



DIVISION OF
CORPORATION FINANCE

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

October 17, 2013

Via E-mail

Ms. Rachel King
Chief Executive Officer
GlycoMimetics, Inc.
401 Professional Drive, Suite 250
Gaithersburg, MD 20879

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

Dear Ms. King:

We have reviewed your registration statement and have the following comment.

Please respond to this letter by amending your registration statement and providing the requested information. If you do not believe our comment applies to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your registration statement and the information you provide in response to this comment, we may have additional comments.

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 each 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 disclose. 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.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Act of 1933 and all applicable Securities Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement please provide a written statement from the company acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

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You may contact Scott Wuenschell at (202) 551-3467 or Mark Brunhofer at (202) 551-3638 if you have questions regarding comments on the financial statements and related matters. Please contact Matthew Jones at (202) 551-3786, Dan Greenspan at (202) 551-3623, or me at (202) 551-3715 with any other questions.

Sincerely,

/s/ Daniel Greenspan for

Jeffrey P. Riedler
Assistant Director

cc: Brent Siler
Cooley LLP
11951 Freedom Drive
Reston, VA 20190