



DIVISION OF  
CORPORATION FINANCE

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

May 11, 2021

Markus Renschler, M.D.  
President and Chief Executive Officer  
Cyteir Therapeutics, Inc.  
128 Spring St, Building A, Suite 510  
Lexington, MA 02421

**Re: Cyteir Therapeutics, Inc.**  
**Amendment No. 1 to Draft Registration Statement on Form S-1**  
**Submitted April 30, 2021**  
**CIK No. 0001662244**

Dear Dr. Renschler:

We have reviewed your amended 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. Unless we note otherwise, our references to prior comments are to comments in our April 22, 2021 letter.

Draft Registration Statement on Form S-1 Submitted April 30, 2021

Prospectus Summary

Our Programs, page 4

1. We note your response to comment 6. To the extent the referenced studies were not powered to show statistical significance, please disclose the implications of conducting testing and presenting efficacy results where the study was not designed to be powered for significance.

Markus Renschler, M.D.  
Cyteir Therapeutics, Inc.  
May 11, 2021  
Page 2

Management's discussion and analysis of financial condition and results of operations

Critical accounting policies and estimates

Stock-Based compensation, page 78

2. We note the disclosures you provided in response to comment 9. Please further expand this disclosure to state the market approaches used to estimate the enterprise value along with the nature of the material assumptions used within those methodologies. If more than one methodology is used, provide a discussion of the weighting of those methodologies.

Business

Intellectual Property, page 111

3. We note your revised disclosure in response to comment 10. Please revise to disclose for each material patent and patent application the type of patent protection granted or being requested (composition of matter, use, or process).

Principal stockholders, page 157

4. We note your response to comment 11. Please disclose in footnote 7, if true, that the investment and voting decisions for each of the Venrock Funds are made jointly by three or more individuals associated with those funds.

You may contact Tracey Houser at 202-551-3736 or Mary Mast at 202-551-3613 if you have questions regarding comments on the financial statements and related matters. Please contact Kasey Robinson at 202-551-5880 or Tim Buchmiller at 202-551-3635 with any other questions.

Sincerely,

Division of Corporation Finance  
Office of Life Sciences

cc: Marc Rubenstein, Esq.