

**VIA EDGAR AND FEDERAL EXPRESS**

United States Securities and Exchange Commission  
Division of Corporation Finance  
Mail Stop 4561  
100 F Street, N.E.  
Washington, D.C. 20549  
Attention: Chris Edwards and Liz Walsh

**Re: Bicycle Therapeutics Ltd.  
Amendment No. 1 to Draft Registration Statement on Form S-1  
Submitted March 22, 2019  
CIK 0001761612**

Dear Mr. Edwards and Ms. Walsh:

This letter is confidentially submitted on behalf of Bicycle Therapeutics Ltd (the “**Company**”) in response to the comments of the staff of the Division of Corporation Finance (the “**Staff**”) of the U.S. Securities and Exchange Commission (the “**Commission**”) with respect to Amendment No. 1 to the Company’s Draft Registration Statement on Form S-1, confidentially submitted on March 22, 2019 (“**Amendment No. 1**”), as set forth in the Staff’s letter dated April 4, 2019 addressed to Lee Kalowski, Chief Financial Officer of the Company (the “**Comment Letter**”). The Company is concurrently publicly filing its Registration Statement on Form S-1 (the “**Registration Statement**”), which includes changes to reflect responses to the Staff’s comments.

For reference purposes, the text of the Comment Letter has been reproduced herein with responses below each numbered comment. For your convenience, we have italicized the reproduced Staff comments from the Comment Letter. Unless otherwise indicated, page references in the descriptions of the Staff’s comments refer to Amendment No. 1, and page references in the responses refer to the Registration Statement. All capitalized terms used and not otherwise defined herein shall have the meanings set forth in the Registration Statement.

The responses provided herein are based upon information provided to Goodwin Procter LLP by the Company. In addition to submitting this letter via EDGAR, we are sending via Federal Express four (4) copies of each of this letter and the Registration Statement (marked to show changes from Amendment No. 1).

Amendment No. 1 to Draft Registration Statement on Form S-1 submitted March 22, 2019

Prospectus Summary  
Beyond Oncology, page 5

1. *We note your response to prior comment 4. Please also revise your prospectus summary to describe the ongoing Phase I clinical trial of THR-149.*
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**RESPONSE:** The Company respectfully advises the Staff that it has revised the disclosure on page 6 of the Registration Statement in response to the Staff's comment.

Business

Our Collaborations

Our Other Collaborators

AstraZeneca, page 144

2. *We note your statement that, pursuant to your collaboration agreement with AstraZeneca, you could receive more than \$1 billion in milestone payments and royalties. We also note your disclosure that, pursuant to the collaboration agreement, AstraZeneca owes you milestone fee of \$8 million for the first drug candidate selected from each research program, and you are eligible to receive up to an additional \$162 million in development, regulatory and commercial milestones on a research program by research program basis, as well as tiered royalty payments of mid-single digits based on a percentage of net sales. Please provide further details regarding how these amounts could total over \$1 billion.*

**RESPONSE:** The Company respectfully advises the Staff that it has revised the disclosure on pages 142 and 143 of the Registration Statement in response to the Staff's comment.

Management

Executive Officers, page 168

3. *We note your updated disclosure regarding your Chief Business Officer, Peter Leone. Please clarify Mr. Leone's activities between April 2016 and 2012. Please see Item 401(e)(1) of Regulation S-K.*

**RESPONSE:** The Company respectfully advises the Staff that it has revised the disclosure on page 167 of the Registration Statement in response to the Staff's comment.

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If you should have any questions concerning the enclosed matters, please contact the undersigned at (617) 570-1483.

Sincerely,

/s/ James Xu  
James Xu, Esq.

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cc: Kevin Lee, *Bicycle Therapeutics Limited*  
Lee Kalowski, *Bicycle Therapeutics Limited*  
Kristopher D. Brown, *Goodwin Procter LLP*  
Jonathan A. Schur, *Goodwin Procter LLP*  
Divakar Gupta, *Cooley LLP*  
Ryan Sansom, *Cooley LLP*  
Richard Segal, *Cooley LLP*

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