



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

DIVISION OF
CORPORATION FINANCE

Mail Stop 4546

May 2, 2016

Via E-mail

Mina Sooch
Chief Executive Officer
Gemphire Therapeutics Inc.
43334 Seven Mile Road, Suite 1000
Northville, Michigan 48167

**Re: Gemphire Therapeutics Inc.
Registration Statement on Form S-1
Response dated April 22, 2016
File No. 333-210815**

Dear Ms. Sooch:

We have reviewed your registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by amending your registration statement and providing the requested information. If you do not believe our comments apply 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 these comments, we may have additional comments.

Critical Accounting Policies and Estimates

Stock-Based Compensation

Common Stock Valuation, page 78

1. We noted the use of the potential Series B convertible preferred stock financing (potential Series B financing) in your September 18 and 30, 2015 valuations. Please provide us additional information with regards to the potential Series B financing so we may better understand your valuations. In this regard, tell us:

- why it is appropriate to include the potential Series B financing in both of your September 2015 valuations;
- when the discussions began for this financing round, when you expect to complete the financing, and any difficulties you are facing in completing the financing;
- with whom are you discussing the potential financing with (i.e. new investors, prior investors, related parties);
- the economic rights you are anticipating granting to the Series B preferred stock holders in relation to the rights of other equity holders; and
- your intention with respect to providing disclosure regarding the potential Series B financing in your registration statement.

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 Sasha Parikh, Staff Accountant, at (202) 551-3627 or Sharon Blume, Accounting Branch Chief, at (202) 551-3474 if you have questions regarding comments on the financial statements and related matters. Please contact Alexandra M. Ledbetter, Staff Attorney, at (202) 551-3317 or Lilyanna Peyser, Special Counsel, at (202) 551-3222 with any other questions.

Sincerely,

/s/ Lilyanna Peyser for

Suzanne Hayes
Assistant Director
Office of Healthcare and Insurance

cc: Phillip D. Torrence, Esq.
Honigman Miller Schwartz and Cohn LLP