

May 11, 2020

Ms. Sasha Parikh
Ms. Vanessa Robertson
Ms. Irene Paik
Mr. Jeffrey Gabor
Division of Corporation Finance
Office of Life Sciences
Securities and Exchange Commission
100 F Street, NE
Washington, D.C. 20549

Re: Lantern Pharma Inc.
Registration Statement on Form S-1
Filed April 16, 2020
File No. 333-237714

Ladies and Gentleman:

On behalf of our client, Lantern Pharma Inc. (the "Company"), we are submitting this letter in response to comments received from the staff (the "Staff") of Securities and Exchange Commission's ("SEC's") by letter dated April 30, 2020, (the "Comment Letter") with respect to the Company's Registration Statement on Form S-1 filed with the Commission on April 16, 2020 (the "Registration Statement").

In response to the Comment Letter, the Company is filing its pre-effective amendment to the Registration Statement via EDGAR (the "Amended Registration Statement") with this response letter.

For the Staff's convenience, the numbering of the paragraphs below corresponds to the numbering of the comments in the Comment Letter, the text of which we have restated in italicized type, followed by the Company's response. Page references in the responses correspond to the page numbers in the prospectus in the Amended Registration Statement.

Form S-1 filed April 16, 2020

Prospectus Summary, page 1

1. *We note your revisions in response to our prior comment 3 and your disclosure on page 5 that you have selected NSCLC in non-smoking females as your lead proposed indication. To the extent you continue to include a pipeline table in the gatefold, please specify that you are studying LP-300 in females under "Our Portfolio" at the bottom of your graphic. Please also revise the pipeline tables on pages 2 and 3 to clarify that you have not initiated clinical trials for LP-300 and that you have selected NSCLC in non-smoking females as your lead indication. With respect to your pipeline table on page 2, please also revise to indicate that you have out-licensed LP-100 to Oncology Venture and, if appropriate, consolidate the two arrows depicting LP-184 to be consistent with the other pipeline tables in your prospectus.*

The Company has revised its graphic image on the inside cover page by adding "female non-smokers" to the description of the Indication for LP-300 in "Our Portfolio." The Company has also added an explanatory note to the bottom of the pipeline tables on pages 2 and 3 of the prospectus that reads: *Explanatory Note: We have out-licensed LP-100 to Oncology Venture. As of the date of this prospectus, we have not yet initiated clinical trials on LP-300. We intend to initiate a clinical trial on LP-300 with NSCLC in non-smoking females as our lead indication.*

Market and Industry Data, page 60

2. *We note your revised disclosures in response to prior comment 7, but you continue to caution investors not to place undue weight to industry data, projections and estimates. Please revise this statement to eliminate any implication that investors are not entitled to rely on the information included in your registration statement.*

The Company has revised the risk factor on page 44 and the Market and Industry Data disclosures on page 60 of the prospectus to delete the sentence: "You are cautioned not to give undue weight to any such information, projections and estimates."

Capitalization, page 61

3. *Please revise to remove cash from your Total Capitalization amount as cash is not a component of Capitalization.*

The Company has clarified in the introduction to the capitalization table on page 61 of the prospectus that cash is stated separately from the Company's total capitalization.

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Dilution, page 62

4. *We note that your net tangible book value as of December 31, 2019 includes deferred offering costs. Please revise to calculate net tangible book value excluding any intangible assets such as deferred offering costs. In addition, it appears that the net tangible book value per share is based on 2,538,583 shares of common stock outstanding as of December 31, 2019, after giving effect to the conversion of all outstanding shares of Series A preferred stock into 1,401,647 shares of common stock. Please explain why net tangible book value per share was not calculated based on the 1,136,938 shares outstanding reflected in the balance sheet.*

The Company has added disclosure to Dilution at page 62-63 of the prospectus that also discloses the net tangible book value per share of common prior to conversion of the Series A Preferred using 1,136,938 share issued and outstanding as of March 31, 2020, and has excluded deferred offering costs form the calculation.

Management's Discussion and Analysis of Financial Condition and Results of Operations
Components of Our Results of Operations
Research and Development Expense, page 66

5. *As your research and development expense increased significantly (37%) from December 31, 2018 to December 31, 2019, we believe additional information related to the increase would be beneficial to an investor and we reissue our comment in part. You state in the response that you do not track your research and development costs by project. Please disclose that fact and include an explanation for why you do not maintain and evaluate research and development costs by project. Expand your disclosure on page 67 to break out the amount of the increase in research and development by the type of expense similar to the disclosure you included for the change in general and administrative expense.*

The Company has added additional disclosure to its MD&A at page 67 of the prospectus to break out the amount of increase in research and development by type of expense similar to the disclosure provided for general and administrative expenses. A further explanation on the reasons why the Company was tracking research and development costs by project has also been provided.

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Business

Oncology Venture, page 116

We note that Oncology Venture has agreed to directly pay AF Chemicals, which amounts will then be deducted from payments to be made to you. Please revise your discussion regarding the Oncology Venture agreement to disclose the net payments that Oncology Venture will make to you. For example, disclose the portion of the \$21 million maximum aggregate amount of development milestone payments that you will receive from Oncology Venture.

The Company has disclosed the amounts Oncology Venture will pay to AF Chemicals directly and the net amount to be paid to the Company on page 116 of the prospectus.

General

7. *We note your revisions in response to our prior comments 1 to 3. On further review, it appears that the inside cover page of the prospectus includes extensive narrative text that repeats information already contained in the summary and business sections. Text in this context should only be used to the extent necessary to explain the visuals in the artwork. Please remove or substantially revise the inside cover page of the prospectus. For guidance, refer to Question 101.02 of the Securities Act Forms Compliance and Disclosure Interpretations.*

The Company has substantially revised its graphic image on the inside cover page of the prospectus to remove extensive narrative text retaining only the text that the Company believes necessary to explain the visual images consistent with the guidance provided at Question 101.02 of the Securities Act Forms Compliance and Disclosure Interpretations.

Please contact me at (213) 358-6174 or my partner Daniel B. Eng at (415) 262-8508 with any questions or further comments regarding the Company's responses to the Staff's comments.

Very truly yours,

LEWIS BRISBOIS BISGAARD & SMITH LLP

/s/ Scott E. Bartel

Partner