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

DIVISION OF
CORPORATION FINANCE

Mail Stop 4546

March 15, 2017

Vlad Coric, M.D.
Chief Executive Officer
Biohaven Pharmaceutical Holding Company Ltd.
234 Church Street
New Haven, Connecticut

Re: Biohaven Pharmaceutical Holding Company Ltd.
Draft Registration Statement on Form S-1
Submitted February 14, 2017
CIK No. 0001689813

Dear Dr. Coric:

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.

Prospectus Summary, page 1
Product Candidates, page 2

1. We refer to your disclosures in the table on page 2 indicating, for instance, that your BHV-3500 is in the midst of a Phase 1 trial for the prevention of chronic migraine, that BHV-0223 is at the end of Phase 2 for the treatment of ALS, and that BHV-5000 is at the end of Phase 1 trials for two indications where Phase 1 trials have not yet commenced. Please revise the graphic on page 2 to show that you have completed preclinical studies for BHV-3500, that you have completed Phase 1 trials for BHV-0223 for the treatment of ALS, and that you have not yet commenced Phase 1 trials for BHV-5000. Please make similar changes to reflect the completed status of the product candidates' trials here and in the graphic on page 109.

Our CGRP Receptor Antagonist Platform, page 2

2. We note disclosure that rimegepant was observed to have "comprehensive efficacy on all four key migraine symptoms" and similar statements regarding safety and efficacy in the Summary and Business sections regarding your product candidates. Statements regarding efficacy and safety are determinations that only the FDA and foreign government equivalent regulations have the authority to make. Please revise your disclosure to eliminate any suggestion that your candidates have been or will ultimately be determined to be effective or to have demonstrated efficacy for purposes of granting marketing approval by the FDA or comparable agency.

3. Please briefly describe any serious adverse events observed during the clinical trials of rimegepant. Please provide similar disclosure regarding your clinical trial disclosure for trigriluzole, BHV-0223 and BHV-5000 on pages 3-5. Please provide corresponding disclosure throughout the prospectus, where appropriate, including on page 115.

Our Glutamate Modulation Platform, page 3

4. We note your disclosure that you began a Phase 2/3 clinical trial of trigriluzole in December 2016 and that you plan to commence a Phase 2/3 clinical trial of BHV-5000 in 2018. Please disclose the requirements for a clinical trial to be considered a Phase 2/3 and tell us whether the FDA has given you any assurance or guidance as to whether you can file an NDA if the endpoints of these trials are met.

Implications of Being an Emerging Growth Company, page 8

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

Use of Proceeds, page 75

6. With respect to each of the indicated uses, please clarify whether you expect the allocated proceeds will be sufficient to complete the indicated trial, study or activity. Please also disclose the sources of other funds needed to reach regulatory approval and commercialization for each product candidate. Refer to Instruction 3 to Item 504 of Regulation S-K.

7. With respect to the proceeds that will be used to repay indebtedness and notes payable to related parties, please provide disclosure required by Instruction 4 to Item 504 of Regulation S-K. Please also identify the related parties you will repay or who are guarantors of the debt that is being repaid with the offering proceeds.

Management's Discussion and Analysis of Financial Condition and Results of Operations
Critical Accounting Policies and Estimates
Fair Value of Stock-Based Compensation, page 100

8. Once you have an estimated offering price or range, please explain to us the reasons for any differences between the recent valuations of your common stock leading up to the IPO and the estimated offering price. This information will help facilitate our review of your accounting for equity issuances including stock compensation and beneficial conversion features.

Business
The Potential Benefits of Rimegepant Compared to Other Treatments, page 114

9. Please disclose your basis for choosing the comparator migraine treatments used in the table. Additionally, given the subjectivity associated with the "Cost of Goods" factor, please revise the table to add approximate dollar figures for each treatment assessed.

License Agreements, page 146

10. Where you disclose that an agreement will terminate upon the last-to-expire patent or the expiration of the royalty term of the agreement, please revise to clarify when these terms are expected to expire.

General

11. Please provide us proofs of all graphics, visual, or photographic information you will provide in the printed prospectus prior to its use, for example in a preliminary prospectus. Please note that we may have comments regarding this material.

You may contact James Peklenk at (202) 551-3661 or Jim B. Rosenberg at (202) 551-3679 if you have questions regarding comments on the financial statements and related matters. Please contact Josh Samples at (202) 551-3199 or Mary Beth Breslin at (202) 551-3625 with any other questions.

Sincerely,

/s/ Mary Beth Breslin for

Suzanne Hayes
Assistant Director
Office of Healthcare and Insurance

cc: Darren K. DeStefano
Cooley LLP