

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, DC 20549**

**SCHEDULE 14A**

**Proxy Statement Pursuant to Section 14(a) of the Securities Exchange Act of 1934  
(Amendment No. \_\_)**

Filed by the Registrant

Filed by a Party other than the Registrant

Check the appropriate box:

- Preliminary Proxy Statement
- Confidential, For Use of the Commission Only (as permitted by Rule 14a-6(e)(2))
- Definitive Proxy Statement
- Definitive Additional Materials
- Soliciting Material Under Rule 14a-12

**Enzo Biochem, Inc.**

\_\_\_\_\_  
(Name of Registrant as Specified in Its Charter)

\_\_\_\_\_  
(Name of Person(s) Filing Proxy Statement, if Other Than the Registrant)

Payment of Filing Fee (Check the appropriate box):

- No fee required
- Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.

- (1) Title of each class of securities to which transaction applies: \_\_\_\_\_
- (2) Aggregate number of securities to which transaction applies: \_\_\_\_\_
- (3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (set forth the amount on which the filing fee is calculated and state how it was determined): \_\_\_\_\_
- (4) Proposed maximum aggregate value of transaction: \_\_\_\_\_
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Fee paid previously with preliminary materials.

Check box if any part of the fee is offset as provided by Exchange Act Rule 0-11(a)(2) and identify the filing for which the offsetting fee was paid previously. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing.

- (1) Amount previously paid: \_\_\_\_\_
  - (2) Form, Schedule or Registration Statement No.: \_\_\_\_\_
  - (3) Filing Party: \_\_\_\_\_
  - (4) Date Filed: \_\_\_\_\_
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The following disclosure was made by Enzo Biochem, Inc. in a Current Report on Form 8-K filed with the Securities and Exchange Commission on January 28, 2010:

As previously announced, on January 8, 2010, Mr. Shahram K. Rabbani, a current member of the Board of Directors (the "Board") of Enzo Biochem, Inc. (the "Company") and Company co-founder and, until his termination by the Company on November 25, 2009, the Secretary and Treasurer of the Company, filed with the Securities and Exchange Commission a preliminary proxy statement, whereby he announced his intention to solicit votes from the Company's shareholders to elect to the Board at the Company's 2009 Annual Meeting of Shareholders scheduled to be held on January 29, 2010 (the "Annual Meeting"), two (and possibly three) insurgent Class I director-candidates not nominated by the Board and in opposition to the Board's three Class I director-nominees -- Messrs. Irwin C. Gerson and Gregory M. Bortz and Dr. Stephen B. H. Kent. The Company was recently informed that one of Mr. Shahram K. Rabbani's two opposition candidates subsequently withdrew his candidacy for election to the Board and, accordingly, only one opposition candidate remained as of the date of this Current Report on Form 8-K.

On January 8, 2010, Mr. Shahram K. Rabbani commenced, as plaintiff, an action (the "Action") in the Supreme Court of the State of New York, County of New York, seeking a temporary restraining order and a preliminary and permanent injunction to enjoin the Company from convening the Annual Meeting on January 29, 2010. On January 11, 2010, the Company petitioned to remove the Action to the U.S. District Court for the Southern District of New York (the "Court"), which petition was granted.

A hearing on the matter was held on January 12, 2010, during which the Court refused to issue a temporary restraining order enjoining the Annual Meeting date or the Company's continued solicitation of shareholders pursuant to its definitive proxy statement dated December 23, 2009 which has been furnished to shareholders of record as of December 29, 2009 (the "Proxy Statement"), pending the determination of Mr. Shahram K. Rabbani's preliminary injunction motion.

On January 27, 2010, the Court entered an order denying Mr. Shahram K. Rabbani's motion for a preliminary injunction to enjoin the Company from convening the Annual Meeting on January 29, 2010.

Accordingly, the Annual Meeting will be convened as originally scheduled at 9:00 a.m., New York City time, on Friday, January 29, 2010, at The Yale Club, 50 Vanderbilt Avenue, New York, New York 10017, for purposes set forth in the Proxy Statement, as supplemented by the Supplement dated January 13, 2010.

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#### **Important Information and Where to Find It**

On December 23, 2009, the Company filed its definitive Proxy Statement with the Securities and Exchange Commission (the "SEC") in connection with its Annual Meeting to be held on January 29, 2010. Enzo mailed the definitive Proxy Statement, together with a **WHITE** proxy card, to all shareholders of record of Company common stock as of December 29, 2009, the record date for the Annual Meeting. On January 13, 2010, the Company filed a Supplement to the definitive Proxy Statement with the SEC in connection with the Annual Meeting and mailed the Supplement to all shareholders of record of Company common stock as of December 29, 2009. The Company also may be filing other documents with the SEC regarding the Annual Meeting. **Before making any voting decision, shareholders are urged to read the definitive Proxy Statement, as supplemented, and other relevant documents filed with the SEC carefully and in their entirety, because they contain (or will contain) important information about the matters to be considered at the Annual Meeting.** Shareholders may obtain free copies of the definitive Proxy Statement and the Supplement thereto in connection with the Annual Meeting, and any other relevant documents filed with the SEC at the Internet website maintained by the SEC at [www.sec.gov](http://www.sec.gov). In addition, the documents filed by the Company with the SEC will also be available for free at the Company's Internet website at [www.enzo.com](http://www.enzo.com), or by writing to Enzo Biochem, Inc., 527 Madison Avenue, New York, New York 10022: Attention: President. In addition, copies of the Company's proxy materials may be requested by contacting the Company's proxy solicitor, The Altman Group, Inc., toll free at (866) 521-4425 or collect at (201) 860-7300 or via e-mail at [ProxyInfo@altmangroup.com](mailto:ProxyInfo@altmangroup.com).

The Company and its directors, executive officers and certain other employees may be deemed to be participants in the Board's solicitation of proxies in connection with the Annual Meeting. Detailed information regarding the names, affiliations and interests of individuals who may be deemed to be participants in the Board's solicitation of proxies in connection with the Annual Meeting is included in the Company's definitive Proxy Statement filed with the SEC on December 23, 2009, as supplemented by the Supplement thereto filed with the SEC on January 13, 2010.

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