



Brent B. Siler
T: +1 703 456 8058
bsiler@cooley.com

VIA EDGAR AND ELECTRONIC MAIL

October 18, 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 Riedler
Mr. Daniel Greenspan
Mr. Matthew Jones
Mr. Scott Wuenschell
Mr. Mark Brunhofer

RE: **GlycoMimetics, Inc.
Registration Statement on Form S-1
Registration No. 333-191567**

Gentlemen:

On behalf of GlycoMimetics, Inc. (the "**Company**"), please find below supplemental information in response to comments from the staff (the "**Staff**") of the Securities and Exchange Commission (the "**Commission**").

Because of the commercially sensitive nature of information contained herein, this submission is accompanied by a request for confidential treatment for selected portions of this letter. The Company has filed a separate letter with the Office of Freedom of Information and Privacy Act Operations in connection with the confidential treatment request, pursuant to Rule 83 of the Commission's Rules on Information and Requests, 17 C.F.R. § 200.83. For the Staff's reference, we have enclosed a copy of the Company's letter to the Office of Freedom of Information and Privacy Act Operations as well as a copy of this correspondence, marked to show the portions redacted from the version filed via EDGAR and for which the Company is requesting confidential treatment.

To assist the Staff in its review of the Company's Registration Statement on Form S-1 (File No. 333-191567) (the "**Registration Statement**"), the Company supplementally advises the Staff that on the date hereof, Jefferies LLC and Barclays Capital Inc., the lead underwriters for the Company's initial public offering and on behalf of the underwriters, advised the Company that, based on current market conditions, they would recommend a preliminary estimated price range of between \$[* * *] and \$[* * *] per share of the Company's common stock for the Company's initial public offering, such range to be updated for a reverse stock split to be effected.

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HAS BEEN OMITTED AND FILED SEPARATELY WITH THE COMMISSION PURSUANT TO 17 CFR §200.83**

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This preliminary estimate reflects the estimated public offering price of the shares to be sold in the market, which shares will be freely tradable and will not be subject to a lock-up agreement, in contrast with substantially all of the Company's outstanding stock, and thus does not include any marketability discount. The range also assumes a successful initial public offering with no weighting attributed to any other outcome for the Company's business, such as remaining a privately held company.

The size of the reverse stock split ratio has not yet been definitively determined. However, due to the recent volatility in the financial markets and the volatilities evident in the market for recent initial public offering issuers, the price range of the common stock may change. The Company hereby advises the Staff that it intends to file a pre-effective amendment to its registration statement with a preliminary prospectus that will include a bona fide post-split estimated public offering price range prior to the distribution of any preliminary prospectus. This price range will be no more than \$2.00, if the maximum price is \$10.00 per share or less, or 20%, if the maximum price is greater than \$10.00 per share.

Based on the preliminary per share estimate provided above, the current status of the financial markets and continued uncertainty as to whether the Company will be able to complete its planned initial public offering within the proposed price range, or at all, the Company believes that the most recent contemporaneous valuation of its common stock as of April 1, 2013, as described in detail on pages 54-55 of the Registration Statement, is consistent with the underwriters' preliminary estimate. Specifically, the discounted cash flow methodology used in the Company's April 1, 2013 valuation yielded an equity value of approximately \$[* * *] million. After allocation of this equity value to the classes of the Company's common stock and application of a discount to reflect the time value of money for the period from April 1, 2013 until the assumed dates of a liquidity event and a discount for lack of marketability, each as described in the prospectus, the Company concluded that the common stock had a fair value of \$1.13 as of April 1, 2013.

The Company notes, however, that the discounted cash flow analysis assumed only a [* * *]% probability of the Company receiving the \$35.0 million potential milestone payment from Pfizer upon the initiation of dosing of the first patient in a Phase 3 clinical trial of GMI-1070. Since the date of the April 1, 2013 valuation, Pfizer has advised the Company that it intends to begin enrolling patients for the Phase 3 clinical trial in mid-2014, pending approval through Pfizer's internal governance process. Pfizer has also informed the Company that a number of activities are underway in support of the initiation of the Phase 3 clinical trial, including preliminary agreement reached with the FDA on clinical trial design, progress on manufacturing, completion of toxicology studies, discussions with the FDA regarding trial design, contracting with a third-party contract research organization to support the clinical trial activities, and convening multiple

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clinical advisory boards for trial design and implementation. Additionally, the Pfizer team is targeting an End of Phase 2 FDA meeting before the end of 2013. Based on these developments, the Company believes that the probability of receiving the \$35.0 million milestone payment has significantly increased since the date of the April 1, 2013 valuation. Had a probability of [* * *]% been included in the April 1, 2013 valuation, the estimated enterprise value of the Company would have been approximately \$[* * *] million higher.

The Company further notes for the Staff that the April 1, 2013 valuation assumed a probability of less than [* * *]% that Pfizer would be able to successfully initiate and complete the Phase 3 clinical trial and file an NDA for GMI-1070 by the end of [* * *]. The Company believes that, in light of the developments since April 1, 2013 described above, this probability has substantially increased as well. Had the Company assigned a probability of [* * *]% to this outcome, the estimated enterprise value of the Company would have been at least \$[* * *] million higher under the discounted cash flow analysis.

Finally, the Company notes that, as described in the prospectus, the Company has progressed its plans for the development of its product candidate GMI-1271, including generation of additional supportive preclinical data in support of the filing of an IND in the first quarter of 2014. The Company advises the Staff that its April 1, 2013 valuation assigned only nominal value to GMI-1271. With the additional development progress and the increased probability of advancing into clinical trials, the Company estimates that its enterprise value would have been approximately \$[* * *] million higher had the projected discounted cash flows with respect to GMI-1271 been included in the April 1, 2013 valuation.

Taking each of these developments together, combined with the other factors described on pages 54-55 of the Registration Statement, the Company and the underwriters believe that a preliminary estimated enterprise value of the Company of between \$[* * *] million and \$[* * *] million is appropriate based on current market conditions. Assuming the conversion of the Company's outstanding preferred stock and the exercise of outstanding options and warrants, this would result in the preliminary pre-split estimated price range of between \$[* * *] and \$[* * *] per share.

Based on the analysis set forth above, the Company does not propose to increase the amount of its previously recorded stock-based compensation expense as a result of the underwriters' preliminary estimate. Further, the Company advises the Staff that, even if it had valued the common stock at \$[* * *] per share, the midpoint of the preliminary pre-split estimated price range, for purposes of its April 9, 2013 option grants, the resulting change in stock-based compensation expense for the six months ended June 30, 2013 would not have been material.

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If you have any questions or comments with regard to this matter, please do not hesitate to contact the undersigned at (703) 456-8058 or Brian F. Leaf, of this office, at (703) 456-8053.

Very truly yours,

/s/ Brent B. Siler

cc: Rachel K. King, GlycoMimetics, Inc.
Brian Hahn, GlycoMimetics, Inc.
Brian F. Leaf, Cooley LLP
Divakar Gupta, Latham & Watkins LLP

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