

October 28, 2016

AND EDGAR

Ruairi Regan, Esq.
Pamela Howell, Esq.
U.S. Securities and Exchange Commission
Division of Corporation Finance
Mail Stop 3561
100 F Street, NE
Washington, DC 20549

**Re: Enzo Biochem, Inc.
Registration Statement on Form S-3
Filed September 1, 2016
File No. 333-213440**

Dear Mr. Regan and Ms. Howell:

On behalf of Enzo Biochem, Inc., a New York corporation (the “**Company**”), we are writing to submit the Company’s responses to a comment of the staff (the “**Staff**”) of the Division of Corporation Finance of the Securities and Exchange Commission (the “**Commission**”) dated October 12, 2016, relating to the Company’s Registration Statement on Form S-3 (File No. 333-213440) (the “**Registration Statement**”) filed with the Commission on September 1, 2016.

For ease of review, we have summarized the Staff’s comment in bold and provided the Company’s response immediately thereafter. Capitalized terms used herein but not defined herein have the meanings given to such terms in the Registration Statement.

Plan of Distribution, page S-10

We reissue prior comment 1 in part. Your disclosure of the plan of distribution of the securities covered by this prospectus states that you may sell your common stock “in negotiated transactions at market prices prevailing at the time of sale or at prices related to such prevailing market prices, and/or any other method permitted by law.” Please tell us

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whether sales made in such “negotiated transactions” satisfy the “at the market offering” definition under Rule 415.

Response: The Company acknowledges the Staff’s comment. We have revised our disclosure on the cover page and page S-10 of the prospectus supplement contained in Amendment No. 1 to provide that sales may be made only in an “at the market offering” as defined in Rule 415(a)(4) of the Securities Act of 1933, as amended (the “**Securities Act**”). We hereby confirm that if any sales method does not constitute a sales method that is deemed to be an “at the market offering” as defined in Rule 415(a)(4) of the Securities Act, or if any material information with respect to a particular offering has been omitted, we will file an additional prospectus supplement at the time of such sales.

Please contact me at 212-547-5885 if you have any questions or require any additional information in connection with this letter or the Company’s filing of the Registration Statement.

Sincerely,

/s/ Robert H. Cohen

Robert H. Cohen

cc: Barry W. Weiner, Chief Financial Officer, Enzo Biochem, Inc.
