



DIVISION OF  
CORPORATION FINANCE

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

November 10, 2010

Dr. Elazar Rabbani  
Chief Executive Officer  
Enzo Biochem, Inc.  
527 Madison Avenue  
New York, New York 10022

**Re: Enzo Biochem, Inc.  
Preliminary Proxy Statement on Schedule 14A  
Filed November 5, 2010  
File No. 001-09974**

Dear Dr. Rabbani:

We have reviewed your filing 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 amending your filing, by providing the requested information, or by advising us when you will provide the requested response. 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 any amendment to your filing and the information you provide in response to these comments, we may have additional comments.

Proposal 1: Election of Directors, page 7

1. We note the participants reserve the right to vote for unidentified substitute nominees. Please advise us, with a view toward revised disclosure, whether the participants are required to identify or nominate such substitute nominees in order to comply with any applicable company advance notice bylaw. In addition, please confirm for us that if the participants lawfully identify or nominate substitute nominees before the meeting, the participants will file an amended proxy statement that: (i) identifies the substitute nominees, (ii) discloses whether such nominees have consented to being named in the revised proxy statement and to serve if elected, and (iii) includes the disclosure required by Items 5(b) and 7 of Schedule 14A with respect to such nominees.

Method and Cost of Soliciting Proxies, page 32

2. Please confirm your understanding that all written soliciting materials, including any scripts to be used in soliciting proxies must be filed under the cover of Schedule 14A on the date of first use. See Exchange Act Rules 14a-6(b) and (c).

Appendix A

3. Please revise the references in this appendix to persons who “may be deemed” participants to state definitively that the persons identified in this section “are” participants. See Instruction 3 to Item 4 of Schedule 14A.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filings to be certain that the filing includes the information the Securities Exchange Act of 1934 and all applicable Exchange Act rules require. Since the company and its management are in possession of all facts relating to the disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In responding to our comments, please provide a written statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

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If you have questions or comments please contact me at (202) 551-3428. If you require further assistance, you may contact Perry Hindin, Special Counsel, at (202) 551-3444. You may also contact us via facsimile at (202) 772-9203. Please send all correspondence to us at the following ZIP code: 20549-3628.

Sincerely,

Evan S. Jacobson  
Attorney-Advisor  
Office of Mergers & Acquisitions

cc: Via Facsimile (212) 583-0150  
Natalie Bogdanos, Esq.  
Enzo Biochem, Inc.