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

DIVISION OF
CORPORATION FINANCE

May 27, 2018

Jigar Raythatha
President and Chief Executive Officer
Constellation Pharmaceuticals, Inc.
215 First Street, Suite 200
Cambridge, Massachusetts 02142

Re: Constellation Pharmaceuticals, Inc.
Draft Registration Statement on Form S-1
Submitted April 27, 2018
CIK No. 0001434418

Dear Mr. Raythatha:

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.

Draft Registration Statement on Form S-1

Prospectus summary
Our lead product candidates, page 2

1. Please limit the summary discussion of your results to a description of the primary endpoints and, for completed trials, whether they were met. Please also disclose any serious adverse events that occurred for any of your trials.

Risks associated with our business, page 5

2. Please expand the penultimate bullet on page 6 to disclose that you do not own or in-license any patents or other intellectual property related to your epigenetics platform.

Implications of being an emerging growth company, page 6

3. 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 62

4. Please revise your disclosure to indicate how far the proceeds of the offering will allow you to proceed with the development of CPI-1205 and CPI-0610 for the treatment of the stated indications.

Management's Discussion and Analysis of Financial Condition and Results of Operations
Critical Accounting Policies and Significant Judgments and Estimates
Stock Based Compensation
Determination of Fair Value of Common Stock, page 83

5. On page 160 you indicate that your Series E-1 preferred stock was issued for $1.75 per share in September 2016 and July 2017 while on page 161 your Series F preferred stock was issued for $1.00 per share in March and April 2018. Please address the following:
   - Tell us why the share price for your Series F preferred stock dropped from that of your Series E-1 preferred stock.
   - Tell us whether there are differing rights and preferences between both classes of securities.
   - Tell us how the issuance price for the Series F preferred stock was determined.
   - As it appears from your disclosure on page 161 that a substantial amount of the Series F preferred stock financing was raised from existing shareholders, tell us the roll of the identified new investor (Cormorant Asset Management) and any other new investors in negotiating the Series F preferred stock issuance price.

6. Once you have an estimated offering price or range, please explain to us how you determined the fair value of the common stock underlying your equity issuances and 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

Our product candidates, page 93

7. You state on pages 96 and 97 that you are exploring the use of co-medication in your ProSTAR and ORIOn-E trials. Please expand your disclosure to explain what this means and whether you are exploring the use of one or multiple types of co-medication.

8. Please expand your disclosure of your Phase 1 trials to disclose the primary and secondary endpoints in terms of their objective data points and whether they were met.

9. Please expand your description of your ProSTAR trial on page 96 to describe in terms of objective data points the safety endpoint in the Phase 1b portion, and the objective response primary endpoint in the planned Phase 2 portion. Please also discuss the objective data points you are using to evaluate safety in the Phase 1b ORIOn-E trial and the CPI-0610 trial.

10. We note your statement that you observed that EZH2 inhibition is effective as a monotherapy at the bottom of page 98. As your product candidate has not received approval from the FDA, it is premature and inappropriate to state conclusions regarding its efficacy. Please revise your disclosure to remove this statement.

11. Please expand your disclosure of your preclinical studies for CPI-1205 and tell us whether the results shown represent results that were achieved consistently in the preclinical studies, and also explain whether such studies were powered for statistical significance.

Intellectual property, page 105

12. Please expand this section to disclose the terms of the in-licenses you obtained from several academic organizations, for which you may be obligated to make milestone payments of up to $15.7 million, as mentioned on page F-33. Alternatively, provide us an analysis as to why such disclosure is not required.

13. Please revise your disclosure to clarify whether the foreign patents included in your intellectual property portfolios for CPI-1205 and CPI-0610 include the jurisdictions listed in the first full paragraph on page 106.

License and collaboration agreements, page 108

14. Please revise your disclosure to state the aggregate amount of milestones that may be payable to you under the Genentech collaboration agreement, and the royalty range within a 10% range. Please also disclose the term of the payment obligations for both the collaboration agreement and the LLS agreement.

Notes to financial statements
Note 3: Fair value measurements, page F-18

15. Please tell us why your liability for the Series E-1 preferred stock tranche right obligation was marked to a fair value of zero with a $4.443 million credit to your statement of operations when you issued and sold 13.8 million shares under this right in July 2017. Explain to us either:
    - why the fair value was zero at issuance of the shares underlying the right and, if so, why the right holders acquired the 13.8 million shares under the tranche right if it had no value; or
    - why the fair value of the tranche right immediately before issuance of the 13.8 million shares was not included as part of the consideration for the share issuance.

    Reference for us the authoritative literature you relied upon to support your accounting.

General

16. 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 Christine Torney at 202-551-3652 or Mark Brunhofer at 202-551-3638 if you have questions regarding comments on the financial statements and related matters. Please contact Dorrie Yale at 202-551-8776 or Mary Beth Breslin at 202-551-3625 with any other questions.

Division of Corporation Finance
Office of Healthcare & Insurance

cc: Lia Der Marderosian