

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

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:

(5) Total fee paid:

- 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:



ENZO BIOCHEM, INC.
527 Madison Avenue
New York, New York 10022

2020 ANNUAL MEETING OF SHAREHOLDERS
To be held on January 4, 2021
PLEASE VOTE ENZO'S PROXY SO YOUR VOTE CAN BE COUNTED

PLEASE VOTE FOR:

1. the election of (i) Elazar Rabbani, Ph.D. and Ian Walters, M.D. to the Company's Board of Directors (the "Board") as Class III Directors, to hold office for a term of three (3) years or until their successors have been duly elected and qualified, and (ii) Mary Tagliaferri, M.D. to the Board as a Class II Director, to hold office for a term of two (2) years or until her successor has been duly elected and qualified;
2. the approval, by a nonbinding advisory vote, of the compensation of the Company's Named Executive Officers;
3. the ratification of the Company's appointment of EisnerAmper LLP to serve as the Company's independent registered public accounting firm for the Company's fiscal year ending July 31, 2021; and
4. the approval of the amendment and restatement of the Company's Amended and Restated 2011 Incentive Plan, including an increase in the number of shares of common stock authorized for grant under such plan.

WHILE WE STRONGLY ENCOURAGE YOU TO VOTE YOUR SHARES PRIOR TO THE VIRTUAL ANNUAL MEETING, SHAREHOLDERS MAY ALSO VOTE DURING THE MEETING.

Virtual-Only Meeting to be Held

As previously disclosed, as a result of the coronavirus (COVID-19) outbreak, the Annual Meeting will be a completely virtual meeting. There will be no physical meeting location. The Annual Meeting will be conducted via live webcast. Shareholders will have the same rights and opportunities to participate in the virtual Annual Meeting as they would at an in-person meeting.

Instructions for the Virtual Annual Meeting

As described in the Proxy Statement, to attend the virtual Annual Meeting, visit www.virtualshareholdermeeting.com/ENZ2020 and enter your 16-digit control number. If you were a shareholder of record of the Company's common stock at the close of business on November 23, 2020 (the "Record Date") your 16-digit control number can be found on your proxy card. If you were a beneficial owner of the Company's common stock at the close of business on the Record Date (i.e., your shares are held by your broker in "street name"), your 16-digit control number can be found on the notice and instructions received from your broker or other nominee.

Once logged in, you will be able to vote your shares by clicking the “Vote Here!” button.

Shareholders may also submit written questions via the virtual platform. Questions pertinent to meeting matters will be answered during the question and answer portion of the virtual Annual Meeting, subject to a time limit prescribed by the Rules of Conduct that will be posted to the virtual Annual Meeting platform on the day of the meeting. The Rules of Conduct will also provide additional information about the relevancy of questions to meeting matters.

The virtual Annual Meeting platform is fully supported across browsers (Internet Explorer, Firefox, Chrome, and Safari) and devices (desktops, laptops, tablets and cell phones) running the most updated version of applicable software and plugins. Participants should ensure that they have a strong WiFi connection from wherever they intend to participate in the virtual Annual Meeting.

If you encounter any difficulties accessing the virtual Annual Meeting during the check-in or meeting time, you should call the technical support number that will be posted on the virtual shareholder meeting login page.

The meeting will start at 9:00 a.m., EST on January 4, 2021. We encourage you to access the virtual Annual Meeting prior to the start time to familiarize yourself with the virtual platform and ensure you can hear the streaming audio. Online access will be available starting at 8:30 a.m., EST on January 4, 2021.

If you have any questions about the procedures for admission to the Annual Meeting, please contact Investor Relations at (212) 583-0100.

Company shareholders who have questions about matters to be voted on at the 2020 Annual Meeting or who desire additional copies of the Proxy Statement or additional proxy or voting instruction cards should contact:

Enzo Biochem, Inc.
527 Madison Avenue
New York, New York 10022
(212) 583-0100
Attn.: Investor Relations

or



Kingsdale Advisors
(888) 518-1554 (toll-free in North America)
(416) 867-2272 (outside of North America)
e-mail: contactus@kingsdaleadvisors.com

IMPORTANT NOTICE REGARDING AVAILABILITY OF PROXY MATERIALS

The Proxy Statement filed November 23, 2020, the Proxy Supplement filed December 15, 2020, the form of proxy card, our 2020 Annual Report to Shareholders and our Annual Report on Form 10-K for our fiscal year ended July 31, 2020, are available to you on our website at www.enzo.com. Shareholders may also obtain a copy of these materials by writing to Enzo Biochem, Inc., 527 Madison Avenue, New York, New York 10022, Attention: Barry W. Weiner, President. Upon payment of a reasonable fee, shareholders may also obtain a copy of the exhibits to our Annual Report on Form 10-K for our fiscal year ended July 31, 2020.
