filed as exhibits to the registration statement of which this prospectus is part.

General

Upon the completion of this offering, our amended and restated certificate of incorporation, or the restated certificate, will authorize 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 will be undesignated. Our board of directors may establish the rights and preferences of the preferred stock from time to time. As of September 30, 2013, after giving effect to the conversion of all outstanding convertible preferred stock into shares of common stock, there would have been 10,555,496 shares of common stock issued and outstanding, held of record by 35 stockholders.

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 amended and restated bylaws, or the restated bylaws, our stockholders will 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.

Preferred Stock

All currently outstanding shares of convertible preferred stock will be converted automatically to common stock immediately prior to the completion of this offering.

Following the completion of this offering, our board of directors will have 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.

We have no present plans to issue any shares of preferred stock following completion of this offering.

Options

As of September 30, 2013, under the 2003 plan, options to purchase an aggregate of 1,173,287 shares of common stock were outstanding. For additional information regarding the terms of this plan, see "Executive Compensation—Equity Incentive Plans."

Warrants

We have outstanding immediately exercisable warrants to purchase:

- an aggregate of 18,067 shares of our common stock at an exercise price of $0.33 per share, which warrants expire in December 2015;
- an aggregate of 1,544 shares of our common stock at an exercise price of $25.92 per share, which warrants expire in October 2016;
- an aggregate of 298,402 shares of our common stock at an exercise price of $0.33 per share, which warrants expire in July 2018; and
- an aggregate of 317,236 shares of our common stock at an exercise price of $0.33 per share, which warrants expire in January 2019.

Each of our outstanding warrants has a net exercise provision under which the holder may, in lieu of payment of the exercise price in cash, surrender the warrant and receive a net amount of shares based on the fair market value of our common stock at the time of exercise of the warrant after deduction of the aggregate exercise price. The warrants also contain provisions for the adjustment of the exercise price and the number of shares issuable upon the exercise of the warrant in the event of certain stock dividends, stock splits, reorganizations, reclassifications and consolidations.

We have also granted registration rights to the warrant holders, as more fully described below under "—Registration Rights."

Registration Rights

We and the holders of our existing convertible preferred stock have entered into an investor rights agreement. The registration rights provisions of this agreement provide those holders with demand and piggyback registration rights with respect to the shares of our common stock currently held by them and issuable to them upon exercise of warrants and upon conversion of our convertible preferred stock in connection with this offering.

Pursuant to the terms of our currently outstanding warrant to purchase common stock held by a prior lender, the holder has piggyback registration rights with respect to the shares of our common stock issuable upon exercise of the warrant.

Demand Registration Rights

At any time beginning 180 days following the effective date of the registration statement of which this prospectus is a part, the holders of at least 40% of the shares issuable upon conversion of our convertible preferred stock in the aggregate have the right to demand that we file up to a total of two registration statements, as long as the anticipated aggregate offering price, net of underwriting discounts and commissions, would exceed $10.0 million. These registration rights are subject to specified conditions and limitations, including the right of the underwriters, if any, to limit the number of shares included in any such registration under specified circumstances. Upon such a request, we are required to effect the registration as soon as reasonably possible. An aggregate of 10,210,228 shares of common stock and 633,705 shares issuable upon the exercise of warrants will be entitled to these demand registration rights.

Piggyback Registration Rights

At any time after the completion of this offering, if we propose to register any of our securities under the Securities Act either for our own account or for the account of other stockholders, the holders of shares of common stock that are issued upon conversion of our convertible preferred stock, some holders of shares of our common stock and the holders of our currently outstanding warrants will each be entitled to notice of the registration and will be entitled to include their shares of common stock in the registration statement. These piggyback registration rights are subject to specified conditions and limitations, including the right of the underwriters to limit the number of shares included in any such registration under specified circumstances. An aggregate of 10,210,228 shares of common stock and 635,249 shares issuable upon the exercise of warrants will be entitled to these piggyback registration rights.

Registration on Form S-3

At any time after we become eligible to file a registration statement on Form S-3, holders of shares of our common stock that are issued upon conversion of our convertible preferred stock will be entitled, upon their written request, to have such shares registered by us on a Form S-3 registration statement at our expense, provided that such requested registration has an anticipated aggregate offering size to the public of at least $1.0 million and subject to other specified conditions and limitations. An aggregate of 10,210,228 shares of common stock and 633,705 shares issuable upon the exercise of warrants will be entitled to these Form S-3 registration rights.

Expenses of Registration

We will pay all expenses relating to any demand, piggyback or Form S-3 registration, other than underwriting discounts and commissions, subject to specified conditions and limitations.

Termination of Registration Rights

The registration rights granted under the investor rights agreement will terminate upon the seventh anniversary of the completion of this offering or, if earlier, with respect to a particular holder, at such time as that holder and its affiliates may sell all of their shares of common stock pursuant to Rule 144 under the Securities Act of 1933, as amended, without any restrictions on volume.

Anti-Takeover Provisions

Section 203 of the Delaware General Corporation Law

We are subject to Section 203 of the Delaware General Corporation Law, which prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years after the date that such stockholder became an interested stockholder, with the following exceptions:

- before such date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction began, excluding for purposes of determining the voting stock outstanding, but not the outstanding voting stock owned by the interested stockholder, those shares owned (i) by persons who are directors and also officers and (ii) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or after such date, the business combination is approved by the board of directors and authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock that is not owned by the interested stockholder.

In general, Section 203 defines a "business combination" to include the following:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;

- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock or any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits by or through the corporation.

In general, Section 203 defines an "interested stockholder" as an entity or person who, together with the person's affiliates and associates, beneficially owns, or within three years prior to the time of determination of interested stockholder status did own, 15% or more of the outstanding voting stock of the corporation.

Certificate of Incorporation and Bylaws to be in Effect Upon the Completion of this Offering

The restated certificate will provide for our board of directors to be divided into three classes with staggered three-year terms. Only one class of directors will be 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 will be able to elect all of our directors. The restated certificate and the restated bylaws will 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 will also provide that all stockholder actions must be effected at a duly called meeting of stockholders and will eliminate the right of stockholders to act by written consent without a meeting. Our restated bylaws will 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 will also 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 will specify requirements as to the form and content of a stockholder's notice.

The restated certificate and restated bylaws will 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 will make 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 will provide 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

We have applied for listing of our common stock on The NASDAQ Global Market under the trading symbol "GLYC."

SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, no public market existed for our common stock. Future sales of shares of our common stock in the public market after this offering, or the perception that these sales could occur, could adversely affect prevailing market prices for our common stock and could impair our future ability to raise equity capital.

Based on the number of shares outstanding as of September 30, 2013, upon completion of this offering and assuming no exercise of the underwriters' option to purchase additional shares, 14,555,496 shares of common stock will be outstanding, assuming no outstanding options or warrants are exercised. All of the shares of common stock sold in this offering will be freely tradable without restrictions or further registration under the Securities Act, except for any shares sold to our "affiliates," as that term is defined under Rule 144 under the Securities Act. The remaining 10,555,496 shares of common stock held by existing stockholders are "restricted securities," as that term is defined in Rule 144 under the Securities Act. Restricted securities may be sold in the public market only if registered or if their resale qualifies for exemption from registration described below under Rule 144 promulgated under the Securities Act.

As a result of contractual restrictions described below and the provisions of Rules 144 and 701, the shares sold in this offering and the restricted securities will be available for sale in the public market as follows:

- the 4,000,000 shares sold in this offering will be eligible for immediate sale upon the completion of this offering; and
- the remaining 10,555,496 restricted shares will be eligible for sale in the public market upon expiration of lock-up agreements 180 days after the date of this prospectus, subject in certain circumstances to the volume, manner of sale and other limitations under Rule 144 and Rule 701.

Rule 144

In general, persons who have beneficially owned restricted shares of our common stock for at least six months, and any affiliate of the company who owns either restricted or unrestricted shares of our common stock, are entitled to sell their securities without registration with the SEC under an exemption from registration provided by Rule 144 under the Securities Act.

Non-Affiliates

Any person who is not deemed to have been one of our affiliates at the time of, or at any time during the three months preceding, a sale may sell an unlimited number of restricted securities under Rule 144 if:

- the restricted securities have been held for at least six months, including the holding period of any prior owner other than one of our affiliates;
- we have been subject to the Exchange Act periodic reporting requirements for at least 90 days before the sale; and
- we are current in our Exchange Act reporting at the time of sale.

Any person who is not deemed to have been an affiliate of ours at the time of, or at any time during the three months preceding, a sale and has held the restricted securities for at least one year, including the holding period of any prior owner other than one of our affiliates, will be entitled to sell an unlimited number of restricted securities without regard to the length of time we have been subject to Exchange Act periodic reporting or whether we are current in our Exchange Act reporting.

Affiliates

Persons seeking to sell restricted securities who are our affiliates at the time of, or any time during the three months preceding, a sale, would be subject to the restrictions described above. They are also subject to additional restrictions, by which such person would be required to comply with the manner of sale and notice provisions of Rule 144 and would be entitled to sell within any three-month period only that number of securities that does not exceed the greater of either of the following:

- 1% of the number of shares of our common stock then outstanding, which will equal approximately 145,555 shares immediately after the completion of this offering based on the number of shares outstanding as of September 30, 2013; or

- the average weekly trading volume of our common stock on The NASDAQ Global Market during the four calendar weeks preceding the filing of a notice on Form 144 with respect to the sale.

Additionally, persons who are our affiliates at the time of, or any time during the three months preceding, a sale may sell unrestricted securities under the requirements of Rule 144 described above, without regard to the six month holding period of Rule 144, which does not apply to sales of unrestricted securities.

Rule 701

Rule 701 under the Securities Act, as in effect on the date of this prospectus, permits resales of shares in reliance upon Rule 144 but without compliance with certain restrictions of Rule 144, including the holding period requirement. Most of our employees, executive officers or directors who purchased shares under a written compensatory plan or contract may be entitled to rely on the resale provisions of Rule 701, but all holders of Rule 701 shares are required to wait until 90 days after the date of this prospectus before selling their shares. However, substantially all Rule 701 shares are subject to lock-up agreements as described below and in the section of this prospectus titled "Underwriting" and will become eligible for sale upon the expiration of the restrictions set forth in those agreements.

Form S-8 Registration Statements

As soon as practicable after the completion of this offering, we intend to file with the SEC one or more registration statements on Form S-8 under the Securities Act to register the shares of our common stock that are issuable pursuant to our 2003 stock incentive plan and 2013 equity incentive plan. These registration statements will become effective immediately upon filing. Shares covered by these registration statements will then be eligible for sale in the public markets, subject to vesting restrictions, any applicable lock-up agreements described below and Rule 144 limitations applicable to affiliates.

Lock-Up Agreements

We and the holders of substantially all of our common stock outstanding on the date of this prospectus, including each of our executive officers and directors, have entered into lock-up agreements with the underwriters or otherwise agreed, subject to certain exceptions, that we and they will not, directly or indirectly, offer, sell, contract to sell, pledge, grant any option to purchase, make any short sale, or otherwise dispose of or hedge any of our shares of common stock, any options or warrants to purchase shares of our common stock, or any securities convertible into, or exchangeable for or that represent the right to receive shares of our common stock, without the prior written consent of the representatives of the underwriters for a period of 180 days from the date of this prospectus.

Registration Rights

On the date beginning 180 days after the effective date of the registration statement of which this prospectus is a part, the holders of 10,210,228 shares of our common stock, including 9,305,359 shares issuable upon the conversion of our convertible preferred stock, and holders of warrants to purchase 635,249 shares of our common stock, or in each case their transferees, as well as additional shares that may be acquired by them, will be entitled to specified rights with respect to the registration of their shares under the Securities Act. Registration of these shares under the Securities Act would result in the shares becoming freely tradable without restriction under the Securities Act immediately upon the effectiveness of the registration. See "Description of Capital Stock—Registration Rights" for additional information.

MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES TO NON-U.S. HOLDERS

The following is a general discussion of the material U.S. federal income tax considerations applicable to non-U.S. holders (as defined herein) with respect to their ownership and disposition of shares of our common stock issued pursuant to this offering. All prospective non-U.S. holders of our common stock should consult their own tax advisors with respect to the U.S. federal, state, local and non-U.S. tax consequences of the purchase, ownership and disposition of our common stock. In general, a non-U.S. holder means a beneficial owner of our common stock (other than a partnership or an entity or arrangement treated as a partnership for U.S. federal income tax purposes) that is not, for U.S. federal income tax purposes:

- an individual who is a citizen or resident of the United States;
- a corporation, or an entity treated as a corporation for U.S. federal income tax purposes, created or organized in the United States or under the laws of the United States or of any state thereof or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust if (1) a U.S. court can exercise primary supervision over the trust's administration and one or more U.S. persons have the authority to control all of the trust's substantial decisions or (2) the trust has a valid election in effect under applicable U.S. Treasury Regulations to be treated as a U.S. person.

This discussion is based on current provisions of the U.S. Internal Revenue Code of 1986, as amended, which we refer to as the Code, existing U.S. Treasury Regulations promulgated thereunder, published administrative pronouncements and rulings of the U.S. Internal Revenue Service, which we refer to as the IRS, and judicial decisions, all as in effect as of the date of this prospectus. These authorities are subject to change and to differing interpretation, possibly with retroactive effect. Any change or differing interpretation could alter the tax consequences to non-U.S. holders described in this prospectus.

We assume in this discussion that a non-U.S. holder holds shares of our common stock as a capital asset within the meaning of Section 1221 of the Code (generally, for investment). This discussion does not address all aspects of U.S. federal income taxation that may be relevant to a particular non-U.S. holder in light of that non-U.S. holder's individual circumstances, nor does it address any estate or gift tax consequences, or any aspects of U.S. state, local or non-U.S. taxes. This discussion also does not consider any specific facts or circumstances that may apply to a non-U.S. holder and does not address the special tax rules applicable to particular non-U.S. holders, such as holders that own, or are deemed to own, more than 5% of our capital stock (except to the extent specifically set forth below), corporations that accumulate earnings to avoid U.S. federal income tax, tax-exempt organizations, banks, financial institutions, insurance companies, brokers, dealers or traders in securities, commodities or currencies, tax-qualified retirement plans, holders subject to the alternative minimum tax or Medicare contribution tax, holders who hold or receive our common stock pursuant to the exercise of employee stock options or otherwise as compensation, holders holding our common stock as part of a hedge, straddle or other risk reduction strategy, conversion transaction or other integrated investment, holders deemed to sell our common stock under the constructive sale provisions of the Code, controlled foreign corporations, passive foreign investment companies and certain former U.S. citizens or long-term residents.

In addition, this discussion does not address the tax treatment of partnerships (or entities or arrangements that are treated as partnerships for U.S. federal income tax purposes) or persons that hold their common stock through such partnerships. If a partnership, including any entity or arrangement treated as a partnership for U.S. federal income tax purposes, holds shares of our common stock, the U.S. federal income tax treatment of a partner in such partnership will generally depend upon the status of the partner and the activities of the partnership. Such partners and partnerships should consult their own tax advisors regarding the tax consequences of the purchase, ownership and disposition of our common stock.

There can be no assurance that a court or the IRS will not challenge one or more of the tax consequences described herein, and we have not obtained, nor do we intend to obtain, a ruling with respect to the U.S. federal income tax consequences to a non-U.S. holder of the purchase, ownership or disposition of our common stock.

Distributions on Our Common Stock

Subject to the discussion below regarding backup withholding and foreign accounts, distributions, if any, on our common stock generally will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. If a distribution exceeds our current and accumulated earnings and profits, the excess will be treated as a tax-free return of the non-U.S. holder's investment, up to such holder's adjusted tax basis in the common stock. Any remaining excess will be treated as capital gain from the sale or exchange of such common stock, subject to the tax treatment described below in "Gain on Sale, Exchange or Other Disposition of Our Common Stock." Any such distribution will also be subject to the discussion below under the heading "Foreign Accounts."

Dividends paid to a non-U.S. holder will generally be subject to withholding of U.S. federal income tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder's country of residence.

Dividends that are treated as effectively connected with a trade or business conducted by a non-U.S. holder within the United States and, if an applicable income tax treaty so provides, that are attributable to a permanent establishment or a fixed base maintained by the non-U.S. holder within the United States, are generally exempt from the 30% withholding tax if the non-U.S. holder satisfies applicable certification and disclosure requirements. However, such U.S. effectively connected income, net of specified deductions and credits, is taxed at the same graduated U.S. federal income tax rates applicable to U.S. persons (as defined in the Code). Any U.S. effectively connected income received by a non-U.S. holder that is a corporation may also, under certain circumstances, be subject to an additional "branch profits tax" at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder's country of residence.

To claim a reduction or exemption from withholding, a non-U.S. holder of our common stock generally will be required to provide (a) a properly executed IRS Form W-8BEN (or successor form) and satisfy applicable certification and other requirements to claim the benefit of an applicable income tax treaty between the United States and such holder's country of residence, or (b) a properly executed IRS Form W-8ECI stating that dividends are not subject to withholding because they are effectively connected with such non-U.S. holder's conduct of a trade or business within the United States. Non-U.S. holders are urged to consult their tax advisors regarding their entitlement to benefits under a relevant income tax treaty.

A non-U.S. holder that is eligible for a reduced rate of U.S. withholding tax under an income tax treaty may obtain a refund or credit of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS.

Gain on Sale, Exchange or Other Disposition of Our Common Stock

Subject to the discussion below regarding backup withholding and foreign accounts, in general, a non-U.S. holder will not be subject to any U.S. federal income tax on any gain realized upon such holder's sale, exchange or other disposition of shares of our common stock unless:

- the gain is effectively connected with a U.S. trade or business of the non-U.S. holder and, if an applicable income tax treaty so provides, is attributable to a permanent establishment or a fixed base maintained in the United States by such non-U.S. holder, in which case the non-U.S. holder generally will be taxed at the graduated U.S. federal income tax rates applicable to U.S. persons (as defined in the Code) and, if the non-U.S. holder is a foreign corporation, the branch profits tax described above in "Distributions on Our Common Stock" also may apply;
- the non-U.S. holder is a nonresident alien individual who is present in the United States for 183 days or more in the taxable year of the disposition and certain other conditions are met, in which case the non-U.S. holder will be subject to a 30% tax (or such lower rate as may be specified by an applicable income tax treaty) on the net gain derived from the disposition, which may be offset by U.S. source capital losses of the non-U.S. holder, if any (even though the individual is not considered a resident of the United States); or
- our common stock constitutes a U.S. real property interest because we are, or have been, at any time during the five-year period preceding such disposition (or the non-U.S. holder's holding period, if shorter) a "U.S. real property holding corporation." Generally, a corporation is a U.S. real property holding corporation

only if the fair market value of its U.S. real property interests equals or exceeds 50% of the sum of the fair market value of its worldwide real property interests plus its other assets used or held for use in a trade or business. Although there can be no assurance, we do not believe that we are, or have been, a U.S. real property holding corporation, or that we are likely to become one in the future. Even if we are or become a U.S. real property holding corporation, provided that our common stock is regularly traded, as defined by applicable Treasury Regulations, on an established securities market, our common stock will be treated as a U.S. real property interest only with respect to a non-U.S. holder that holds more than 5% of our outstanding common stock, directly or indirectly, actually or constructively, during the shorter of the 5-year period ending on the date of the disposition or the period that the non-U.S. holder held our common stock. In such case, such non-U.S. holder generally will be taxed on its net gain derived from the disposition at the graduated U.S. federal income tax rates applicable to U.S. persons (as defined in the Code). No assurance can be provided that our common stock will be regularly traded on an established securities market for purposes of the rules described above.

Backup Withholding and Information Reporting

We must report annually to the IRS and to each non-U.S. holder the gross amount of the dividends on our common stock paid to such holder and the tax withheld, if any, with respect to such dividends. Non-U.S. holders will have to comply with specific certification procedures to establish that the holder is not a U.S. person (as defined in the Code) in order to avoid backup withholding at the applicable rate with respect to dividends on our common stock. A non-U.S. holder generally will not be subject to U.S. backup withholding with respect to payments of dividends on our common stock if it certifies its non-U.S. status by providing a valid IRS Form W-8BEN or W-8ECI, or otherwise establishes an exemption; *provided* we do not have actual knowledge or reason to know such non-U.S. holder is a U.S. person, as defined in the Code. Dividends paid to non-U.S. holders subject to the U.S. withholding tax, as described above in "Distributions on Our Common Stock," generally will be exempt from U.S. backup withholding.

Information reporting and backup withholding will generally apply to the proceeds of a disposition of our common stock by a non-U.S. holder effected by or through the U.S. office of any broker, U.S. or foreign, unless the holder certifies its status as a non-U.S. holder and satisfies certain other requirements, or otherwise establishes an exemption. Generally, information reporting and backup withholding will not apply to a payment of disposition proceeds to a non-U.S. holder where the transaction is effected outside the United States through a non-U.S. office of a broker. However, for information reporting purposes, dispositions effected through a non-U.S. office of a broker with substantial U.S. ownership or operations generally will be treated in a manner similar to dispositions effected through a U.S. office of a broker. Non-U.S. holders should consult their own tax advisors regarding the application of the information reporting and backup withholding rules to them.

Copies of information returns may be made available to the tax authorities of the country in which the non-U.S. holder resides or is incorporated under the provisions of a specific treaty or agreement.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules from a payment to a non-U.S. holder may be allowed as a credit against the non-U.S. holder's U.S. federal income tax liability, if any, and may entitle such holder to a refund, provided that the required information is timely furnished to the IRS.

Foreign Accounts

The Code generally will impose a U.S. federal withholding tax of 30% on dividends and the gross proceeds of a disposition of our common stock paid to a "foreign financial institution" (as specifically defined in the Code), unless such institution enters into an agreement with the U.S. government to, among other things, withhold on certain payments and to collect and provide to the U.S. tax authorities substantial information regarding U.S. account holders of such institution (which includes certain equity and debt holders of such institution, as well as certain account holders that are foreign entities with U.S. owners), or otherwise qualifies for an exemption from these rules. Foreign financial institutions located in jurisdictions that have an intergovernmental agreement with the United States governing these withholding and reporting requirements may be subject to different rules. A U.S. federal withholding tax of 30% will apply to dividends and the gross proceeds of a disposition of our common stock paid to a non-financial foreign entity (as defined in the Code), unless such entity provides the withholding agent with either a

certification that it does not have any substantial direct or indirect U.S. owners or provides information regarding substantial direct and indirect U.S. owners of the entity, or otherwise qualifies for an exemption from these rules. Foreign financial institutions located in jurisdictions that have an intergovernmental agreement with the United States governing these withholding and reporting requirements may be subject to different rules. The withholding provisions described above will generally apply to dividends on our common stock paid on or after July 1, 2014 and with respect to gross proceeds of a sale or other disposition of our common stock on or after January 1, 2017. Under certain circumstances, a non-U.S. holder might be eligible for refunds or credits of such taxes.

UNDERWRITING

Subject to the terms and conditions set forth in the underwriting agreement dated as of the date of this prospectus, among us and Jefferies LLC and Barclays Capital Inc. as the representatives of the underwriters named below and the joint book-running managers of this offering, we have agreed to sell to the underwriters, and each of the underwriters has agreed, severally and not jointly, to purchase from us, the respective number of shares of common stock shown opposite its name below:

UNDERWRITER	NUMBER OF SHARES
Jefferies LLC	
Barclays Capital Inc.	
Stifel, Nicolaus & Company, Incorporated	
Canaccord Genuity Inc.	
Total	4,000,000

The underwriting agreement provides that the obligations of the several underwriters are subject to certain conditions precedent such as the receipt by the underwriters of officers' certificates and legal opinions and approval of certain legal matters by their counsel. The underwriting agreement provides that the underwriters will purchase all of the shares of common stock if any of them are purchased. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the nondefaulting underwriters may be increased or the underwriting agreement may be terminated. We have agreed to indemnify the underwriters and certain of their controlling persons against certain liabilities, including liabilities under the Securities Act, and to contribute to payments that the underwriters may be required to make in respect of those liabilities.

The underwriters have advised us that, following the completion of this offering, they currently intend to make a market in the common stock as permitted by applicable laws and regulations. However, the underwriters are not obligated to do so, and the underwriters may discontinue any market-making activities at any time without notice in their sole discretion. Accordingly, no assurance can be given as to the liquidity of the trading market for the common stock, that you will be able to sell any of the common stock held by you at a particular time or that the prices that you receive when you sell will be favorable.

The underwriters are offering the shares of common stock subject to their acceptance of the shares of common stock from us and subject to prior sale. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part. In addition, the underwriters have advised us that they do not intend to confirm sales to any account over which they exercise discretionary authority.

Commission and Expenses

The underwriters have advised us that they propose to offer the shares of common stock to the public at the initial public offering price set forth on the cover page of this prospectus and to certain dealers, which may include the underwriters, at that price less a concession not in excess of $ per share of common stock. The underwriters may allow, and certain dealers may reallow, a discount from the concession not in excess of $ per share of common stock to certain brokers and dealers. After the offering, the initial public offering price, concession and reallowance to dealers may be reduced by the representatives. No such reduction will change the amount of proceeds to be received by us as set forth on the cover page of this prospectus.

The following table shows the public offering price, the underwriting discounts and commissions that we are to pay the underwriters and the proceeds, before expenses, to us in connection with this offering. Such amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

	PER SHARE		TOTAL	
	WITHOUT OPTION TO PURCHASE ADDITIONAL SHARES	WITH OPTION TO PURCHASE ADDITIONAL SHARES	WITHOUT OPTION TO PURCHASE ADDITIONAL SHARES	WITH OPTION TO PURCHASE ADDITIONAL SHARES
Public offering price	$	$	$	$
Underwriting discounts and commissions paid by us				
Proceeds to us before expenses				

We estimate expenses payable by us in connection with this offering, other than the underwriting discounts and commissions referred to above, will be approximately $2.5 million. We have also agreed to reimburse the underwriters for certain expenses, including up to an aggregate of $50,000 in connection with the clearance of this offering with the Financial Industry Regulatory Authority, as set forth in the underwriting agreement.

Determination of Offering Price

Prior to this offering, there has not been a public market for our common stock. Consequently, the initial public offering price for our common stock will be determined by negotiations between us and the representatives. Among the factors to be considered in these negotiations will be prevailing market conditions, our financial information, market valuations of other companies that we and the underwriters believe to be comparable to us, estimates of our business potential, the present state of our development and other factors deemed relevant.

We offer no assurances that the initial public offering price will correspond to the price at which the common stock will trade in the public market subsequent to the offering or that an active trading market for the common stock will develop and continue after the offering.

Listing

We have applied to list our common stock on The NASDAQ Global Market under the trading symbol "GLYC."

Option to Purchase Additional Shares

We have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus, to purchase, from time to time, in whole or in part, up to an aggregate of 600,000 shares from us at the public offering price set forth on the cover page of this prospectus, less underwriting discounts and commissions. If the underwriters exercise this option, each underwriter will be obligated, subject to specified conditions, to purchase a number of additional shares proportionate to that underwriter's initial purchase commitment as indicated in the table above. This option may be exercised only if the underwriters sell more shares than the total number set forth on the cover page of this prospectus.

No Sales of Similar Securities

We, our officers, directors and holders of substantially all our outstanding capital stock and other securities have agreed, subject to specified exceptions, not to directly or indirectly:

- sell, offer, contract or grant any option to sell (including any short sale), pledge, transfer, establish an open "put equivalent position" within the meaning of Rule 16a-1(h) under the Securities Exchange Act of 1934, as amended, or
- otherwise dispose of any shares of common stock, options or warrants to acquire shares of common stock, or securities exchangeable or exercisable for or convertible into shares of common stock currently or hereafter owned either of record or beneficially, or
- publicly announce an intention to do any of the foregoing for a period of 180 days after the date of this prospectus without the prior written consent of Jefferies LLC and Barclays Capital Inc.

This restriction terminates after the close of trading of the common stock on and including the 180th day after the date of this prospectus.

Jefferies LLC and Barclays Capital Inc. may, in their sole discretion and at any time or from time to time before the termination of the 180-day period, release all or any portion of the securities subject to lock-up agreements. There are no existing agreements between the underwriters and any of our stockholders who will execute a lock-up agreement, providing consent to the sale of shares prior to the expiration of the lock-up period.

Stabilization

The underwriters have advised us that, pursuant to Regulation M under the Securities Exchange Act of 1934, as amended, certain persons participating in the offering may engage in short sale transactions, stabilizing transactions, syndicate covering transactions or the imposition of penalty bids in connection with this offering. These activities may have the effect of stabilizing or maintaining the market price of the common stock at a level above that which might otherwise prevail in the open market. Establishing short sales positions may involve either "covered" short sales or "naked" short sales.

"Covered" short sales are sales made in an amount not greater than the underwriters' option to purchase additional shares of our common stock in this offering. The underwriters may close out any covered short position by either exercising their option to purchase additional shares of our common stock or purchasing shares of our common stock in the open market. In determining the source of shares to close out the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the option to purchase additional shares.

"Naked" short sales are sales in excess of the option to purchase additional shares of our common stock. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the shares of our common stock in the open market after pricing that could adversely affect investors who purchase in this offering.

A stabilizing bid is a bid for the purchase of shares of common stock on behalf of the underwriters for the purpose of fixing or maintaining the price of the common stock. A syndicate covering transaction is the bid for or the purchase of shares of common stock on behalf of the underwriters to reduce a short position incurred by the underwriters in connection with the offering. Similar to other purchase transactions, the underwriters' purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock. As a result, the price of our common stock may be higher than the price that might otherwise exist in the open market. A penalty bid is an arrangement permitting the underwriters to reclaim the selling concession otherwise accruing to a syndicate member in connection with the offering if the common stock originally sold by such syndicate member are purchased in a syndicate covering transaction and therefore have not been effectively placed by such syndicate member.

Neither we, nor any of the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our common stock. The underwriters are not obligated to engage in these activities and, if commenced, any of the activities may be discontinued at any time.

The underwriters may also engage in passive market making transactions in our common stock on The NASDAQ Global Market in accordance with Rule 103 of Regulation M during a period before the commencement of offers or sales of shares of our common stock in this offering and extending through the completion of distribution. A passive market maker must display its bid at a price not in excess of the highest independent bid of that security. However, if all independent bids are lowered below the passive market maker's bid, that bid must then be lowered when specified purchase limits are exceeded.

Electronic Distribution

A prospectus in electronic format may be made available by e-mail or on the websites or through online services maintained by one or more of the underwriters or their affiliates. In those cases, prospective investors may view offering terms online and may be allowed to place orders online. The underwriters may agree with us to allocate a

specific number of shares of common stock for sale to online brokerage account holders. Any such allocation for online distributions will be made by the underwriters on the same basis as other allocations. Other than the prospectus in electronic format, the information on the underwriters' websites and any information contained in any other website maintained by any of the underwriters is not part of this prospectus, has not been approved or endorsed by us or the underwriters and should not be relied upon by investors.

Other Activities and Relationships

The underwriters and certain of their affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. The underwriters and certain of their affiliates have, from time to time, performed, and may in the future perform, various commercial and investment banking and financial advisory services for us and our affiliates, for which they received or will receive customary fees and expenses.

In the ordinary course of their various business activities, the underwriters and certain of their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve securities or instruments issued by us and our affiliates. If the underwriters or their respective affiliates have a lending relationship with us, they routinely hedge their credit exposure to us consistent with their customary risk management policies. The underwriters and their respective affiliates may hedge such exposure by entering into transactions which consist of either the purchase of credit default swaps or the creation of short positions in our securities or the securities of our affiliates, including potentially the common stock offered hereby. Any such short positions could adversely affect future trading prices of the common stock offered hereby. The underwriters and certain of their respective affiliates may also communicate independent investment recommendations, market color or trading ideas, or publish or express independent research views in respect of such securities or instruments, and may at any time hold, or recommend to clients that they acquire, long or short positions in such securities and instruments.

Stamp Taxes

If you purchase shares of common stock offered in this prospectus, you may be required to pay stamp taxes and other charges under the laws and practices of the country of purchase, in addition to the offering price listed on the cover page of this prospectus.

Disclaimers About Non-U.S. Jurisdictions

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a Relevant Member State), each underwriter has represented and agreed that with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State (the Relevant Implementation Date) it has not made and will not make an offer of shares to the public in that Relevant Member State prior to the publication of a prospectus in relation to the shares which has been approved by the competent authority in that Relevant Member State or, where appropriate, approved in another Relevant Member State and notified to the competent authority in that Relevant Member State, all in accordance with the Prospectus Directive, except that it may, with effect from and including the Relevant Implementation Date, make an offer of shares to the public in that Relevant Member State at any time:

(a) to legal entities which are authorised or regulated to operate in the financial markets or, if not so authorised or regulated, whose corporate purpose is solely to invest in securities;

(b) to any legal entity which has two or more of (1) an average of at least 250 employees during the last financial year; (2) a total balance sheet of more than €43,000,000 and (3) an annual net turnover of more than €50,000,000, as shown in its last annual or consolidated accounts;

(c) to fewer than 100 natural or legal persons (other than qualified investors as defined in the Prospectus Directive) subject to obtaining the prior consent of the representatives for any such offer; or

(d) in any other circumstances which do not require the publication by the Issuer of a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, the expression an "offer of shares to the public" in relation to any shares in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the shares to be offered so as to enable an investor to decide to purchase or subscribe the shares, as the same may be varied in that Relevant Member State by any measure implementing the Prospectus Directive in that Relevant Member State and the expression Prospectus Directive means Directive 2003/71/EC and includes any relevant implementing measure in each Relevant Member State.

Each underwriter has represented and agreed that:

(a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the FSMA) received by it in connection with the issue or sale of the shares in circumstances in which Section 21(1) of the FSMA does not apply to the Issuer; and

(b) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the shares in, from or otherwise involving the United Kingdom.

The shares may not be offered or sold by means of any document other than (i) in circumstances which do not constitute an offer to the public within the meaning of the Companies Ordinance (Cap.32, Laws of Hong Kong), or (ii) to "professional investors" within the meaning of the Securities and Futures Ordinance (Cap.571, Laws of Hong Kong) and any rules made thereunder, or (iii) in other circumstances which do not result in the document being a "prospectus" within the meaning of the Companies Ordinance (Cap.32, Laws of Hong Kong), and no advertisement, invitation or document relating to the shares may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the laws of Hong Kong) other than with respect to shares which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" within the meaning of the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) and any rules made thereunder.

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares may not be circulated or distributed, nor may the be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore (the "SFA"), (ii) to a relevant person, or any person pursuant to Section 275(1A), and in accordance with the conditions, specified in Section 275 of the SFA or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the shares are subscribed or purchased under Section 275 by a relevant person which is: (a) a corporation (which is not an accredited investor) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or (b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary is an accredited investor, shares, debentures and units of shares and debentures of that corporation or the beneficiaries' rights and interest in that trust shall not be transferable for 6 months after that corporation or that trust has acquired the shares under Section 275 except: (1) to an institutional investor under Section 274 of the SFA or to a relevant person, or any person pursuant to Section 275(1A), and in accordance with the conditions, specified in Section 275 of the SFA; (2) where no consideration is given for the transfer; or (3) by operation of law.

The securities have not been and will not be registered under the Financial Instruments and Exchange Law of Japan (the Financial Instruments and Exchange Law) and each underwriter has agreed that it will not offer or sell any securities, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the Financial Instruments and Exchange Law and any other applicable laws, regulations and ministerial guidelines of Japan.

LEGAL MATTERS

The validity of the shares of common stock being offered by this prospectus will be passed upon for us by Cooley LLP, Reston, Virginia. Certain legal matters in connection with this offering will be passed upon for the underwriters by Latham & Watkins LLP, San Diego, California.

EXPERTS

The financial statements of GlycoMimetics, Inc. at December 31, 2011 and 2012, and for each of the two years in the period ended December 31, 2012, and for the period from May 21, 2003 (date of inception) to December 31, 2012, appearing in this prospectus and registration statement have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report thereon appearing elsewhere herein, and are included in reliance upon such report given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act, with respect to the shares of common stock being offered by this prospectus. This prospectus, which constitutes part of the registration statement, does not contain all of the information in the registration statement and its exhibits. For further information with respect to our company and the common stock offered by this prospectus, we refer you to the registration statement and its exhibits. Statements contained in this prospectus as to the contents of any contract or any other document referred to are not necessarily complete, and in each instance, we refer you to the copy of the contract or other document filed as an exhibit to the registration statement. Each of these statements is qualified in all respects by this reference.

You can read our SEC filings, including the registration statement, over the internet at the SEC's website at *www.sec.gov*. You may also read and copy any document we file with the SEC at its public reference room at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You may also obtain copies of these documents at prescribed rates by writing to the Public Reference Section of the SEC at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the public reference facilities.

Upon completion of this offering, we will be subject to the information reporting requirements of the Exchange Act, and we will file reports, proxy statements and other information with the SEC. These reports, proxy statements and other information will be available for inspection and copying at the public reference room and website of the SEC referred to above. We also maintain a website at *www.glycomimetics.com*, at which you may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. The information contained in, or that can be accessed through, our website is not part of, and is not incorporated into, this prospectus.

INDEX TO FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders of
GlycoMimetics, Inc.

We have audited the accompanying balance sheets of GlycoMimetics, Inc. (a Development-Stage Enterprise) (the "Company") as of December 31, 2011 and 2012, and the related statements of operations and comprehensive income (loss), redeemable convertible preferred stock and stockholders' equity and cash flows for the years then ended, and the period from May 21, 2003 (inception) through December 31, 2012. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. We were not engaged to perform an audit of the Company's internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of GlycoMimetics, Inc. at December 31, 2011 and 2012, and the results of its operations and its cash flows for the years then ended, and the period from May 21, 2003 (inception) through December 31, 2012, in conformity with U.S. generally accepted accounting principles.

/s/ Ernst & Young LLP

McLean, Virginia
August 16, 2013, except for the second paragraph of Note 10,
as to which the date is October 25, 2013

GLYCOMIMETICS, INC.
(A Development-Stage Enterprise)

Balance Sheets

	DECEMBER 31,		PRO FORMA DECEMBER 31,
	2011	2012	2012
			(unaudited)
Assets			
Current assets:			
Cash and cash equivalents	$ 28,172,174	$ 17,372,832	
Prepaid expenses and other current assets	194,207	596,181	
Total current assets	28,366,381	17,969,013	
Property and equipment, net	234,502	450,759	
Other assets	308,521	—	
Total assets	$ 28,909,404	$ 18,419,772	
Liabilities and stockholders' equity			
Current liabilities:			
Accounts payable	$ 535,597	$ 764,195	
Accrued bonuses	241,705	338,257	
Accrued expenses	584,893	504,822	
Current portion of deferred rent	50,030	91,635	
Current portion of deferred revenue	15,000,000	3,992,649	
Total current liabilities	16,412,225	5,691,558	
Deferred rent	290,262	199,830	
Deferred revenue	3,750,000	—	
Stockholders' equity:			
Series A-1 Convertible Preferred Stock; $0.001 par value; 60,342,745 shares authorized; 30,726,326 shares issued and outstanding at December 31, 2011 and 2012, and no shares issued and outstanding at December 31, 2012 (Pro Forma)	30,726	30,726	$ —
Common stock; $0.001 par value; 70,258,276 authorized; 929,407 and 929,619 shares issued and outstanding at December 31, 2011 and 2012, respectively, and 10,234,987 shares issued and outstanding at December 31, 2012 (Pro Forma)	930	930	10,235
Additional paid-in capital	64,751,106	65,166,551	65,187,972
Deficit accumulated during the development stage	(56,325,845)	(52,669,823)	(52,669,823)
Total stockholders' equity	8,456,917	12,528,384	12,528,384
Total liabilities and stockholders' equity	$ 28,909,404	$ 18,419,772	$ 18,419,772

See accompanying notes.

GLYCOMIMETICS, INC.
(A Development-Stage Enterprise)

Statements of Operations and Comprehensive Income (Loss)

	YEAR ENDED DECEMBER 31,		PERIOD FROM MAY 21, 2003 (DATE OF INCEPTION) TO DECEMBER 31,
	2011	2012	2012
Revenue	$ 3,813,913	$15,257,351	$ 19,602,114
Costs and expenses:			
Research and development	7,799,155	9,438,400	59,099,513
General and administrative	2,099,560	2,157,314	12,969,741
Total costs and expenses	9,898,715	11,595,714	72,069,254
Income (loss) from operations	(6,084,802)	3,661,637	(52,467,140)
Other income (expense):			
Interest income (expense), net	8,390	20,993	(173,232)
Other expense, net	(36,781)	(26,608)	(29,451)
Total other expense	(28,391)	(5,615)	(202,683)
Net income (loss) and comprehensive income (loss)	$(6,113,193)	$ 3,656,022	$(52,669,823)
Net income (loss) per share—basic	$ (6.58)	$ 3.93	
Net income (loss) per share—diluted	$ (6.58)	$ 0.33	
Weighted average shares outstanding—basic	928,604	929,619	
Weighted average shares outstanding—diluted	928,604	11,016,532	
Pro forma net income per share—basic (unaudited)		$ 0.36	
Pro forma net income per share—diluted (unaudited)		$ 0.33	
Pro forma weighted average shares outstanding—basic (unaudited)		10,234,987	
Pro forma weighted average shares outstanding—diluted (unaudited)		11,016,532	

See accompanying notes.

GLYCOMIMETICS, INC.
(A Development-Stage Enterprise)

Statements of Redeemable Convertible Preferred Stock and Stockholders' Equity

	REDEEMABLE CONVERTIBLE				STOCKHOLDERS' EQUITY						
	SERIES A PREFERRED STOCK		SERIES B PREFERRED STOCK		SERIES A-1 CONVERTIBLE PREFERRED STOCK		COMMON STOCK		ADDITIONAL PAID-IN CAPITAL	ACCUMULATED DEFICIT DURING DEVELOPMENT STAGE	TOTAL STOCKHOLDERS' EQUITY
	SHARES	AMOUNT	SHARES	AMOUNT	SHARES	AMOUNT	SHARES	AMOUNT			
Issuance of common stock to founders at inception	—	$ —	—	$ —	—	$ —	23,622	$ 24	$ 756	$ —	$ 780
Issuance of Series A Convertible Preferred Stock	931,500	9,064,795	—	—	—	—	—	—	—	—	—
Issuance of Series A Convertible Preferred Stock for services rendered	30,000	300,000	—	—	—	—	—	—	—	—	—
Issuance of Series A Convertible Preferred Stock for the purchase of assets	48,000	480,000	—	—	—	—	—	—	—	—	—
Net loss through December 31, 2004	—	—	—	—	—	—	—	—	—	(5,779,637)	(5,779,637)
Balance at December 31, 2004	1,009,500	9,844,795	—	—	—	—	23,622	24	756	(5,779,637)	(5,778,857)
Issuance of warrants	—	—	—	—	—	—	—	—	62,282	—	62,282
Net loss	—	—	—	—	—	—	—	—	—	(3,805,225)	(3,805,225)
Balance at December 31, 2005	1,009,500	9,844,795	—	—	—	—	23,622	24	63,038	(9,584,862)	(9,521,800)
Issuance of Series B Convertible Preferred Stock	—	—	1,974,340	15,350,818	—	—	—	—	—	—	—
Exercise of warrants	—	—	—	—	—	—	1,232	1	406	—	407
Stock-based compensation	—	—	—	—	—	—	—	—	22,470	—	22,470
Net loss	—	—	—	—	—	—	—	—	—	(4,741,892)	(4,741,892)
Balance at December 31, 2006	1,009,500	9,844,795	1,974,340	15,350,818	—	—	24,854	25	85,914	(14,326,754)	(14,240,815)
Stock-based compensation	—	—	—	—	—	—	—	—	46,345	—	46,345
Net loss	—	—	—	—	—	—	—	—	—	(7,306,089)	(7,306,089)
Balance at December 31, 2007	1,009,500	9,844,795	1,974,340	15,350,818	—	—	24,854	25	132,259	(21,632,843)	(21,500,559)
Issuance of warrants	—	—	—	—	—	—	—	—	47,894	—	143,618
Stock-based compensation	—	—	—	—	—	—	—	—	143,618	—	47,894
Net loss	—	—	—	—	—	—	—	—	—	(9,134,562)	(9,134,562)
Balance at December 31, 2008	1,009,500	9,844,795	1,974,340	15,350,818	—	—	24,854	25	323,771	(30,767,405)	(30,443,609)
Stock-based compensation	—	—	—	—	—	—	—	—	48,020	—	48,020
Issuance of Series A-1 Convertible Preferred Stock	—	—	—	—	30,726,326	30,726	—	—	38,774,329	—	38,805,055
Conversion of Series A and B Preferred Stock to common stock	(1,009,500)	(9,844,795)	(1,974,340)	(15,350,818)	—	—	903,645	904	25,194,709	—	25,195,613
Net loss	—	—	—	—	—	—	—	—	—	(10,063,362)	(10,063,362)
Balance at December 31, 2009	—	—	—	—	30,726,326	30,726	928,499	928	64,340,830	(40,830,767)	23,541,717
Stock-based compensation	—	—	—	—	—	—	—	—	34,031	—	34,031
Net loss	—	—	—	—	—	—	—	—	—	(9,381,885)	(9,381,885)
Balance at December 31, 2010	—	—	—	—	30,726,326	30,726	928,499	928	64,374,861	(50,212,652)	14,193,863
Exercise of options	—	—	—	—	—	—	909	1	3	—	4
Stock-based compensation	—	—	—	—	—	—	—	—	376,243	—	376,243
Net loss	—	—	—	—	—	—	—	—	—	(6,113,193)	(6,113,193)
Balance at December 31, 2011	—	—	—	—	30,726,326	30,726	929,407	929	64,751,107	(56,325,845)	8,456,917
Exercise of options	—	—	—	—	—	—	212	0	237	—	237
Stock-based compensation	—	—	—	—	—	—	—	—	415,208	—	415,208
Net income	—	—	—	—	—	—	—	—	—	3,656,022	3,656,022
Balance at December 31, 2012	—	$ —	—	$ —	30,726,326	$30,726	929,619	$930	$65,166,551	$(52,669,823)	$ 12,528,384

See accompanying notes.

GLYCOMIMETICS, INC.
(A Development-Stage Enterprise)

Statements of Cash Flows

	YEAR ENDED DECEMBER 31,		PERIOD FROM MAY 21, 2003 (DATE OF INCEPTION) TO DECEMBER 31,
	2011	2012	2012
Operating activities			
Net income (loss)	$ (6,113,193)	$ 3,656,022	$(52,669,823)
Adjustments to reconcile net income (loss) to net cash (used in) provided by operating activities:			
Depreciation	83,861	99,923	1,005,914
Loss on retirement of property and equipment	—	—	172,584
Amortization of imputed interest on notes payable	—	—	19,200
Amortization of debt discount	—	—	205,899
Sales proceeds	—	—	3,531
Share-based compensation	376,243	415,208	990,211
Issuance of Series A Convertible Preferred Stock for services	—	—	300,000
Acquired in process research and development paid with Series A Convertible Preferred Stock and notes payable	—	—	660,802
Changes in assets and liabilities:			
Prepaid expenses and other current assets	69,935	(83,453)	(513,481)
Accounts payable	83,375	228,598	764,215
Accrued expenses	311,284	16,481	1,627,321
Deferred revenue	18,750,000	(14,757,351)	3,992,649
Deferred rent	291,679	(48,827)	291,465
Net cash provided by (used in) operating activities	13,853,184	(10,473,399)	(43,149,513)
Investing activities			
Restricted cash	(57,700)	(10,000)	(254,900)
Purchases of property and equipment	(182,438)	(316,180)	(1,460,376)
Net cash used in investing activities	(240,138)	(326,180)	(1,715,276)
Financing activities			
Proceeds from issuance of Convertible Preferred Stock, net of issuance costs	—	—	45,120,901
Proceeds from issuance of common stock	3	237	1,197
Proceeds from notes payable	—	—	18,488,929
Repayments of notes payable	(24,166)	—	(1,373,406)
Net cash (used in) provided by financing activities	(24,163)	237	62,237,621
Net increase (decrease) in cash and cash equivalents	13,588,883	(10,799,342)	17,372,832
Cash and cash equivalents, beginning of period	14,583,291	28,172,174	—
Cash and cash equivalents, end of period	$28,172,174	$ 17,372,832	$ 17,372,832
Supplemental disclosure of cash flow information			
Cash paid for interest	$ 624	$ —	$ 38,006
Supplemental schedule of noncash investing and financing activities			
Conversion of notes payable and accrued interest to Series A-1 Convertible Preferred Stock	$ —	$ —	$ 16,099,770
Notes payable issued for purchase of assets from GlycoTech Corporation and related party	—	—	200,000
Series A Convertible Preferred Stock issued from purchase of assets from GlycoTech Corporation and related party	—	—	480,000

See accompanying notes.

GLYCOMIMETICS, INC.
(A Development-Stage Enterprise)

Notes to Financial Statements

1. Nature of Business

GlycoMimetics, Inc. (the Company), a Delaware corporation, 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 was incorporated on April 4, 2003 and commenced operations on May 21, 2003. The Company is headquartered in Gaithersburg, Maryland.

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. Accordingly, the Company is considered to be in the development stage as defined in Accounting Standards Codification (ASC) 915, *Development Stage Entities*.

The Company has incurred significant losses in the development of its product candidates, with the exception of the year ended December 31, 2012, in which it recognized net income of $3.7 million. The losses in prior periods were primarily attributable to the research and development of the Company's lead drug candidate, GMI-1070. 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 $52,669,823 at December 31, 2012 and expects to continue incurring losses for the foreseeable future. The Company currently anticipates that its cash and cash equivalents will be sufficient to meet its anticipated cash requirements through the first quarter of 2014.

The Company's operations are subject to certain risks and uncertainties. The risks include the need to manage growth, the need to retain key personnel, the need to protect intellectual property, the availability of additional capital financing on terms acceptable to the Company and reliance on its collaboration with Pfizer. The Company's current operating assumptions and projections, which reflect management's best estimate of future revenue and operating expenses, indicate that anticipated operating expenditures through the first quarter of 2014 can be met by available working capital; however, the Company's ability to meet its projections is subject to uncertainties, and there can be no assurance that the Company's current projections will be accurate. If the Company's cash requirements are more than projected, the Company may require additional financing. The type, timing and terms of financing selected by the Company, if required, will be dependent upon the Company's cash needs, the availability of financing sources and the prevailing conditions in the financial markets. There can be no assurance that such financing will be available to the Company at any given time or available on favorable terms.

Management believes that the Company has access to capital resources through private investments of equity from its existing stockholders. However, it has not secured any commitment for new financing as of the date of this report, nor can it provide any assurance that new financing will be available on commercially acceptable terms, if at all. If the Company is unable to secure additional capital, it will be required to curtail its operations, and if these measures fail, it may not be able to continue its business. Curtailment of operations would cause significant delays in the Company's efforts to introduce its products to market, which is critical to the realization of its business plan and the future operations of the Company.

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).

2. Summary of Significant Accounting Policies (continued)

Unaudited Pro Forma Presentation

On August 14, 2013, the Company's board of directors authorized management of the Company to file a registration statement with the Securities and Exchange Commission for the Company to sell shares of common stock to the public. The unaudited pro forma balance sheet information as of December 31, 2012 assumes the conversion of all outstanding shares of preferred stock as of that date into 9,305,359 shares of common stock.

The unaudited pro forma net income per share is computed using the weighted-average number of shares of common stock outstanding after giving pro forma effect to the conversion of all issued and outstanding shares of preferred stock during the year ended December 31, 2012 into shares of common stock as if such conversion had occurred at January 1, 2012.

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 certificates of deposit and 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.

Restricted Cash

The Company is required to maintain certificates of deposit that serve as collateral for operating leases and credit card accounts. Amounts classified as restricted cash were $73,000 and $83,000 at December 31, 2011 and 2012, respectively, and are presented under prepaid expenses and other current assets.

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, 2011 and 2012, 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.

2. Summary of Significant Accounting Policies (continued)

Fair Value Measurements (continued)

- 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, 2011 and 2012. The carrying value of cash held in money market funds of approximately $28.1 million and $17.1 million as of December 31, 2011 and 2012, 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 certificates of deposit and 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 one to five 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, fixtures, and equipment	2–5 years
Laboratory equipment	1–5 years
Office equipment	1–5 years
Computer equipment	1–5 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

2. Summary of Significant Accounting Policies (continued)

Impairment of Long-Lived Assets (continued)

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, 2011 and 2012, the Company determined that there were no impaired assets and had no assets held for sale.

Revenue Recognition

From time to time, the Company is awarded reimbursement contracts for services and development grant contracts with government and non-government entities and philanthropic organizations. Under these contracts, the Company typically is reimbursed for the costs in connection with specific development activities. The Company recognizes revenue to the extent of costs incurred in connection with performance under such grant arrangements.

The Company has entered into a collaborative research and development agreement with Pfizer Inc. (Pfizer). The agreement is in the form of a license agreement. The agreement called for a nonrefundable up-front payment and milestone payments upon achieving significant milestone events. The agreement also contemplates royalty payments on future sales of an approved product. There are no performance, cancellation, termination, or refund provisions in the arrangement that contain material financial consequences to the Company.

The primary deliverable under this arrangement is an exclusive worldwide license to the Company's GMI-1070 compound, but the arrangement also includes deliverables related to research and preclinical development activities to be performed by the Company on Pfizer's behalf.

Collaborative research and development agreements can provide for one or more of up-front license fees, research payments, and milestone payments. Agreements with multiple components (deliverables or items) are evaluated according to the provisions of ASC 605-25, *Revenue Recognition—Multiple-Element Arrangements*, to determine whether the deliverables can be separated into more than one unit of accounting. An item can generally be considered a separate unit of accounting if all of the following criteria are met: (1) the delivered item(s) has value to the customer on a stand-alone basis and (2) if the arrangement includes a general right of return relative to the delivered item(s) then delivery or performance of the undelivered item(s) is considered probable and substantially in control of the Company. Items that cannot be divided into separate units are combined with other units of accounting, as appropriate. Consideration received is allocated among the separate units based on selling price hierarchy. The selling price hierarchy for each deliverable is based on (i) vendor-specific objective evidence (VSOE), if available; (ii) third-party evidence (TPE) of selling price if VSOE is not available; or (iii) an estimated selling price, if neither VSOE nor third-party evidence is available. Management was not able to establish VSOE or TPE for separate unit deliverables, as the Company does not have a history of entering such arrangements or selling the individual deliverables within such arrangements separately. In addition, there may be significant differentiation in these arrangements, which indicates that comparable third-party pricing may not be available. Management determined that the selling price for the deliverables within the Pfizer collaboration agreement should be determined using its best estimate of selling price. The process of determining the best estimate of selling price involved significant judgment on the Company's part and included consideration of multiple factors such as estimated direct expenses, other costs, and available clinical development data.

The Company adopted the aforementioned accounting standard for multiple-element arrangements effective January 1, 2011. Pursuant to this standard, each required deliverable under the Pfizer collaboration agreement is evaluated to determine whether it qualifies as a separate unit of accounting. Factors considered in this determination include the research capabilities of Pfizer, the proprietary nature of the license and know-how, and the availability of the Company's glycomimetics technology research expertise in the general marketplace. Based on

2. Summary of Significant Accounting Policies (continued)

Revenue Recognition (continued)

all relevant facts and circumstances and, most significantly, on the proprietary nature of the Company's technology and the related proprietary nature of the Company's research services, management concluded that stand-alone value does not exist for the license, and therefore, the license is not a separate unit of accounting under the contract and will be combined with the research and development services (including participation on a joint steering committee).

As such, the up-front payment received of $22.5 million is being recognized as revenue over the expected development period. The determination of the length of the period over which to defer revenue and the methodology by which to recognize the related revenues is subject to judgment and estimation. Consistent with the research plan developed by and agreed to by both parties, management estimates that the research activities and participation on the joint steering committees will occur over a 1.5-year period. Revenues associated with the up-front license fee are recognized over this period using a straight-line method, which is consistent with expected completion of the research services.

Effective January 1, 2011, the Company also adopted ASC 605-28, *Revenue Recognition—Milestone Method*. Under this guidance, at the inception of agreements that include milestone payments, the Company evaluates whether each milestone is substantive and at risk to both parties on the basis of the contingent nature of the milestone. This evaluation includes an assessment of whether (a) the consideration is commensurate with either (1) the entity's performance to achieve the milestone, or (2) the enhancement of the value of the delivered item(s) as a result of a specific outcome resulting from the entity's performance to achieve the milestone, (b) the consideration relates solely to past performance and (c) the consideration is reasonable relative to all of the deliverables and payment terms within the arrangement. In making this assessment, the Company evaluates factors such as scientific, regulatory, commercial and other risks that must be overcome to achieve the respective milestone, the level of effort and investment required to achieve the respective milestone and whether the milestone consideration is reasonable relative to all deliverables and payment terms in the agreement.

Non-refundable development and regulatory milestones that are expected to be achieved as a result of the Company's efforts during the period of substantial involvement are recognized as revenue upon the achievement of the milestone, assuming all other revenue recognition criteria are met. Milestones that are not considered substantive because the Company does not contribute effort to the achievement of such milestones are generally achieved after the period of substantial involvement and are recognized as revenue upon achievement of the milestone, as there are no undelivered elements remaining and no continuing performance obligation, assuming all other revenue recognition criteria are met.

Research and Development Costs

Except for payments made in advance of services, research and development costs are expensed as incurred. For payments made in advance, the Company recognizes research and development expense as the services are rendered. Research and development costs primarily consist of salaries and related expenses for personnel, laboratory supplies and raw materials, sponsored research, depreciation of laboratory facilities and leasehold improvements, and utilities costs related to research space. Other research and development expenses include fees paid to consultants and outside service providers.

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 model. The resulting fair value is recognized ratably over the requisite service period, which is generally the vesting period of the option.

2. Summary of Significant Accounting Policies (continued)

Stock-Based Compensation (continued)

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:

Fair Value of Common Stock—Given the lack of an active public market for the common stock, the Company has from time to time engaged an independent valuation firm to determine the fair value of the common stock. In the absence of a public trading market, and as a clinical-stage company with no significant revenues, the Company believes that it is appropriate to consider a range of factors to determine the fair market value of the common stock at each grant date. In determining the fair value of its common stock, the Company uses methodologies, approaches, and assumptions consistent with the American Institute of Certified Public Accountants' (AICPA) Audit and Accounting Practice Aid Series: *Valuation of Privately Held Company Equity Securities Issued as Compensation* (the AICPA Practice Guide). In addition, the Company considered various objective and subjective factors, along with input from the independent third-party valuation firm. The factors included (1) the achievement of clinical and operational milestones by the Company; (2) the status of strategic relationships with collaborators; (3) the significant risks associated with the Company's stage of development; (4) capital market conditions for life science companies, particularly similarly situated, privately held, early-stage life science companies; (5) the Company's available cash, financial condition, and results of operations; (6) the most recent sales of the Company's preferred stock; and (7) the preferential rights of the outstanding preferred stock.

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. The Company does not maintain an internal market for its shares, and its shares are not traded publicly. The Company has been able to identify several public entities of similar size, complexity, and stage of development; accordingly, historical volatility has been calculated using the volatility of these companies.

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.

Expected Forfeiture Rate—The forfeiture rate is the estimated percentage of options granted that is expected to be forfeited or canceled on an annual basis before becoming fully vested. The Company estimates the forfeiture rate based on turnover data with further consideration given to the class of the employees to whom the options were granted.

Equity instruments issued to nonemployees are accounted for under the provisions of ASC 718, *Compensation—Stock Compensation*, and ASC 505-50, *Equity—Equity-Based Payments to Non-Employees*. Accordingly, the estimated fair value of the equity instrument is recorded on the earlier of the performance commitment date or the date the services are completed and are marked to market during the service period.

2. Summary of Significant Accounting Policies (continued)

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 Income (Loss)

Effective January 1, 2012, the Company adopted Financial Accounting Standards Board (FASB) Accounting Standards Update (ASU) 2011-05, *Presentation of Comprehensive Income*, which requires the presentation of the comprehensive income (loss) and its components, as part of the financial statements. Comprehensive income (loss) comprises net income (loss) and other changes in equity that are excluded from net income (loss). For the years ended December 31, 2011 and 2012, and for the period from May 21, 2003 (date of inception) to December 31, 2012, the Company's net income (loss) equals comprehensive income (loss) and, accordingly, no additional disclosure is presented.

Recently Issued Accounting Pronouncements Adopted

In May 2011, the FASB issued ASU 2011-04, *Amendments to Achieve Common Fair Value Measurement and Disclosure Requirements in U.S. GAAP and IFRSs*, which amended ASC 820 to achieve common fair value measurements and disclosure requirements in GAAP and International Financial Reporting Standards (IFRS). The amendments in ASU 2011-05 result in common fair value measurement and disclosure requirements in GAAP and IFRS.

Consequently, the amendments change the wording used to describe many of the requirements in GAAP for measuring fair value and for disclosing information about fair value measurements. This amendment was effective for fiscal years beginning after December 15, 2011. The adoption of this amendment did not have a material impact on the Company's financial statements for the year ended December 31, 2012.

3. Net Income (Loss) Per Share of Common Stock

The following table sets forth the computation of basic and diluted earnings per share for the years ended December 31, 2011 and 2012:

	2011	2012
Net income (loss)	$(6,113,193)	$ 3,656,022
Income (loss) per share—basic	$ (6.58)	$ 3.93
Income (loss) per share—diluted	$ (6.58)	$ 0.33
Weighted-average number of shares—basic	928,604	929,619
Weighted-average number of shares—diluted	928,604	11,016,532

3. Net Income (Loss) Per Share of Common Stock (continued)

The following potentially dilutive securities outstanding at December 31, 2011 and 2012 have been excluded from the computation of diluted weighted average shares outstanding, as they would be anti-dilutive:

	2011	2012
Warrants	635,258	1,544
Stock options	1,318,641	76,575
Convertible preferred stock	9,305,359	—

4. Property and Equipment

Property and equipment consisted of the following at December 31:

	2011	2012
Furniture, fixtures, and equipment	$ 106,291	$ 106,291
Laboratory equipment	651,563	900,837
Office equipment	22,421	22,421
Computer equipment	134,201	177,317
Leasehold improvements	16,287	40,077
	930,763	1,246,943
Less accumulated depreciation	(696,261)	(796,184)
	$ 234,502	$ 450,759

Depreciation of property and equipment totaled $83,861 and $99,923 for the years ended December 31, 2011 and 2012, respectively, and $1,005,914 cumulatively for the period from May 21, 2003 (date of inception) to December 31, 2012.

5. Operating Leases

The Company leases its office and research space under a five-year operating lease that is subject to escalation clauses. In connection with its lease arrangement, the Company received a rent abatement as a lease incentive. The rent abatement has been recognized as deferred rent that will be adjusted on a straight-line basis over the term of the lease. Deferred rent was $340,292 and $291,465 at December 31, 2011 and 2012, respectively. Total rent expense was $291,679 for 2011, $321,140 for 2012, and $2,387,245 for the period from May 21, 2003 (date of inception) to December 31, 2012.

5. Operating Leases (continued)

The following table presents the future minimum lease payments as of December 31, 2012 under the Company's lease for operating space:

YEAR	AMOUNT
2013	$ 415,286
2014	427,744
2015	365,445
Total	$1,208,475

6. Stockholders' Equity

Convertible Preferred Stock

Series A-1 Convertible Preferred Stock

On October 20, 2009, the Company entered into a Series A-1 Preferred Stock Purchase Agreement with certain investors. In connection with the financing, the Company issued 30,726,326 shares of Series A-1 Convertible Preferred Stock for an aggregate amount of $38,979,412, which included the conversion of principal and accrued interest related to an earlier bridge financing of $16,099,770. In connection with the Series A-1 Preferred Stock financing, all then-outstanding shares of Series A and Series B Preferred Stock were converted into common stock, and all then outstanding warrants to purchase Series B Preferred Stock were converted into warrants to purchase common stock. Immediately prior to the Series A-1 Preferred Stock financing, the Company effected a 1-for-10 reverse stock split of the outstanding common stock. All prior-period applicable share amounts have been retroactively adjusted to reflect the reverse stock split. As of December 31, 2012, the Company's Amended and Restated Certificate of Incorporation authorized the issuance of 130,601,021 shares of stock, of which 70,258,276 are designated as common stock with a par value of $0.001, and of which 60,342,745 are designated as Series A-1 Convertible Preferred Stock with a par value of $0.001.

Voting Rights and Dividends

The holder of each share of Series A-1 Convertible Preferred Stock has the right to one vote for each share of common stock into which the shares of Series A-1 Convertible Preferred Stock held by the holder are then convertible. The holder has full voting rights and powers equal to the voting rights and powers of a holder of common stock. As long as any shares of Series A-1 Convertible Preferred Stock remain outstanding, the holders of such shares are entitled to elect five directors of the Company. The holders of shares of Series A-1 Convertible Preferred Stock are entitled to receive dividends when, as, and if declared by the Board of Directors at a rate of $0.1015 per share per annum. Dividends are not cumulative.

Liquidation

In the event of a liquidation of the Company, the holders of shares of Series A-1 Convertible Preferred Stock are entitled to receive, prior and in preference to any other series or class of capital stock, an amount equal to the greater of (i) an amount per share equal to the Original Issue Price of $1.2686 plus an amount equal to all declared but unpaid dividends thereon, or (ii) an amount per share equal to the amount per share such holder would have received upon a liquidation event had each holder of Series A-1 Convertible Preferred Stock converted such shares into common stock immediately prior to the liquidation event.

6. Stockholders' Equity (continued)

Convertible Preferred Stock (continued)

Conversion

The Series A-1 Convertible Preferred Stock is convertible into common shares at the election of the stockholder at any time. The number of shares of common stock a holder of Series A-1 Convertible Preferred Stock will receive is equal to the number of shares of Series A-1 Convertible Preferred Stock multiplied by the conversion rate. As of December 31, 2012, the conversion rate for the Series A-1 Convertible Preferred Stock was one-for-one. Upon the effectiveness of the reverse stock split effected in connection with the Company's proposed initial public offering (see Note 10), the conversion rate for the Series A-1 Convertible Preferred Stock changed such that every one share of Series A-1 Convertible Preferred Stock became convertible into approximately 0.3028 shares of common stock. The conversion rate may be adjusted for certain anti-dilutive events. All outstanding shares of Series A-1 Convertible Preferred Stock shall automatically convert to shares of common stock upon an initial public offering of at least $36 million and per share price of $12.55, subject to adjustment as set forth in the Amended and Restated Certificate of Incorporation.

Common Stock

As of December 31, 2011 and 2012, there were 70,258,276 shares of common stock authorized to be issued. Certain of the outstanding shares of common stock are subject to stock restriction agreements (a Restriction Agreement). Pursuant to a Restriction Agreement, a stockholder shall not sell, assign, transfer, or otherwise dispose of any shares except to the Company or as expressly provided in the Restriction Agreement.

Warrants to Acquire Company Stock

On October 13, 2006, the Company issued a warrant to purchase 1,544 shares of common stock at an exercise price of $25.92 per share to a commercial bank. This warrant, which was originally issuable for Series B Preferred Stock prior to the conversion of Series B Preferred Stock to common stock in 2009, was vested upon issuance and expires in October 2016. The fair value of the warrant, which was de minimis, was calculated using the Black-Scholes option pricing model.

As part of the issuance of convertible unsecured promissory notes, the Company issued warrants to purchase an aggregate of 635,249 shares of common stock.

The following common stock warrants were outstanding as of December 31, 2011 and 2012:

NUMBER OF SHARES UNDERLYING WARRANTS	EXERCISE PRICE PER SHARE	EXPIRATION DATE
298,402	$ 0.33	July 18, 2018
301,986	0.33	January 16, 2019
17,041	0.33	December 9, 2015
15,250	0.33	January 30, 2019
1,026	0.33	December 16, 2015
1,544	25.92	October 13, 2016

No warrants were exercised or expired during the years ended December 31, 2011 and 2012.

Stock Incentive Plan

The 2003 Stock Incentive Plan (the Plan) provides 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

6. Stockholders' Equity (continued)

Stock Incentive Plan (continued)

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. As of December 31, 2012, the Company had reserved 1,523,017 shares of common stock for issuance under the Plan.

A summary of the Company's stock option activity for the year ended December 31, 2012 is as follows:

	OUTSTANDING OPTIONS	WEIGHTED-AVERAGE EXERCISE PRICE
Outstanding as of January 1, 2012	1,318,641	$1.12
Options granted	167,212	1.98
Options exercised	(211)	1.12
Options forfeited	(454)	1.12
Outstanding as of December 31, 2012	1,485,188	1.18
Vested or expected to vest as of December 31, 2012	1,443,495	1.18
Exercisable as of December 31, 2012	1,069,637	1.12

The weighted-average remaining contractual term of stock options that are outstanding and exercisable as of December 31, 2012 was 6.25 years.

The weighted-average fair value of the options granted during the years ended December 31, 2011 and 2012 was $0.89 and $1.51 per share, respectively, applying the Black-Scholes option pricing model utilizing the following weighted-average assumptions:

	2011	2012
Expected term	6.25 years	6.25 years
Expected volatility	102.41%	94.77%
Risk-free interest rate	1.31%	0.60%
Expected dividend yield	0%	0%

As of December 31, 2012, there was $498,702 of total unrecognized compensation expense related to unvested options that will be recognized over a weighted-average period of approximately one year. Total intrinsic value of the options exercised during the years ended December 31, 2011 and 2012 was not material. The total fair value of shares vested in the years ended December 31, 2011 and 2012, was $275,517 and $313,504, respectively.

Stock-based compensation expense was recognized as follows for the years ended December 31:

	2011	2012
Research and development	$168,565	$191,121
General and administrative expense	207,678	224,087
Total	$376,243	$415,208

7. Income Taxes

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

	2011	2012
Deferred tax assets:		
Net operating loss carryforward	$ 15,960,457	$ 13,257,746
Capitalized start-up costs	4,097,443	3,819,650
Patent amortization	327,077	304,902
Research and development credits	3,329,190	3,329,190
Advanced payments	—	1,479,188
Depreciation	6,722	—
Deferred rent	134,228	114,968
Deferred compensation	229,068	392,847
Other	35,206	32,309
Total gross deferred tax assets	24,119,391	22,730,800
Valuation allowance	(24,103,048)	(22,656,888)
Deferred tax assets	16,343	73,912
Deferred tax liabilities:		
Prepaid insurance	(16,343)	(13,895)
Depreciation	—	(60,017)
Total deferred tax liabilities	(16,343)	(73,912)
Net deferred tax assets	$ —	$ —

Based on the Company's limited operating history and management's expectation regarding future profitability, management believes the realization of the Company's deferred tax assets does not meet the more-likely-than-not criteria under ASC 740, *Income Taxes*. Accordingly, a full valuation allowance has been established as of December 31, 2011 and 2012.

As of December 31, 2012, the Company had $33,610,712 of U.S. net operating losses and $3,329,190 of research and development tax credits available to carry forward. A portion of these tax attribute carryforwards will begin to expire in 2023.

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 and research and development tax credit carryforwards that may be used in future years are still subject to adjustment.

7. Income Taxes (continued)

The Company did not have unrecognized tax benefits as of December 31, 2012, 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:

	2011	2012
U.S. Federal statutory tax rate	34.0%	34.0%
State taxes	5.0	5.5
Research credit	5.0	0.0
Other	0.0	0.1
Change in valuation allowance	(44.0)	(39.6)
Provision for income taxes	0.0%	0.0%

Under the Internal Revenue Code, certain substantial changes in the Company's ownership may result in a limitation on the amount of net operating loss carryforwards and research and development tax credit carryforwards that can be used in future years. The Company has not completed an analysis under Internal Revenue Code Sections 382 and 383; therefore, the Company's net operating loss carryforwards and research and development tax credits may be limited for use in a future annual period.

8. Research and License Agreements

In February 2004, the Company 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 GMI-1070 compound are 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 GMI-1070.

In October 2011, the Company and Pfizer entered into a licensing agreement (the Pfizer Agreement) that provides Pfizer an exclusive worldwide license to GMI-1070 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 the Phase 2 trial, after which Pfizer will assume 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 provides for potential milestone payments of up to $115.0 million upon the achievement of specified development milestones, including the dosing of the first patients in Phase 3 clinical trials for up to two indications and the first commercial sale of a licensed product in the United States and selected European countries for up to two indications; potential milestone payments of up to $70.0 million upon the achievement of specified regulatory milestones, including the acceptance of our filings for regulatory approval by regulatory authorities in the United States and Europe for up to two indications; and potential milestone payments of up to $135.0 million upon the achievement of specified levels of annual net sales of licensed products. The next potential milestone payment that the Company might be entitled to receive under the Pfizer Agreement is $35.0 million upon the dosing of the first patient in a Phase 3 clinical trial of GMI-1070.

The Company has determined that each potential future clinical, development and regulatory milestone is substantive. Although sales-based milestones are not considered substantive, they are still recognized upon achievement of the milestone (assuming all other revenue recognition criteria have been met) because there are no undelivered elements that would preclude revenue recognition at that time. The Company is also eligible to receive

8. Research and License Agreements (continued)

royalties on future sales contingent upon annual net sales thresholds. In addition, the Company and Pfizer have formed a joint steering committee that will oversee and coordinate activities as set forth in the research program. The $22.5 million up-front payment is being recognized over a period of 1.5 years. During the years ended December 31, 2011 and 2012, the Company recorded revenue of $3.8 million and $15.0 million, respectively, pursuant to the Pfizer Agreement in the Company's statement of operations. At December 31, 2011 and 2012, $18.8 million and $3.8 million of revenue was deferred under this agreement. As of December 31, 2012, no milestones related to this arrangement have been earned or recognized.

Pfizer has the right to terminate the Agreement by giving prior written notice. As of December 31, 2012, Pfizer and the Company are both in compliance with the provisions of the Agreement.

In 2011 and 2012, under this arrangement the Company incurred a total of $960,000 and $3,305,000, respectively, in research and development expenses.

9. Government Contracts and Other Grants

In May 2012, the Company and International AIDS Vaccine Initiative, Inc. entered into a grant agreement to develop rationally designed anti-HIV immunogens to be used in developing a vaccine.

Upon execution of the grant agreement, the Company received an up-front payment of $500,000. The Company recognizes revenue under government contracts and grants when the work is performed or the expenses are incurred. Any amounts received in advance of performance are recorded as deferred revenue until earned.

In 2012, under this arrangement the Company incurred expenses and recognized revenue of $257,351.

10. Subsequent Events

The Company has evaluated subsequent events through August 16, 2013, the date on which the financial statements were issued.

In connection with preparing for the initial public offering of the Company's common stock, the Company's board of directors and stockholders approved a 1-for-3.302 reverse stock split of the Company's common stock. The reverse stock split became effective on October 25, 2013. All share and per share amounts in the financial statements and notes thereto have been retroactively adjusted for all periods presented to give effect to this reverse stock split, including reclassifying an amount to the reduction in par value of common stock to additional paid-in capital.

GLYCOMIMETICS, INC.
(A Development-Stage Enterprise)

Balance Sheets

	DECEMBER 31, 2012	JUNE 30, 2013 (unaudited)	PRO FORMA JUNE 30, 2013 (unaudited)
Assets			
Current assets:			
Cash and cash equivalents	$ 17,372,832	$ 10,777,982	
Prepaid expenses and other current assets	596,181	358,630	
Total current assets	17,969,013	11,136,612	
Property and equipment, net	450,759	416,935	
Other assets	—	—	
Total assets	$ 18,419,772	$ 11,553,547	
Liabilities and stockholders' equity			
Current liabilities:			
Accounts payable	$ 764,195	$ 538,794	
Accrued bonuses	338,257	213,305	
Accrued expenses	504,822	686,096	
Current portion of deferred rent	91,635	97,834	
Current portion of deferred revenue	3,992,649	129,984	
Total current liabilities	5,691,558	1,666,013	
Deferred rent	199,830	149,330	
Stockholders' equity:			
Series A-1 Convertible Preferred Stock; $0.001 par value; 60,342,745 shares authorized; 30,726,326 shares issued and outstanding at December 31, 2012 and June 30, 2013 and no shares issued and outstanding at June 30, 2013 (Pro Forma)	30,726	30,726	$ —
Common stock; $0.001 par value; 70,258,276 authorized; 929,619 shares and 947,211 shares issued and outstanding at December 31, 2012 and June 30, 2013, respectively and 10,252,570 shares issued and outstanding at June 30, 2013 (Pro Forma)	930	947	10,253
Additional paid-in capital	65,166,551	65,403,958	65,425,378
Deficit accumulated during the development stage	(52,669,823)	(55,697,427)	(55,697,427)
Total stockholders' equity	12,528,384	9,738,204	9,738,204
Total liabilities and stockholders' equity	$ 18,419,772	$ 11,553,547	$ 11,553,547

See accompanying notes.

GLYCOMIMETICS, INC.
(A Development-Stage Enterprise)

Statements of Operations and Comprehensive Income (Loss)

	SIX MONTHS ENDED JUNE 30,		PERIOD FROM MAY 21, 2003 (DATE OF INCEPTION) TO JUNE 30, 2013
	2012	2013	
	(unaudited)		(unaudited)
Revenue	$ 7,541,853	$ 3,862,665	$ 23,464,779
Costs and expenses:			
Research and development	4,255,978	5,624,037	64,723,550
General and administrative	1,089,508	1,262,987	14,232,728
Total costs and expenses	5,345,486	6,887,024	78,956,278
Income (loss) from operations	2,196,367	(3,024,359)	(55,491,499)
Other income (expense):			
Interest income expense, net	12,028	865	(172,367)
Other expense, net	(13,020)	(4,110)	(33,561)
Total other expense	(992)	(3,245)	(205,928)
Net income (loss) and comprehensive income (loss)	$ 2,195,375	$ (3,027,604)	$(55,697,427)
Net income (loss) per share—basic	$ 2.36	$ (3.23)	
Net income (loss) per share—diluted	$ 0.20	$ (3.23)	
Weighted average shares outstanding—basic	929,619	937,590	
Weighted average shares outstanding—diluted	11,018,521	937,590	
Pro forma net (loss) per share—basic and diluted (unaudited)		$ (0.30)	
Pro forma weighted average shares outstanding—basic and diluted (unaudited)		10,242,959	

See accompanying notes.

GLYCOMIMETICS, INC.
(A Development-Stage Enterprise)

Statements of Redeemable Convertible Preferred Stock and Stockholders' Equity

	REDEEMABLE CONVERTIBLE				STOCKHOLDERS' EQUITY						
	SERIES A PREFERRED STOCK		SERIES B PREFERRED STOCK		SERIES A-1 CONVERTIBLE PREFERRED STOCK		COMMON STOCK		ADDITIONAL PAID-IN CAPITAL	ACCUMULATED DEFICIT DURING DEVELOPMENT STAGE	TOTAL STOCKHOLDERS' EQUITY
	SHARES	AMOUNT	SHARES	AMOUNT	SHARES	AMOUNT	SHARES	AMOUNT			
Issuance of common stock to founders at inception	–	$ –	–	$ –	–	$ –	23,622	$ 24	$ 756	$ –	$ 780
Issuance of Series A Convertible Preferred Stock	931,500	9,064,795	–	–	–	–	–	–		–	–
Issuance of Series A Convertible Preferred Stock for services rendered	30,000	300,000	–	–	–	–	–	–		–	–
Issuance of Series A Convertible Preferred Stock for the purchase of assets	48,000	480,000	–	–	–	–	–	–		–	–
Net loss through December 31, 2004	–	–	–	–	–	–	–	–	–	(5,779,637)	(5,779,637)
Balance at December 31, 2004	1,009,500	9,844,795	–	–	–	–	23,622	24	756	(5,779,637)	(5,778,857)
Issuance of warrants	–	–	–	–	–	–	–	–	62,282	–	62,282
Net loss	–	–	–	–	–	–	–	–	–	(3,805,225)	(3,805,225)
Balance at December 31, 2005	1,009,500	9,844,795	–	–	–	–	23,622	24	63,038	(9,584,862)	(9,521,800)
Issuance of Series B Convertible Preferred Stock	–	–	1,974,340	15,350,818	–	–	–	–	–	–	–
Exercise of warrants	–	–	–	–	–	–	1,232	$ 1	$ 406	–	407
Stock-based compensation	–	–	–	–	–	–	–	–	22,470	–	22,470
Net loss	–	–	–	–	–	–	–	–	–	(4,741,892)	(4,741,892)
Balance at December 31, 2006	1,009,500	9,844,795	1,974,340	15,350,818	–	–	24,854	25	85,914	(14,326,754)	(14,240,815)
Stock-based compensation	–	–	–	–	–	–	–	–	46,345	–	46,345
Net loss	–	–	–	–	–	–	–	–	–	(7,306,089)	(7,306,089)
Balance at December 31, 2007	1,009,500	9,844,795	1,974,340	15,350,818	–	–	24,854	25	132,259	(21,632,843)	(21,500,559)
Issuance of Warrant	–	–	–	–	–	–	–	–	47,894	–	143,618
Stock-based compensation	–	–	–	–	–	–	–	–	143,618	–	47,894
Net loss	–	–	–	–	–	–	–	–	–	(9,134,562)	(9,134,562)
Balance at December 31, 2008	1,009,500	9,844,795	1,974,340	15,350,818	–	–	24,854	25	323,771	(30,767,405)	(30,443,609)
Stock-based compensation	–	–	–	–	–	–	–	–	48,020	–	48,020
Issuance of Series A-1 Convertible Preferred Stock	–	–	–	–	30,726,326	30,726	–	–	38,774,329	–	38,805,055
Conversion of Series A and B Preferred Stock to common stock	(1,009,500)	(9,844,795)	(1,974,340)	(15,350,818)	–	–	903,645	$904	$25,194,709	–	25,195,613
Net loss	–	–	–	–	–	–	–	–	–	(10,063,362)	(10,063,362)
Balance at December 31, 2009	–	–	–	–	30,726,326	30,726	928,499	928	64,340,830	(40,830,767)	23,541,717
Stock-based compensation	–	–	–	–	–	–	–	–	34,031	–	34,031
Net loss	–	–	–	–	–	–	–	–	–	(9,381,885)	(9,381,885)
Balance at December 31, 2010	–	–	–	–	30,726,326	30,726	928,499	928	64,374,861	(50,212,652)	14,193,863
Exercise of options	–	–	–	–	–	–	909	$ 1	$ 3	–	4
Stock-based compensation	–	–	–	–	–	–	–	–	376,243	–	376,243
Net loss	–	–	–	–	–	–	–	–	–	(6,113,193)	(6,113,193)
Balance at December 31, 2011	–	–	–	–	30,726,326	30,726	929,407	929	64,751,107	(56,325,845)	8,456,917
Exercise of options	–	–	–	–	–	–	212	$ 0	$ 237	–	237
Stock-based compensation	–	–	–	–	–	–	–	–	415,208	–	415,208
Net income	–	–	–	–	–	–	–	–	–	3,656,022	3,656,022
Balance at December 31, 2012	–	–	–	–	30,726,326	30,726	929,619	930	65,166,551	(52,669,823)	12,528,384
Exercise of options (unaudited)	–	–	–	–	–	–	17,592	$ 18	$ 19,732	–	19,750
Stock-based compensation (unaudited)	–	–	–	–	–	–	–	–	217,674	–	217,674
Net loss (unaudited)	–	–	–	–	–	–	–	–	–	(3,027,604)	(3,027,604)
Balance at June 30, 2013	–	$ -	–	$ -	30,726,326	$30,726	947,211	947	65,403,958	$(55,697,427)	$ 9,738,204

See accompanying notes.

GLYCOMIMETICS, INC.
(A Development-Stage Enterprise)

Statements of Cash Flows

	SIX MONTHS ENDED JUNE 30,		PERIOD FROM MAY 21, 2003 (DATE OF INCEPTION) TO JUNE 30,
	2012	2013	2013
	(unaudited)		(unaudited)
Operating activities			
Net income (loss)	$ 2,195,375	$ (3,027,604)	$(55,697,427)
Adjustments to reconcile net income (loss) to net cash used in operating activities:			
Depreciation	43,288	64,317	1,070,231
Loss on retirement of property and equipment	—	—	172,584
Amortization of imputed interest on notes payable	—	—	19,200
Amortization of debt discount	—	—	205,899
Sales proceeds	—	—	3,531
Compensation expense from stock option grants	203,138	217,674	1,207,885
Issuance of Series A Convertible Preferred Stock for services	—	—	300,000
Acquired in process research and development paid with Series A Convertible Preferred Stock and notes payable	—	—	660,802
Changes in assets and liabilities:			
Prepaid expenses and other current assets	(174,036)	237,551	(275,930)
Accounts payable	(46,351)	(225,401)	538,814
Accrued expenses	(348,818)	56,322	1,683,643
Deferred revenue	(7,041,853)	(3,862,665)	129,984
Deferred rent	(8,093)	(44,301)	247,164
Net cash used in operating activities	(5,177,350)	(6,584,107)	(49,733,620)
Investing activities			
Restricted cash	(10,000)	—	(254,900)
Purchases of property and equipment	(172,247)	(30,492)	(1,490,868)
Net cash used in investing activities	(182,247)	(30,492)	(1,745,768)
Financing activities			
Proceeds from issuance of Convertible Preferred Stock, net of issuance costs	—	—	45,120,901
Proceeds from issuance of common stock	—	19,750	20,947
Proceeds from notes payable	—	—	18,488,929
Repayments of notes payable	—	—	(1,373,407)
Net cash provided by financing activities	—	19,750	62,257,370
Net (decrease) increase in cash and cash equivalents	(5,359,597)	(6,594,849)	10,777,982
Cash and cash equivalents, beginning of period	28,172,174	17,372,832	—
Cash and cash equivalents, end of period	$22,812,577	$10,777,982	$ 10,777,982
Supplemental disclosure of cash flow information			
Cash paid for interest	$ —	$ —	$ 38,006
Supplemental schedule of noncash investing and financing activities			
Conversion of notes payable and accrued interest to Series A-1 Convertible Preferred Stock	$ —	$ —	$ 16,099,770
Notes payable issued for purchase of assets from GlycoTech Corporation and related party	—	—	200,000
Series A Convertible Preferred Stock issued from purchase of assets from GlycoTech Corporation and related party	—	—	480,000

See accompanying notes.

GLYCOMIMETICS, INC.
(A Development-Stage Enterprise)

Notes to Unaudited Financial Statements

1. Nature of Business

GlycoMimetics, Inc. (the Company), a Delaware corporation, 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 was incorporated on April 4, 2003 and commenced operations on May 21, 2003. The Company is headquartered in Gaithersburg, Maryland.

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, licensing proprietary technology and securing adequate capital for anticipated growth and operations. Accordingly, the Company is considered to be in the development stage as defined in Accounting Standards Codification (ASC) 915, *Development Stage Entities*.

The Company has incurred significant losses in the development of its product candidates, with the exception of the year ended December 31, 2012, in which it recognized net income of $3.7 million. These losses in prior periods were primarily attributable to the research and development of the Company's lead drug candidate, GMI-1070. 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 $55,697,427 at June 30, 2013, and expects to continue incurring losses for the foreseeable future. The Company currently anticipates that its cash and cash equivalents will be sufficient to meet its anticipated cash requirements through the first quarter of 2014.

The Company's operations are subject to certain risks and uncertainties. The risks include rapid technology changes, the need to manage growth, the need to retain key personnel, the need to protect intellectual property, and the availability of additional capital financing on terms acceptable to the Company. The Company's current operating assumptions and projections, which reflect management's best estimate of future revenue and operating expenses, indicate that anticipated operating expenditures through the first quarter of 2014 can be met by available working capital; however, the Company's ability to meet its projections is subject to uncertainties, and there can be no assurance that the Company's current projections will be accurate. If the Company's cash requirements are more than projected, the Company may require additional financing. The type, timing and terms of financing selected by the Company, if required, will be dependent upon the Company's cash needs, the availability of financing sources and the prevailing conditions in the financial markets. There can be no assurance that such financing will be available to the Company at any given time or available on favorable terms.

Management believes that the Company has access to capital resources through private investments of equity from its existing stockholders. However, it has not secured any commitment for new financing as of the date of this prospectus, nor can it provide any assurance that new financing will be available on commercially acceptable terms, if at all. If the Company is unable to secure additional capital, it will be required to curtail its operations, and if these measures fail, it may not be able to continue its business. Curtailment of operations would cause significant delays in the Company's efforts to introduce its products to market, which is critical to the realization of its business plan and future operations of the Company.

2. Summary of Significant Accounting Policies

Basis of Presentation

The financial statements have been prepared in conformity with accounting principles generally accepted in the United States (GAAP) for interim financial information. Certain information and footnotes normally included in

2. Summary of Significant Accounting Policies (continued)

Basis of Presentation (continued)

financial statements prepared in accordance with GAAP have been condensed or omitted pursuant to the rules and regulations of the Securities and Exchange Commission.

Unaudited Interim Financial Information

The accompanying balance sheet as of June 30, 2013, statements of operations and comprehensive income (loss) and statements of cash flows for the six months ended June 30, 2012 and 2013 and the period May 21, 2003 (date of inception) through June 30, 2013, and the statements of redeemable convertible preferred stock and stockholders' equity for the six months ended June 30, 2013 and the period May 21, 2003 (date of inception) through June 30, 2013 are unaudited. The interim unaudited financial statements have been prepared on the same basis as the annual audited financial statements and, in the opinion of management, reflect all adjustments, which include only normal recurring adjustments, necessary for the fair statement of the Company's financial position as of June 30, 2013 and the results of its operations and its cash flows for the six months ended June 30, 2012 and 2013 and the period May 21, 2003 (date of inception) through June 30, 2013. The financial data and other information disclosed in these notes related to the six months ended June 30, 2012 and 2013 are unaudited. The results for the six months ended June 30, 2013 are not necessarily indicative of results to be expected for the year ending December 31, 2013, any other interim periods, or any future year or period.

Unaudited Pro Forma Presentation

On August 14, 2013, the Company's board of directors authorized management of the Company to file a registration statement with the Securities and Exchange Commission for the Company to sell shares of common stock to the public. The unaudited pro forma balance sheet information as of June 30, 2013 assumes the conversion of all outstanding shares of preferred stock as of that date into 9,305,359 shares of common stock.

The unaudited pro forma net loss per share is computed using the weighted-average number of shares of common stock outstanding after giving pro forma effect to the conversion of all issued and outstanding shares of preferred stock during the six months ended June 30, 2013 into shares of common stock as if such conversion had occurred at January 1, 2013.

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.

Significant Accounting Policies

The Company's significant accounting policies are disclosed in the audited financial statements for the years ended December 31, 2011 and 2012 included elsewhere in this prospectus. Since the date of those financial statements, there have been no changes to the Company's significant accounting policies.

2. Summary of Significant Accounting Policies (continued)

Restricted Cash

The Company is required to maintain certificates of deposit that serve as collateral for operating leases and credit card accounts. Amounts classified as restricted cash are $83,000 at each of December 31, 2012 and June 30, 2013 and are presented under prepaid expenses and other current assets.

Fair Value Measurements

The Company's financial instruments include cash and cash equivalents. The fair values of the financial instruments approximate their carrying values at December 31, 2012 and June 30, 2013, 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 has 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 June 30, 2013 and December 31, 2012. The carrying value of cash held in money market funds of approximately $10.3 million as of June 30, 2013, is included in cash and cash equivalents and approximates market values based on quoted market prices (Level 1 inputs).

Comprehensive Income (Loss)

Effective January 1, 2012, the Company adopted Financial Accounting Standards Board (FASB) Accounting Standards Update (ASU) 2011-05, *Presentation of Comprehensive Income*, which requires the presentation of the comprehensive income (loss) and its components, as part of the financial statements. Comprehensive income (loss) comprises net income (loss) and other changes in equity that are excluded from net income (loss). For the six month periods ended June 30, 2012 and 2013, and for the period from May 21, 2003 (date of inception) to June 30, 2013, the Company's net income (loss) equals comprehensive income (loss) and, accordingly, no additional disclosure is presented.

Recently Issued Accounting Pronouncements Adopted

In February 2013, FASB issued ASU No. 2013-02, *Comprehensive Income (Topic 220): Reporting of Amounts Reclassified Out of Accumulated Other Comprehensive Income* (ASU 2013-02). ASU 2013-02 requires companies

2. Summary of Significant Accounting Policies (continued)

Recently Issued Accounting Pronouncements Adopted (continued)

to present either in a single note or parenthetically on the face of the financial statements, the effect of significant amounts reclassified from each component of accumulated other comprehensive income based on its source and the income statement line items affected by the reclassification. This guidance is effective for annual reporting periods beginning after December 15, 2012. The Company's adoption of ASU 2013-02 did not have a significant impact on its financial position, results of operations or cash flows.

3. Net Income (Loss) Per Share

The following table sets forth the computation of basic and diluted earnings per share for the six months ended June 30, 2012 and 2013:

	2012	2013
Net income (loss)	$ 2,195,375	$(3,027,604)
Income (loss) per share—basic	$ 2.36	$ (3.23)
Income (loss) per share—diluted	$ 0.20	$ (3.23)
Weighted-average number of shares—basic	929,619	937,590
Weighted-average number of shares—diluted	11,018,521	937,590

The following potentially dilutive securities outstanding at June 30, 2012 and 2013 have been excluded from the computation of diluted weighted average shares outstanding, as they would be anti-dilutive:

	2012	2013
Warrants	1,544	635,258
Stock options	42,072	1,476,892
Convertible preferred stock	—	9,305,359

4. Property and Equipment

Property and equipment consist of the following:

	DECEMBER 31, 2012	JUNE 30, 2013
Furniture, fixtures, and equipment	$ 106,291	$ 106,291
Laboratory equipment	900,837	901,815
Office equipment	22,421	25,664
Computer equipment	177,317	201,822
Leasehold improvements	40,077	41,843
	1,246,943	1,277,435
Less accumulated depreciation	(796,184)	(860,500)
	$ 450,759	$ 416,935

4. Property and Equipment (continued)

Depreciation of property and equipment totaled $43,288 and $64,317 for the six months ended June 30, 2012 and June 30, 2013, respectively, and $1,070,231 cumulatively for the period from May 21, 2003 (date of inception) to June 30, 2013.

5. Operating Leases

The Company leases its office and research space under a five-year operating lease that is subject to escalation clauses. In connection with its lease arrangement, the Company received a rent abatement as a lease incentive. The rent abatement has been recognized as deferred rent that will be adjusted on a straight-line basis over the term of the lease. Deferred rent was $247,164 at June 30, 2013. Total rent expense was $159,161 for the six months ended June 30, 2012 and $177,307 for the six months ended June 30, 2013, and $2,564,552 for the period from May 21, 2003 (date of inception) to June 30, 2013.

The following table presents the future minimum lease payments as of June 30, 2013 under the Company's lease for operating space:

YEAR	AMOUNT
2013	$ 243,656
2014	489,360
2015	418,069
Total	$1,151,085

6. Stockholders' Equity

Convertible Preferred Stock

Series A-1 Convertible Preferred Stock

On October 20, 2009, the Company entered into a Series A-1 Preferred Stock Purchase Agreement with certain investors. In connection with the financing, the Company issued 30,726,326 shares of Series A-1 Convertible Preferred Stock for an aggregate amount of $38,979,412, which included the conversion of principal and accrued interest related to an earlier bridge financing of $16,099,770. In connection with the Series A-1 Preferred Stock financing, all then-outstanding shares of Series A and Series B Preferred Stock were converted into common stock, and all then outstanding warrants to purchase Series B Preferred Stock were converted into warrants to purchase common stock. Immediately prior to the Series A-1 Preferred Stock financing, the Company effected a 1-for-10 reverse stock split of the outstanding common stock. All prior-period applicable share amounts have been retroactively adjusted to reflect the reverse stock split. As of June 30, 2013, the Company's Amended and Restated Certificate of Incorporation authorized the issuance of 130,601,021 shares of stock, of which 70,258,276 are designated as common stock with a par value of $0.001, and of which 60,342,745 are designated as Series A-1 Convertible Preferred Stock with a par value of $0.001.

Voting Rights and Dividends

The holder of each share of Series A-1 Convertible Preferred Stock has the right to one vote for each share of common stock into which the shares of Series A-1 Convertible Preferred Stock held by the holder are then convertible. The holder has full voting rights and powers equal to the voting rights and powers of a holder of common stock. As long as any shares of Series A-1 Convertible Preferred Stock remain outstanding, the holders of such shares are entitled to elect five directors of the Company. The holders of shares of Series A-1 Convertible Preferred Stock are entitled to receive dividends when, as, and if declared by the Board of Directors at a rate of $0.1015 per share per annum. Dividends are not cumulative.

6. Stockholders' Equity (continued)

Convertible Preferred Stock (continued)

Liquidation

In the event of a liquidation of the Company, the holders of shares of Series A-1 Convertible Preferred Stock are entitled to receive, prior and in preference to any other series or class of capital stock, an amount equal to the greater of (i) an amount per share equal to the Original Issue Price of $1.2686 plus an amount equal to all declared but unpaid dividends thereon, or (ii) an amount per share equal to the amount per share such holder would have received upon a liquidation event had each holder of Series A-1 Convertible Preferred Stock converted such shares into common stock immediately prior to the liquidation event.

Conversion

The Series A-1 Convertible Preferred Stock is convertible into common shares at the election of the stockholder at any time. The number of shares of common stock a holder of Series A-1 Convertible Preferred Stock will receive is equal to the number of shares of Series A-1 Convertible Preferred Stock multiplied by the conversion rate. As of June 30, 2013, the conversion rate for the Series A-1 Convertible Preferred Stock was one-for-one. Upon the effectiveness of the reverse stock split effected in connection with the Company's proposed initial public offering, the conversion rate for the Series A-1 Convertible Preferred Stock changed such that every one share of Series A-1 Convertible Preferred Stock became convertible into approximately 0.3028 shares of common stock. The conversion rate may be adjusted for certain anti-dilutive events. All outstanding shares of Series A-1 Convertible Preferred Stock shall automatically convert to shares of common stock upon an initial public offering of at least $36 million and per share price of $12.55, subject to adjustment as set forth in the Amended and Restated Certificate of Incorporation.

Common Stock

As of December 31, 2012 and June 30, 2013, there were 70,258,276 shares of common stock authorized to be issued. Certain of the outstanding shares of common stock are subject to stock restriction agreements (each, a Restriction Agreement). Pursuant to a Restriction Agreement, a stockholder shall not sell, assign, transfer, or otherwise dispose of any shares except to the Company or as expressly provided in the Restriction Agreement.

Warrants to Acquire Company Stock

On October 13, 2006, the Company issued a warrant to purchase 1,544 shares of common stock at an exercise price of $25.92 per share to a commercial bank. This warrant, which was originally issuable for Series B Preferred Stock prior to the conversion of Series B Preferred Stock to common stock in 2009, was vested upon issuance and expires in October 2016. The fair value of the warrant, which was de minimis, was calculated using the Black-Scholes option pricing model.

The following common stock warrants were outstanding as of June 30, 2013:

NUMBER OF SHARES UNDERLYING WARRANTS	EXERCISE PRICE PER SHARE	EXPIRATION DATE
298,402	$ 0.33	July 18, 2018
301,986	0.33	January 16, 2019
17,041	0.33	December 9, 2015
15,250	0.33	January 30, 2019
1,026	0.33	December 16, 2015
1,544	25.92	October 13, 2016

No warrants were exercised or expired during the six months ended June 30, 2012 or 2013.

Stock Incentive Plan

The 2003 Stock Incentive Plan (the Plan) provides 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

6. Stockholders' Equity (continued)

Stock Incentive Plan (continued)

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 Plan terminated in accordance with its terms during the six months ended June 30, 2013.

A summary of the Company's stock option activity for the six months ended June 30, 2013 is as follows:

	OUTSTANDING OPTIONS	WEIGHTED-AVERAGE EXERCISE PRICE
Outstanding as of January 1, 2013	1,485,188	$1.18
Options granted	9,296	3.73
Options exercised	(17,592)	1.12
Outstanding as of June 30, 2013	1,476,892	1.22
Vested or expected to vest as of June 30, 2013	1,434,921	1.22
Exercisable as of June 30, 2013	1,222,675	1.18

The weighted-average remaining contractual term of stock options that are outstanding and exercisable as of June 30, 2013 was 6.4 years.

The weighted-average fair value of the options granted during the six months ended June 30, 2012 and 2013 was $1.51 and $2.50 per share, respectively, applying the Black-Scholes option pricing model utilizing the following weighted-average assumptions:

	2012	2013
Expected term	6.25 years	6.25 years
Expected volatility	94.77%	78.07%
Risk-free interest rate	0.60%	0.56%
Expected dividend yield	0%	0%

As of June 30, 2013, there was $302,197 of total unrecognized compensation expense related to unvested options that will be recognized over a weighted-average period of approximately one year. Total intrinsic value of the options exercised during the six months ended June 30, 2012 and 2013 was not material. The total fair value of shares vested in the six months ended June 30, 2012 and 2013 was $140,391 and $163,660, respectively.

6. Stockholders' Equity (continued)

Stock Incentive Plan (continued)

Stock-based compensation expense was recognized for the six months ended June 30:

	2012	2013
Research and development	$ 91,219	$ 99,999
General and administrative expense	111,919	117,675
Total	$203,138	$217,674

7. Research and License Agreements

In February 2004, the Company 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 GMI-1070 compound are 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 GMI-1070.

In October 2011, the Company and Pfizer entered into a licensing agreement (the Agreement) that provides Pfizer an exclusive worldwide license to GMI-1070 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 the Phase 2 trial under Pfizer's oversight, after which Pfizer will assume all further development and commercialization responsibilities. Upon execution of the Agreement, the Company received an up-front payment of $22.5 million. The Pfizer Agreement also provides for potential milestone payments of up to $115.0 million upon the achievement of specified development milestones, including the dosing of the first patients in Phase 3 clinical trials for up to two indications and the first commercial sale of a licensed product in the United States and selected European countries for up to two indications; potential milestone payments of up to $70.0 million upon the achievement of specified regulatory milestones, including the acceptance of our filings for regulatory approval by regulatory authorities in the United States and Europe for up to two indications; and potential milestone payments of up to $135.0 million upon the achievement of specified levels of annual net sales of licensed products. The next potential milestone payment that the Company might be entitled to receive under the Pfizer Agreement is $35.0 million upon the dosing of the first patient in a Phase 3 clinical trial of GMI-1070.

The Company has determined that each potential future clinical, development and regulatory milestone is substantive. Although sales-based milestones are not considered substantive, they are still recognized upon achievement of the milestone (assuming all other revenue recognition criteria have been met) because there are no undelivered elements that would preclude revenue recognition at that time. The Company is also eligible to receive royalties on future sales contingent upon annual net sales thresholds. In addition, the Company and Pfizer have formed a joint steering committee that will oversee and coordinate activities as set forth in the research program. The $22.5 million up-front payment was recognized over a period of 1.5 years and was fully recognized as of June 30, 2013. During the six months ended June 30, 2012 and 2013, the Company recorded revenue of $7.5 million and $3.8 million, respectively, pursuant to the Pfizer license agreement in the Company's statement of operations. During the six months ended June 30, 2012 and 2013, no milestones related to this arrangement were earned or recognized.

Pfizer has the right to terminate the Agreement by giving prior written notice. As of June 30, 2013, Pfizer and the Company are both in compliance with the provisions of the Agreement.

4,000,000 Shares

Common Stock

PRELIMINARY PROSPECTUS

Joint Book-Running Managers

Jefferies
Barclays

Co-Managers

Stifel
Canaccord Genuity

, 2013