

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 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 §240.14a-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 all boxes that apply):

- ☒ No fee required.
- ☐ Fee paid previously with preliminary materials.
- ☐ Fee computed on table in exhibit required by Item 25(b) per Exchange Act Rules 14a-6(i)(1) and 0-11.

On April 24, 2023, Enzo Biochem, Inc. issued the following press release:

Enzo Biochem, Inc. Announces Date of Special Meeting of Shareholders

FARMINGDALE, NY, April 24, 2023 (GLOBE NEWSWIRE) -- Enzo Biochem, Inc. (NYSE: ENZ) (“Enzo Biochem” or the “Company”), a leading biosciences and diagnostics company, today announced that its special meeting of shareholders (the “Special Meeting”) to consider and vote on a proposal to approve the sale (the “Asset Sale”) of substantially all the assets and assignment of certain liabilities of its clinical laboratory business to Laboratory Corporation of America Holdings, a Delaware corporation (“Labcorp”) and adopt the Asset Purchase Agreement, dated as of March 16, 2023 (as such agreement may be amended from time to time, the “Asset Purchase Agreement”), by and among the Company, Enzo Clinical Labs, Inc., a New York corporation and Labcorp will be held on May 22, 2023 at 9:00 a.m. Eastern Time.

Shareholders are encouraged to vote as soon as possible by proxy in advance of the Special Meeting by one of the methods described in the Proxy Statement distributed to shareholders on April 24, 2023.

About Enzo Biochem

Enzo Biochem is a pioneer in molecular diagnostics, leading the convergence of clinical laboratories, life sciences and intellectual property through the development of unique diagnostic platform technologies that provide numerous advantages over previous standards. A global company, Enzo Biochem utilizes cross-functional teams to develop and deploy products, systems and services that meet the ever-changing and rapidly growing needs of health care today and into the future. Underpinning Enzo Biochem’s products and technologies is a broad and deep intellectual property portfolio, with patent coverage across a number of key enabling technologies. For more information, please visit Enzo.com or follow Enzo Biochem on Twitter and LinkedIn.

Forward-Looking Statements

Except for historical information, the matters discussed in this release may be considered “forward-looking” statements within the meaning of Section 27A of the Securities Act of 1933, as amended and Section 21E of the Securities Exchange Act of 1934, as amended. Such statements include declarations regarding the intent, belief or current expectations of the Company and its management, including those related to cash flow, gross margins, revenues, and expenses which are dependent on a number of factors outside of the control of the Company including, inter alia, the markets for the Company’s products and services, costs of goods and services, other expenses, government regulations, litigation, and general business conditions. See Risk Factors in the Company’s Form 10-K for the fiscal year ended July 31, 2022. Investors are cautioned that any such forward-looking statements are not guarantees of future performance and involve a number of risks and uncertainties that could materially affect actual results. The Company disclaims any obligations to update any forward-looking statement as a result of developments occurring after the date of this release.

Additional Information and Where to Find It

Enzo Biochem is holding the Special Meeting to approve the Asset Sale and adopt the Asset Purchase Agreement. In connection with seeking shareholder approval, Enzo

Biochem has filed with the Securities and Exchange Commission (“SEC”) a proxy statement and other documents describing the proposed transaction. Shareholders are urged to read the proxy statement because it contains important information about the transaction. A definitive proxy statement will be sent to the shareholders of Enzo Biochem seeking their approval of the asset sale. Shareholders may obtain a free copy of the proxy statement and other documents filed by Enzo Biochem with the SEC at the SEC’s Web site at www.sec.gov, or by directing a request to Enzo Biochem, Inc., 81 Executive Blvd. Suite 3, Farmingdale, New York 11735, Attn.: Investor Relations.

Participants in Solicitation

Enzo Biochem and its directors and executive officers may be deemed to be participants in the solicitation of proxies from the shareholders of Enzo Biochem in connection with the transactions. Information about the directors and executive officers of Enzo Biochem is set forth in Enzo Biochem’s Form 10-K for the fiscal year ended July 31, 2022 filed with the SEC on October 14, 2022, as amended by Amendment No. 1 on Form 10-K/A filed with the SEC on November 25, 2022, and the proxy statement filed with the SEC on December 21, 2022. Additional information regarding the interests of these participants and other persons who may be deemed participants in the transactions may be obtained by reading the proxy statement filed on April 24, 2023 regarding the proposed transactions.

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