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Via EDGAR and ELECTRONIC MAIL

October 23, 2013

FOIA Confidential Treatment Request
Confidential Treatment Requested by
GlycoMimetics, Inc. in connection with
Registration Statement on Form S-1 (File No. 333-191567)

U.S. Securities and Exchange Commission
Division of Corporation Finance
100 F Street, N.E.
Mail Stop 4720
Washington, D.C. 20549

Attn: Mr. Jeffrey P. Riedler
Mr. Daniel Greenspan
Mr. Matthew Jones
Mr. Scott Wuenschell
Mr. Mark Brunhofer

Re: **GlycoMimetics, Inc.**
Registration Statement on Form S-1
Filed October 4, 2013
File No. 333-191567

Gentlemen:

On behalf of our client, GlycoMimetics, Inc. ("***GlycoMimetics***" or the "***Company***"), we are responding to the comments of the staff (the "***Staff***") of the Securities and Exchange Commission (the "***Commission***") contained in its letter dated October 17, 2013 (the "***Comment Letter***"), relating to the above referenced Registration Statement (the "***Registration Statement***"). In response to the comments set forth in the Comment Letter (the "***Comments***"), the Company is proposing to revise disclosure in the Registration Statement as set forth in this response letter.

Note 8: Research and License Agreements, page F-19

1. Please refer to your response to comment 27 and address the following additional comments:
   - Please tell us how the potential future development and regulatory milestones are substantive if you have no further responsibilities for the development of the program after completion of the Phase 2 clinical trial in April 2013 consistent with your response to comment 26. Please refer to ASC 605-28-25-2a.
   - Please revise your disclosure regarding aggregated milestones to disclose the nature of the various milestone triggering events for each aggregated category of milestones you disclosure. Specifically for your regulatory milestones, please

clarify whether these milestones include those only for regulatory approval or whether they also include milestones for the submission of regulatory filings.

- Notwithstanding your assertion of "information overload," please revise your disclosure to separately disclose the triggering event and related contingent consideration for any individually significant milestone. If you do not believe that any individual milestone is significant, please demonstrate to us why not by providing us a break-down of all of your individual milestones and an explanation why each is not significant.

Response to first bullet point:

In response to the Staff's comment, the Company advises the Staff that, as described in the Company's prior response to Comment 26, the Company had substantial involvement with Pfizer's efforts as a result of its conducting and completing the Phase 2 clinical trial pursuant to the terms of its agreement with Pfizer. As a result, the Company determined that the non-refundable development and regulatory milestones that are expected to be achieved as a result of the Company's efforts during the development phase are substantive. Specifically, the Company believes the non-refundable development and regulatory milestones that are expected to be achieved during the development phase meet the three criteria set forth in ASC 605-28-25-2 as follows:

1. The consideration is commensurate with either the entity's 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 the entity's performance to achieve the milestone.

At the inception of the Pfizer agreement, the Company evaluated the milestone consideration and determined that it was commensurate with its performance required to achieve the development and regulatory milestones, considering the significant expected involvement of the Company with Pfizer during the development phase. The Company also determined that the milestone consideration was commensurate with the enhancement of the value of the delivered license, as it represented a significant step toward advancing GMI-1070 into a Phase 3 clinical trial and ultimately toward product approval. The Company believes that this step represented a significant enhancement of value with respect to the underlying license obtained by Pfizer.

2. The consideration relates solely to past performance.

The Company's completion of the Phase 2 clinical trial, in conjunction with the Pfizer's own efforts, will enable these development and regulatory milestones to be achieved. Once achieved, there will be no further obligations or performance requirements on the part of the Company. No future milestone event is contingent on any future performance

by GlycoMimetics. For example, the next possible milestone in the Pfizer agreement is the dosing of a first patient in a Phase 3 clinical trial. The Phase 3 clinical trial would not be able to be commenced without all of the Company's past efforts in completing the Phase 2 clinical trials and, therefore, once the first patient has been dosed in the Phase 3 clinical trial, the milestone will have been achieved.

3. The consideration is reasonable relative to all of the deliverables and payment terms (including other potential milestone consideration) within the arrangement.

At the inception of the Pfizer agreement, the Company evaluated the milestone consideration and determined that it was reasonable relative to all of the deliverables and payment terms within the arrangement. The Company's determination was based upon the following considerations:

- Milestone payments are structured to acknowledge the fact that the underlying license, if it results in an approved product, will be very valuable to Pfizer. However, the probability of a product being successfully developed and approved is very low in the biotech industry, and the associated expense to Pfizer is very high. As a result, the aggregate milestone payments that potentially could be earned by the Company under the arrangement have been structured such that they are only due as significant developmental hurdles are met and any such payments are in the aggregate many times larger than the $22.5 million upfront license fee paid to the Company at the commencement of the Pfizer agreement. The Pfizer agreement provides for aggregate potential milestone payments of $320.0 million, of which $185.0 million are considered to be substantive.
- The milestone payments are due to the Company within 45 days of achievement of the underlying event, which is consistent with the payment term of the upfront license fee.

Response to second bullet point:

In response to the Staff's comment, the Company proposes to revise the disclosure on page F-19 of the Registration Statement. The Company proposes to delete the sentence that read "The Pfizer Agreement also provides potential development milestone payments of up to $115.0 million, regulatory milestone payments of up to $70.0 million and sales-based milestone payments of up to $135.0 million" and to replace it with:

"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 Company proposes to make corresponding revisions to the disclosure appearing on pages 47, 64, 73 and F-32 of the Registration Statement.

Response to third bullet point:

The Company advises the Staff that it does not believe any of the individual milestones to be significant at this time other than the potential $35.0 million milestone payment upon the initiation of dosing of the first patient in a Phase 3 clinical trial of GMI-1070. This milestone has been disclosed on pages 12 and 47 of the Registration Statement, and the Company proposes to add disclosure on pages F-19 and F-32 of the Registration Statement to the effect that "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."

With respect to the remaining $80.0 million of potential development milestones and $70.0 million of potential regulatory milestones, the breakdown of such milestones is as follows:

Development milestone triggering event	Contingent payment (in millions)
Initiation of dosing of a first patient in a Phase 3 clinical trial for second indication	$ [* * *]
First commercial sale in the United States for first indication	[* * *]
First commercial sale in the United States for second indication	[* * *]
First commercial sale in specified European countries for first indication	[* * *]
First commercial sale in specified European countries for second indication	[* * *]
Total potential development milestones after dosing of first patient in Phase 3 clinical trial	$ 80.0

Regulatory milestone triggering event	Contingent payment (in millions)
Acceptance of filing for regulatory approval by the FDA for first indication	$[***]
Acceptance of filing for regulatory approval by the FDA for second indication	[* * *]
Acceptance of filing for regulatory approval by the EMA for first indication	[* * *]
Acceptance of filing for regulatory approval by the EMA for second indication	[* * *]
Total potential regulatory milestones	$70.0

With respect to the sales-based milestones, the Company is eligible to receive a milestone payment of $[* * *] million upon achieving annual net sales of licensed product in excess of $[* * *], plus an additional $[* * *] million upon achieving annual net sales in excess of $[* * *] and another $[* * *] million upon achieving annual net sales in excess of $[* * *].

The Company believes that with the additional disclosure described above in the Company's response to the second bullet point, combined with the disclosure of the next potential milestone to be achieved, investors will have a sufficient level of detail to understand the types of potential milestone payments that the Company may be able to earn in the aggregate under the agreement with Pfizer, without having to speculate as to the achievement of any particular milestone until the likelihood of its achievement has increased. The Company respectfully advises the Staff that its disclosure approach was designed to help investors focus on the milestones that have the potential to impact the Company's operations in the near term, which the Company believes represent the material milestones. The Company believes this disclosure approach is consistent with the requirements of ASC 605-28-50-2b.

While ASC 605-28-50-2b requires a description of each milestone and related contingent consideration included in an arrangement, the Company believes the Financial Accounting Standards Board intended for companies to apply materiality considerations, including quantitative and qualitative factors, when complying with these requirements. Certain of the foregoing potential future milestones are quantitatively material to the Company's operations at the present time, based solely on the amount of the milestone. However, when the probability of achieving such milestones and the timing of future achievement is considered, these future milestones, individually, are not material to the Company, its operations or the readers of the financial statements until such time as the milestone is more likely to occur in the near term. The Company therefore believes that individual disclosure should be provided for material milestones (i.e., those milestones

that are likely to have a potential impact on the Company in the near term) while disclosure of the remaining immaterial milestones on an aggregate basis is appropriate. The Company believes such an approach is consistent with the requirements of ASC 605-28-50-2b and also directs the attention of readers of the financial statements to the most material information, avoiding the potential confusion and unrealistic expectations that are likely to occur if readers of the financial statements are provided with details of each future milestone regardless of the probability of achievement and potential timing of achievement.

As of the date of this response letter, the Company has not achieved any of the potential milestones under its collaboration with Pfizer. The amount of time necessary to reach each remaining potential milestone is uncertain, and the achievement of any milestone is highly contingent on a number of factors, most of which, by the nature of drug discovery, are not within the Company's control and may not be achieved regardless of the amount of time, money or effort contributed to achieving the milestone. The Company believes that within the biotechnology industry there are numerous instances in which a collaborator's development of a drug candidate has terminated for reasons outside the control of the company, including disappointing clinical findings or changes in the collaborator's corporate priorities, direction or return on investment calculations, resulting in none of the milestones ever being achieved. As a result, the Company cannot, with any degree of reasonable accuracy, predict if or when any of the milestones under its collaboration will be achieved until the activities related to the milestone are complete or substantially complete.

Further, each of the milestones in the development and regulatory categories result from the progress of development through a predetermined regulatory approval process and thus have gating features, whereby subsequent milestones will not be achieved if the next potential milestone is not achieved. Disclosure of the details of all potential future milestones would likely be confusing and could provide investors or potential investors with unrealistic expectations of future revenues because an investor would not have a basis to form an opinion on the likelihood or timing of achievement of any given milestone since the factors that determine whether a milestone is likely to be achieved are (i) not always known, (ii) not always in the Company's control and (iii) substantially at risk at all phases of development. Because the Company's focus is on achieving the next gating milestone, the information that is material to an investor or potential investor is this next potential milestone. Ultimately, because of this gating structure, the probability of achieving subsequent milestones, until the achievement of the next potential milestone is assured, cannot be determined with any reasonable degree of certainty.

Additionally, if the Company were to provide disclosure of individual milestones without regard to materiality, in order to avoid misleading disclosure and for readers of the financial statements to understand fully the probability of achievement of each future

milestone, the potential timing of achievement of each milestone and the importance of each milestone to the Company and the agreement as a whole, the Company would need to provide supplemental forward-looking information for each milestone and contingent payment in the footnotes to the financial statements. The disclosure of such speculative, forward-looking information goes significantly beyond the purpose of the footnotes to the financial statements, which is to provide actual historical information. Such forward-looking information would present significant difficulties for the Company's independent auditors, and the Company would have no safe harbor protection with respect to such statements in the footnotes to the financial statements. Further, because of the nature of drug discovery, despite the Company's intentions related to development, there are numerous factors outside of the Company's control that could interfere with the Company's plans to progress through development and to achieve these milestones, and these factors are not predictable or capable of being audited.

As a result of these factors, the Company believes that disclosing only the next potential milestone provides the reader of the financial statements with meaningful information relative to the Company's business that is reasonably likely to have an impact in the nearer term, though any achievement of such milestones may be more than one year away. Because the next potential milestone is the closest in time to achievement, the Company and its investors have greater visibility regarding progress toward achievement of such milestones. Further, disclosures in the Business and Management's Discussion and Analysis sections of the Registration Statement discuss the Company's recent progress and near-term development plans in achieving its next potential milestone. Focusing the attention of the reader of the financial statements on this next potential milestone aligns this disclosure with the other research and development disclosures throughout the Registration Statement, which are the developments that the Company believes are the most critical at any point in time.

By aggregating the potential future milestones into the categories of (i) development milestone, (ii) regulatory milestones and (iii) sales-based milestones, the Company believes it is providing readers of the financial statements with an understanding of the full scope of the Pfizer collaboration as well as characterizing the amounts of such milestones that are (x) individually contingent upon the Company, together with Pfizer in certain instances, successfully completing development, testing and approval phases and (y) contingent upon commercialization of any resultant product candidate, which is largely outside of the Company's control as the Company generally is not obligated to participate in the commercialization efforts that impact the sales-based milestones of its collaborations.

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Please direct any questions or comments concerning this response letter to either the undersigned at (703) 456-8058 or Brian F. Leaf, of this office, at (703) 456-8053.

Very truly yours,

/s/ Brent B. Siler

Brent B. Siler

cc: Rachel K. King, GlycoMimetics, Inc.
Divakar Gupta, Latham & Watkins

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