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

DIVISION OF
CORPORATION FINANCE

Mail Stop 4546

October 7, 2015

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

Re: Gemphire Therapeutics Inc.
Draft Registration Statement on Form S-1
Submitted September 11, 2015
CIK No. 0001638287

Dear Ms. Sooch:

We have reviewed your draft 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 providing the requested information and either submitting an amended draft registration statement or publicly filing your registration statement on EDGAR. 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 the information you provide in response to these comments and your amended draft registration statement or filed registration statement, we may have additional comments.

General

1. Please supplementally provide us with copies of all written communications, as defined in Securities Act Rule 405, that you, or anyone authorized to do so on your behalf, present to potential investors in reliance on Securities Act Section 5(d), whether or not they retain copies of the communications.

2. We note that you have requested confidential treatment for one of your exhibits. We intend to send comments on your confidential treatment request under separate cover.

3. Please include disclosure regarding the directed share program in your "Risk Factors," "Certain Relationships and Related Party Transactions" and "Plan of Distribution" sections, or tell us why such disclosure is not required. See Items 503, 404 and 508 of Regulation S-K.

Risk Factors, page 11

Provisions in our corporate charter documents…, page 46

4. Where you state that provisions in your corporate charter and bylaws will limit who may call stockholder meetings, please revise to clarify, if true, that stockholders will be prohibited from calling special meetings.

Our executive officers, directors, principal stockholders…, page 48

5. Please advise as to whether you anticipate being a "controlled company," as defined by NASDAQ, upon completion of this offering. If so, please include an appropriate risk factor.

Use of Proceeds, page 56

6. We note that management "will have broad discretion in the application of the net proceeds." Please revise your disclosure to comply with Instruction 7 to Item 504 of Regulation S-K, or delete the reservation regarding the use of proceeds from this section and from the risk factor on page 48.

Management's Discussion and Analysis of Financial Condition and Results of Operations, page 65

Liquidity and Capital Resources, page 70

7. Please revise to disclose the amount of capital you will need to sustain operations through December 31, 2015, as well as the amount of capital you will need to sustain operations through the next 18 months, including your EOP2 meeting with the FDA and the commencement of your Phase 3 registration trials.

8. We note your disclosure regarding the July 2015 convertible note financing. Assuming you do not complete a stock financing resulting in at least $5.0 million of new invested capital prior to the completion of this public offering, please disclose whether you intend to use any portion of the proceeds from this offering to repay the holders of the convertible notes.

Critical Accounting Policies and Estimates, page 74

Common Stock Valuation, page 76

9. We may have additional comments on your accounting for equity issuances including stock compensation and beneficial conversion features. Once you have an estimated offering price, please provide us an analysis explaining the reasons for the differences between recent valuations of your common stock leading up to the IPO and the estimated offering price.

Business, page 80

Overview, page 80

10. Please provide support substantiating your claims on page 82 that Drs. John Kastelein, Evan Stein, Robert Hegele and Dirk Blom are "key opinion leaders" and "are recognized worldwide experts in the drug development of lipid-lowering therapies," and that your management team, including Ms. Mina, has a "successful track record of discovering, developing and commercializing treatments in the cardiovascular and orphan markets." Also clarify whether Ms. Mina or any members of the management team actually discovered the treatments referenced or assisted in some other capacity.

Our Strategy, page 82

11. Refer to the following sentence on page 83: "As a result, we believe that we have identified indications for gemcabene with favorable regulatory pathways and the highest likelihood of commercial success." Please revise to clarify, if accurate, that you are referring to the likelihood of commercial success of your target indications as compared to other potential indications for gemcabene that you considered.

Our Target Indications, page 85

12. In the diagram on page 86, please clarify the meaning of the dotted line.

Gemcabene Clinical Development Plan, page 100

13. On page 101, please briefly explain what a peroxisome proliferation-activated receptor agonist is.

Undertakings, page II-6

14. As this is your initial distribution of securities, please include the undertaking set forth in

Item 512(a)(6) of Regulation S-K.

Exhibits

15. Please file as an exhibit to your registration statement the documentation relating to the July 2015 convertible note financing. See Item 601(b)(4) of Regulation S-K.

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