BoXcel Therapeutics, Inc.
780 East Main Street
Branford, CT 06405

February 12, 2018

Suzanne Hayes
Assistant Director
Office of Healthcare and Insurance
Division of Corporation Finance
Securities and Exchange Commission
100 F. Street, NE
Washington, DC 20549

Re: BioXcel Therapeutics, Inc.
Amendment No. 2 to Draft Registration Statement on Form S-1
Filed January 26, 2018
CIK No. 0001720893

Dear Ms. Hayes:

This letter sets forth the responses of BioXcel Therapeutics, Inc., a Delaware corporation (the "**Company**" or "**we**"), to the comments received from the Staff of the Division of Corporation Finance (the "**Staff**") of the Securities and Exchange Commission (the "**Commission**") by letter dated February 4, 2018 ("**Comment Letter**") concerning the Company's registration statement on Form S-1. In conjunction with this letter, the Company is submitting an amended draft registration statement on Form S-1 (the "**Registration Statement**") to the Commission. For convenient reference, we have set forth below in bold each of the Staff's comments set forth in the Comment Letter and have set forth our responses to the numbering of the comments and the headings used in the Comment Letter.

Amendment No. 1 to Draft Registration Statement on Form S-1
Business, page 84

1. We note your response to our prior comment 1. Please revise the reference on page 93 to Dex having an acceptable safety profile and the reference on page 118 to BXCL702 having an observed safety profile suitable for the treatment of elderly patients.

Response

The Company acknowledges the Staff's comment and advises the Staff that it has revised page 93 and page 118 of the Registration Statement in accordance with the Staff's comment.

Summary of Existing BXCL701 Clinical Data (Previously Studied as Talabostat), page 108

2. **We note your disclosure in Figure 13b that the PTH-304, PTH-305 and PTH-320 trials were halted and that the whole clinical program was placed on hold. Please disclose in this section why this occurred.**

Response

The Company acknowledges the Staff's comment and advises the Staff that page 111 of the Registration Statement previously included a discussion of why the clinical program was placed on a clinical hold which has been further expanded.

3. **We note your disclosure regarding the adverse events observed in these trials. Please revise to disclose all of the serious adverse events patients experienced during these trials and the number of patients who experienced them.**

Response

The Company acknowledges the Staff's comment and advises the Staff that it has revised page 110 of the Registration Statements in accordance with the Staff's comment.

4. **We note your disclosure that the Medical Dictionary for Regulatory Activities was used throughout the trials to code reported adverse event terms and that the terms in some cases were more narrowly defined than others. Please provide an example of this.**

Response

The Company acknowledges the Staff's comment and advises the Staff that it has revised page 110 of the Registration Statement in accordance with the Staff's comment.

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If you have any further comments and/or questions, please contact the undersigned at (203) 643-8060 or Stephen A. Cohen, Esq. at Sheppard, Mullin, Richter & Hampton LLP at (212) 653-8166.

Very truly yours,

/s/ Vimal Mehta
Vimal Mehta
Chief Executive Officer

cc: Jeffrey J. Fessler, Sheppard, Mullin, Richter & Hampton LLP
Stephen A. Cohen, Sheppard, Mullin, Richter & Hampton LLP