

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

**FORM S-8
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

ENZO BIOCHEM, INC.

(Exact name of Registrant as specified in its charter)

New York
*(State or Other Jurisdiction
of Incorporation or Organization)*

527 Madison Avenue
New York, NY
(Address of Principal Executive Offices)

13-2866202
*(I.R.S. Employer Identification
Number)*

10022
(Zip Code)

ENZO BIOCHEM, INC. SALARY REDUCTION PROFIT SHARING PLAN
(Full Title of the Plan)

Barry W. Weiner
President and Treasurer
Enzo Biochem, Inc.
527 Madison Avenue
New York, NY 10022
(Name and address of agent for service)

(212) 583-0100
(Telephone number, including area code, of agent for service)

Copy to:
Robert H. Cohen, Esq.
Ze'-ev D. Eiger, Esq.
McDermott Will & Emery LLP
340 Madison Avenue
New York, NY 10173
(212) 547-5400

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Exchange Act.

CALCULATION OF REGISTRATION FEE

Title of securities to be registered	Amount to be registered(1)(2)	Proposed maximum offering price per share(3)	Proposed maximum aggregate offering price(3)	Amount of registration fee
Common Stock, par value \$0.01 per share	1,000,000	\$2.20	\$2,200,000	\$284.91

- (1) Pursuant to Rule 416(a) of the Securities Act of 1933, as amended (the "Securities Act"), this Registration Statement also registers any additional shares of common stock, par value \$0.01 per share ("Common Stock"), of Enzo Biochem, Inc. (the "Company"), as may become available or issuable under the Enzo Biochem, Inc. Salary Reduction Profit Sharing Plan (the "Plan"), to prevent dilution resulting from stock splits, stock dividends, or similar transactions.
- (2) Pursuant to Rule 416(c) under the Securities Act, this Registration Statement also covers an indeterminate amount of interests to be offered or sold pursuant to the Plan.
- (3) Estimated solely for the purpose of determining the amount of the registration fee pursuant to Rule 457(c) and Rule 457(h) under the Securities Act, based on the average of the high and low prices per share of Common Stock as reported on the New York Stock Exchange on March 5, 2020.

Explanatory Note

This Registration Statement is being filed solely to register an additional 1,000,000 shares of common stock, par value \$0.01 per share (the "Common Stock"), of Enzo Biochem, Inc. (the "Company") reserved for issuance under the Company's Salary Reduction Profit Sharing Plan (the "Plan"). The securities subject to this Registration Statement are of the same class for which the Company previously filed with the Securities and Exchange Commission (the "Commission") a Registration Statement on Form S-8 under the Securities Act of 1933, as amended (the "Securities Act"). The Company initially registered 1,000,000 shares of Common Stock issuable under the Plan pursuant to a Registration Statement on Form S-8 (File No. 333-197028) filed with Commission on June 25, 2014 (the "Prior Registration Statement"). Accordingly, the contents of the Prior Registration Statement are hereby incorporated by reference in this Registration Statement pursuant to General Instruction E of Form S-8.

PART II INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

ITEM 3. INCORPORATION OF DOCUMENTS BY REFERENCE.

The following documents filed with the Commission are hereby incorporated by reference into this Registration Statement:

- (a) the Company's Annual Report on Form 10-K for the year ended July 31, 2019, filed with the Commission on October 15, 2019, as amended by Amendment No. 1 on Form 10-K/A filed with the Commission on November 26, 2019;
- (b) the Company's Quarterly Reports on Form 10-Q for the quarter ended October 31, 2019, filed with the Commission on December 10, 2019, and for the quarter ended January 31, 2020, filed with the Commission on March 6, 2020;
- (c) the Company's Current Reports on Form 8-K filed with the Commission on August 5, 2019, September 24, 2019, November 1, 2019, December 5, 2019, December 23, 2019, December 31, 2019, January 8, 2020 (as amended by Amendment No. 1 on Form 8-K/A filed with the Commission on January 17, 2020), January 29, 2020, February 7, 2020, February 11, 2020, February 18, 2020, February 19, 2020, February 25, 2020 and March 2, 2020; and
- (d) the description of the Common Stock set forth in the Company's Registration Statement on Form 8-A, filed with the Commission on December 8, 1999.

All documents filed by the Company pursuant to Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, subsequent to the date hereof and prior to the filing of a post-effective amendment which indicates that all securities offered have been sold or which deregisters all securities then remaining unsold shall be deemed to be incorporated by reference herein and to be a part hereof from the date of filing of such documents. Notwithstanding the foregoing, unless specifically stated to the contrary, none of the information disclosed by the Company under Items 2.02 or 7.01 of any Current Report on Form 8-K that the Company may from time to time furnish to the Commission will be incorporated by reference into, or otherwise included in, this Registration Statement. Any statement contained herein or in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this Registration Statement to the extent that a statement contained herein or in any subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Registration Statement.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Company certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of New York, State of New York, on March 6, 2020.

ENZO BIOCHEM, INC.

By: /s/ Elazar Rabbani, Ph.D.
Elazar Rabbani, Ph.D.
Chairman of the Board, Chief Executive Officer and Director

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENT, that each person whose signature appears below constitutes and appoints Elazar Rabbani, Ph.D. and David Bench, and each or either of them, his true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments, including post-effective amendments, to this Registration Statement, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their or his substitutes or substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed below by the following persons in the capacities and on the dates indicated.

Date: March 6, 2020 By: /s/ Elazar Rabbani, Ph.D.
Elazar Rabbani, Ph.D.
Chairman of the Board, Chief Executive Officer and Director
(Principal Executive Officer)

Date: March 6, 2020 By: /s/ David Bench
David Bench
Chief Financial Officer
(Principal Financial Officer and Principal Accounting Officer)

Date: March 6, 2020 By: /s/ Barry W. Weiner
Barry W. Weiner
President and Treasurer

By: _____
Fabian Blank
Director

By: _____
Peter J. Clemens, IV
Director

Date: March 6, 2020 By: /s/ Rebecca J. Fischer
Rebecca J. Fischer
Director

Date: March 6, 2020 By: /s/ Dov Perlysky
Dov Perlysky
Director

EXHIBIT INDEX

<u>No.</u>	<u>Description</u>
4.1	<u>Certificate of Incorporation.(1)</u>
4.2	<u>Certificate of Amendment of the Certificate of Incorporation, Filed March 17, 1980.(1)</u>
4.3	<u>Certificate of Amendment of the Certificate of Incorporation, Filed June 16, 1981.(1)</u>
4.4	<u>Certificate of Amendment to the Certificate of Incorporation, Filed July 22, 1988.(1)</u>
4.5	<u>Amended and Restated By-Laws.(2)</u>
4.6	Amended and Restated By-Laws.(3)
4.7	<u>Amendment No. 1 to Amended and Restated By-Laws.(4)</u>
4.8	Form of Common Stock Certificate.(1)
5.1	<u>Legal Opinion of McDermott Will & Emery LLP.</u>
23.1	<u>Consent of EisnerAmper LLP.</u>
23.2	<u>Consent of McDermott Will & Emery LLP (included in exhibit 5.1).</u>
24.1	<u>Powers of Attorney of the directors and certain officers of the Company (included on the signature page to the Registration Statement).</u>
99.1	<u>Enzo Biochem, Inc. Salary Reduction Profit Sharing Plan.(5)</u>
99.2	<u>Enzo Biochem, Inc. Salary Reduction Profit Sharing Plan Adoption Agreement.(5)</u>

(1)	Incorporated by reference from the Company's Registration Statement on Form S-8 (Registration No. 333-123712) filed with the Commission on March 31, 2005.
(2)	Incorporated by reference from the Company's Current Report on Form 8-K filed with the Commission on January 22, 2013.
(3)	Incorporated by reference from the Company's Current Report on Form 8-K filed with the Commission on December 3, 2018.
(4)	Incorporated by reference from the Company's Current Report on Form 8-K filed with the Commission on March 2, 2020.
(5)	Incorporated by reference from the Company's Registration Statement on Form S-8 (Registration No. 333-197028) filed with the Commission on June 25, 2014.



March 6, 2020

Enzo Biochem, Inc.
527 Madison Avenue
New York, New York 10022

Re: Enzo Biochem, Inc. Registration Statement on Form S-8

Dear Ladies and Gentlemen:

We are rendering this opinion in connection with the Registration Statement on Form S-8 (the “Registration Statement”) to be filed with the Securities and Exchange Commission under the Securities Act of 1933, as amended, with respect to the registration of 1,000,000 additional shares (the “Shares”) of common stock, par value \$0.01 per share, of Enzo Biochem, Inc., a New York corporation (the “Company”), pursuant to the Enzo Biochem, Inc. Salary Reduction Profit Sharing Plan (the “Plan”).

We have examined: (i) the Registration Statement; (ii) the Company’s Certificate of Incorporation, as amended to date; (iii) the Company’s Amended and Restated By-Laws, as amended to date; (iv) the Plan; and (v) the corporate proceedings relating to the registration of the Shares pursuant to the Plan.

In addition to the examination outlined above, we have conferred with various officers of the Company and have ascertained or verified, to our satisfaction, such additional facts as we deemed necessary or appropriate for the purposes of this opinion. In our examination, we have assumed the authenticity of all documents submitted to us as originals, the conformity to the original documents of all documents submitted to us as copies, the genuineness of all signatures on documents reviewed by us and the legal capacity of natural persons.

Based on the foregoing, we are of the opinion that the Shares that constitute original issuance shares will be validly issued, fully paid and nonassessable by the Company when the issuance of such Shares has been duly and validly approved by the board of directors of the Company and such Shares have been delivered in accordance with the Plan.

We do not express any opinion herein concerning any law other than the New York Business Corporation Law.

We consent to the filing of this opinion as an exhibit to the Registration Statement and we consent to the use of our name wherever it appears in the Registration Statement. In giving this consent, we do not

**McDermott
Will & Emery**

340 Madison Avenue New York NY 10173-1922 Tel +1 212 547 5400 Fax +1 212 547 5444

US practice conducted through McDermott Will & Emery LLP.

Enzo Biochem, Inc.

March 6, 2020

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hereby admit that we come within the category of persons whose consent is required under Section 7 of the Securities Act of 1933, as amended, or the rules and regulations of the Securities and Exchange Commission thereunder.

Sincerely,

/s/ McDermott Will & Emery LLP

**McDermott
Will & Emery**

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement of Enzo Biochem, Inc. and Subsidiaries on Form S-8 to be filed on or about March 6, 2020 of our reports dated October 15, 2019, on our audits of the consolidated financial statements and financial statement schedules as of July 31, 2019 and 2018 and for each of the years in the three-year period ended July 31, 2019, and the effectiveness of Enzo Biochem, Inc.'s internal control over financial reporting as of July 31, 2019, which reports were included in the Annual Report on Form 10-K, filed October 15, 2019.

/s/ EisnerAmper LLP

EISNERAMPER LLP
New York, New York
March 6, 2020
