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

FORM 11-K

FOR ANNUAL REPORTS OF  
EMPLOYEE STOCK PURCHASE, SAVINGS AND SIMILAR PLANS  
PURSUANT TO SECTION 15(d) OF THE  
SECURITIES EXCHANGE ACT OF 1934  
(MARK ONE)

☒ ANNUAL REPORT PURSUANT TO SECTION 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934  
FOR THE FISCAL YEAR ENDED DECEMBER 31, 2024

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

FOR THE TRANSITION PERIOD FROM \_\_\_\_\_ TO \_\_\_\_\_

COMMISSION FILE NUMBER 001-09974

Enzo Biochem, Inc.  
Salary Reduction Profit Sharing Plan  
(Full title of the plan and the address of the plan, if different from that of the issuer named below:)

Enzo Biochem, Inc. 21 Executive Blvd., Farmingdale, NY 11735  
(Name of issuer of the securities held pursuant to the plan and the address of its principal executive office)

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ENZO BIOCHEM, INC.  
SALARY REDUCTION PROFIT SHARING PLAN

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## REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Audit Committee, Plan Administrator and Participants  
of the Enzo Biochem, Inc. Salary Reduction Profit Sharing Plan

### ***Opinion on the Financial Statements***

We have audited the accompanying statements of net assets available for benefits of the Enzo Biochem, Inc. Salary Reduction Profit Sharing Plan (the “Plan”) as of December 31, 2024 and 2023, and the related statement of changes in net assets available for benefits for the year ended December 31, 2024, and the related notes (collectively referred to as the “financial statements”).

In our opinion, the financial statements present fairly, in all material respects, the net assets available for benefits of the Plan as of December 31, 2024 and 2023, and the changes in net assets available for benefits for the year ended December 31, 2024, in conformity with accounting principles generally accepted in the United States of America.

### ***Basis for Opinion***

These financial statements are the responsibility of the Plan's management. Our responsibility is to express an opinion on the Plan's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (“PCAOB”) and are required to be independent with respect to the Plan in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Plan is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Plan's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

### ***Supplemental Information***

The supplemental information in the accompanying schedule of assets (held at end of year) as of December 31, 2024, has been subjected to audit procedures performed in conjunction with the audit of the Plan's financial statements. The supplemental information is the responsibility of the Plan's management. Our audit procedures included determining whether the supplemental information reconciles to the financial statements or the underlying accounting and other records, as applicable, and performing procedures to test the completeness and accuracy of the information presented in the supplemental information. In forming our opinion on the supplemental information, we evaluated whether the supplemental information, including its form and content, is presented in conformity with the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974. In our opinion, the supplemental information is fairly stated, in all material respects, in relation to the financial statements as a whole.

{Signature or /s/ EisnerAmper LLP}

We have served as the Plan's auditor since 2010.

EISNERAMPER LLP  
Iselin, New Jersey  
June 30, 2025

**ENZO BIOCHEM, INC.  
SALARY REDUCTION PROFIT SHARING PLAN**

**Statements of Net Assets Available for Benefits**

**December 31,**

	<b><u>2024</u></b>	<b><u>2023</u></b>
<b>ASSETS</b>		
Investments, at fair value:		
Mutual funds	\$ 30,183,871	\$ 31,441,592
Enzo Biochem, Inc. common stock	922,394	1,764,735
Collective trust – Stable Value Fund	1,396,887	1,215,118
	<u>32,503,152</u>	<u>34,421,445</u>
Receivables:		
Employer’s contributions	336,640	614,693
Notes receivable – participants	209,597	233,517
	<u>546,237</u>	<u>848,210</u>
<b>TOTAL ASSETS</b>	<u>33,049,389</u>	<u>35,269,655</u>
<b>NET ASSETS AVAILABLE FOR BENEFITS</b>	<u>\$ 33,049,389</u>	<u>\$ 35,269,655</u>

See notes to financial statements.

**ENZO BIOCHEM, INC.**  
**SALARY REDUCTION PROFIT SHARING PLAN**

**Statement of Changes in Net Assets Available for Benefits**

**For the Year Ended December 31, 2024**

Additions (deductions) from net assets attributed to:

Investment income:

Interest and dividends	\$ 1,558,442
Net realized/unrealized appreciation in value of investments	1,853,094
Interest on notes receivable – participants	10,742
Contributions:	
Participants' contributions	1,003,381
Employer's contributions	336,640
Benefits paid to participants	(6,929,945)
Administrative expenses	(52,602)
Net decrease in net assets available for benefits	<u>(2,220,266)</u>
Net assets available for benefits, beginning of year	<u>35,269,655</u>
Net assets available for benefits, end of year	<u><u>\$ 33,049,389</u></u>

See notes to financial statements.

**ENZO BIOCHEM, INC.**  
**SALARY REDUCTION PROFIT SHARING PLAN**  
**Notes to Financial Statements**

**NOTE 1: PLAN DESCRIPTION**

The following description of the Enzo Biochem, Inc. Salary Reduction Profit Sharing Plan (the “Plan”) provides only general information. Participants should refer to the Plan Agreement, as amended, for a more complete description of the Plan’s provisions.

*General*

The Plan is a defined contribution plan covering all eligible United States based full-time employees of Enzo Biochem, Inc. (the “Plan Sponsor”), and its wholly owned subsidiaries, Enzo Therapeutics, Inc., and Enzo Life Sciences, Inc. (collectively, the “Company”) who have completed one month of service and have attained age twenty-one. The Plan is subject to the provisions of the Employee Retirement Income Security Act of 1974 (“ERISA”).

*Contributions*

Eligible employee participants can elect to defer up to 70% of compensation to the maximum amount permitted by the Internal Revenue Code (the “Code”) for each year (\$23,000 in 2024 and \$22,500 in 2023). Catch-up contributions are also permitted for participants who have attained age 50 by December 31<sup>st</sup>, in accordance with Section 414(v) of the Code, in an amount up to a maximum of \$7,500 in 2024 and 2023, bringing those participants’ statutory maximum limitation to \$30,500 in 2024 and \$30,000 in 2023. In 2024, participant contributions totaled \$1,003,381 which includes \$11,525 in rollover contributions.

The Company may contribute to the Plan annually a discretionary matching contribution and a non-elective employer contribution. For 2024, the discretionary matching contribution was equal to the lesser of 50% of the participant’s 401(k) contribution or 5% of their gross pay. For 2023, the discretionary matching contribution was equal to 50% of the participant’s 401(k) contribution. Participants who complete 1,000 hours of service during the plan year and are actively employed as of the last day of the plan year are deemed eligible to share in the matching contribution and any non-elective employer contribution for the year. Participants who terminate at or above age 65 at any time during the year and have been employed for at least five years are deemed retired and are also eligible to share in the matching contribution. In 2024, the total Company matching contributions were \$336,640 in cash. In 2023, the total Company matching contributions were \$614,693 in the form of Enzo Biochem Inc. common stock. There were no non-elective employer contributions made in 2024 or 2023.

The Plan provides that unless the participant affirmatively elects otherwise, the participant’s compensation will automatically be reduced by 3%, which will be considered to be the Participant’s salary reduction election.

*Partial plan termination due to sale of segment assets*

In March 2023, the Company and Plan Sponsor announced an agreement to sell certain assets used in the operation of Enzo Clinical Labs to Labcorp (the “Asset Sale”). Effective July 24, 2023, the Company completed the Asset Sale and ceased its clinical services operations. As a result, most Enzo Clinical Labs, Inc. employees were terminated in July 2023. The Plan is considered partially terminated because more than 20% of the Plan’s participants were terminated due to the Asset Sale. All participants of the Enzo Clinical Labs division who terminated during the plan year 2023 became fully vested in their Plan accounts with respect to Company matches.

**ENZO BIOCHEM, INC.**  
**SALARY REDUCTION PROFIT SHARING PLAN**  
**Notes to Financial Statements**

Also because of the Asset Sale, the Plan was amended in April 2023 to enable loans to not be due at termination of employment so that upon employment termination, the full balance of the loan did not have to be repaid. Participants with loans had to contact Fidelity, the trustee and record keeper of the Plan and put in place the process to continue loan repayments directly from their personal bank accounts on a monthly basis until the termination date of the loan.

*Participant Accounts*

Participants direct both their contributions and employer contributions into various investment options offered by the Plan, which include a choice of mutual funds and the common stock of Enzo Biochem, Inc. Each participant's account is credited with the participant's contribution and allocations of (a) the Company's matching contribution and non-elective employer contribution, (b) Plan earnings (losses) and (c) charged with an allocation of administrative expenses. Allocations are based on participant compensation, account balances or specific participant transactions, as defined. The benefit to which a participant is entitled is the benefit that can be provided from the participant's vested account. The Plan allows a participant to elect to classify all or part of his or her elective deferrals as a Roth 401(k) deferral.

*Vesting*

Participants' contributed funds arising from salary reductions and the earnings thereon are fully vested at all times. Vesting in the Company's discretionary matching contribution and non-elective employer contribution and earnings thereon is ratable over four years of service. Once four years of service are achieved, all subsequent matching contributions are fully vested when the match is made.

*Forfeitures*

Forfeited non-vested amounts may be used to pay Plan expenses or reduce the Company's future contributions to the Plan. During the year ended December 31, 2024, forfeitures were used to pay \$41,353 of Plan expenses. Forfeited non-vested amounts available at December 31, 2024 and 2023 were \$34,288 and \$22,169, respectively.

*Notes Receivable from Participants*

Notes receivable from participants are measured at their unpaid principal balance plus any accrued but unpaid interest. Participants may borrow from their accounts a minimum of \$1,000 up to a maximum of 50% of their vested account balance or \$50,000. Participants are entitled to borrow from their account for a maximum loan term of five years unless the proceeds are used to acquire a principal residence in which case it may exceed five years. The loans, classified as Notes Receivable from Participants, are secured by the participant's vested account balance and bear a reasonable rate of interest, ranging from 4.5% to 5.0% at December 31, 2024. Principal and interest are paid ratably through payroll deductions. In addition, if a participant with an outstanding balance terminates employment, the participant may continue to make loan repayments directly to the trustee. Delinquent notes receivable from participants are reclassified as distributions based upon the terms of the Plan document. Related fees are recorded as administrative expenses and are expensed when they are incurred.

*Payment of Benefits*

On termination of service due to death, disability or retirement, participants may elect to receive an amount equal to the value of the vested interest in their account in a lump sum amount. For termination of service due to other reasons, a participant may receive the value of the vested interest in their account as a lump sum distribution. Benefits are payable in the form of cash or Company common stock.

**ENZO BIOCHEM, INC.**  
**SALARY REDUCTION PROFIT SHARING PLAN**  
**Notes to Financial Statements**

*Plan Expenses*

Generally, substantially all expenses incurred in connection with the administration of the Plan are paid by the Plan with forfeitures, if available. The Plan Sponsor pays certain expenses of the Plan if the balance of forfeitures is not adequate. Costs associated with participant loans and distribution fees are paid by participants.

**NOTE 2: SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES:**

*Basis of Accounting*

The Plan's financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America and under the accrual basis method of accounting.

*Payment of Benefits*

Benefits are recorded when paid.

*Use of Estimates*

The preparation of the financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect reported amounts of net assets available for benefits at the date of the financial statements and the accompanying footnotes and the changes in net assets available for benefits during the reporting period and when applicable disclosures of contingent assets and liabilities at the date of the financial statements. Actual results could differ from those estimates.

*Investment Valuation and Income Recognition*

The Plan's investments are stated at fair value. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. See Note 3 for discussion of fair value measurements.

Interest income is recorded on the accrual basis. Dividends are recorded on the ex-dividend date. Investment earnings are reinvested in the respective funds. Net realized/unrealized appreciation in value of investments includes the Plan's realized gains and losses on the disposal of investments, and appreciation or depreciation in the fair value of the underlying investments. All purchases and sales are recorded on a trade date basis.



**ENZO BIOCHEM, INC.**  
**SALARY REDUCTION PROFIT SHARING PLAN**  
**Notes to Financial Statements**

**NOTE 3: FAIR VALUE MEASUREMENTS**

The Financial Accounting Standards Board's ("FASB"), Accounting Standards Codification ("ASC" 820), *Fair Value Measurements and Disclosures*, provides a framework for measuring fair value. That framework provides a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (level 1 measurement) and the lowest priority to unobservable inputs (level 3 measurement). The three levels of the fair value hierarchy under ASC 820 are described as follows:

Level 1 - Inputs to the valuation methodology are unadjusted quoted prices for identical assets or liabilities in active markets that the Plan has the ability to access.

Level 2 - Inputs to the valuation methodology include: quoted prices for similar assets or liabilities in active markets; quoted prices for identical or similar assets or liabilities in inactive markets; inputs other than quoted prices that are observable for the assets or liability; inputs that are derived principally from or corroborated by observable market data by correlation or other means.

If the asset or liability has a specified (contractual) term, the level 2 Input must be observable for substantially the full term of the asset or liability.

Level 3 - Inputs to the valuation methodology are unobservable and significant to the fair value measurements.

The asset or liability's fair value measurement level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. Valuation techniques used need to maximize the use of observable inputs and minimize the use of unobservable inputs.

Following is a description of the valuation methodologies used for assets measured at fair value. There have been no changes in the methodologies used at December 31, 2024 and 2023.

Mutual funds – Valued at the daily closing price as reported by the fund. Mutual funds held by the Plan are open-ended mutual funds that are registered with the Securities and Exchange Commission. These funds are required to publish their daily net asset value ("NAV") and to transact at that price. The mutual funds held by the Plan are deemed to be actively traded.

Common stocks (Enzo Biochem, Inc.) – Valued at the closing price reported on the active market on which the individual securities are traded.

Stable Value – Great Gray Collective Investment Trust fund – A collective investment trust that holds investments in the Putnam Stable Value Fund. The NAV per unit is computed by dividing the total fair value of the assets, less its liabilities, by the total number of units outstanding at the time of such computation. Investment income earned is reinvested and included in the determination of unit values. The net asset value is used as a practical expedient to estimate fair value. This practical expedient would not be used if it is determined to be probable that the fund will sell the investment for an amount different from the reported net asset value. Participant transactions (purchases and sales) may occur daily. Advance written notice of 5 business days shall be required for any Plan Sponsor directed withdrawal that will exceed \$1,000,000. Plan Sponsor directed withdrawals of \$75,000,000 or more require advance written notice of 60 days and may be subject to a 12 month deferral. In addition, the Trustee may at any time, in its sole discretion, withhold payment on any distribution or withdrawal to the extent necessary. Additionally, there are no unfunded commitments in the fund as of December 31, 2024.

**ENZO BIOCHEM, INC.**  
**SALARY REDUCTION PROFIT SHARING PLAN**  
**Notes to Financial Statements**

The methods described may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Furthermore, although the Plan believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

The following tables sets forth by level, within the fair value hierarchy, the Plan's investments fair value:

	<b>Assets at Fair Value as of December 31,</b>	
	<b>2024</b>	<b>2023</b>
Mutual funds – Level 1	\$ 30,183,871	\$ 31,441,592
Common stock-Enzo Biochem, Inc. – Level 1	922,394	1,764,735
<b>Total Level 1</b>	<b>\$ 31,106,265</b>	<b>\$ 33,206,327</b>
Collective trust – Great Gray Stable Value Fund – measured at NAV (a)	1,396,887	1,215,118
<b>Total</b>	<b>\$ 32,503,152</b>	<b>\$ 34,421,445</b>

(a) Certain investments that are measured at fair value using the NAV per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy. The fair value amounts presented in this table are intended to permit reconciliation of the fair value hierarchy to the amounts presented in the statement of net assets available for benefits.

*Changes in Fair Value Levels*

The availability of observable market data is monitored to assess the appropriate classification of financial instruments within the fair value hierarchy. Changes in economic conditions or model-based valuation techniques may require the transfer of financial instruments from one fair value level to another.

**NOTE 4: RIGHT TO TERMINATE PLAN**

Although it has not expressed any intent to do so, the Company has the right under the Plan to discontinue its contributions at any time and to terminate the Plan subject to the provisions of ERISA. In the event of Plan termination participants would become 100% vested in their Company contributions.

**NOTE 5: TAX STATUS**

The Plan has adopted the Fidelity Management and Research Company Volume Submitter plan. On June 30, 2020 the Internal Revenue Service stated in advisory letters that the Volume Submitter adopted by the Plan, as then assigned, was in compliance with the applicable requirements of the Internal Revenue Code and therefore, the related trust is exempt from taxation. The Plan has been amended since receiving the letter. However, the Plan administrator believes that the Plan is currently designed and being operated in compliance with the applicable requirements of the Internal Revenue Code. Therefore, the Plan administrator believes that the Plan is qualified and the related trust is tax-exempt.

**ENZO BIOCHEM, INC.**  
**SALARY REDUCTION PROFIT SHARING PLAN**  
**Notes to Financial Statements**

Accounting principles generally accepted in the United States of America require plan management to evaluate tax positions taken by the Plan and recognize a tax liability if the Plan has taken an uncertain position that more likely than not would not be sustained upon examination by a government authority. The plan administrator has analyzed the tax positions taken by the Plan, and has concluded that as of December 31, 2024, there are no uncertain positions taken or expected to be taken that would require recognition of a liability or disclosure in the financial statements. The Plan is subject to routine examination by taxing jurisdictions; however, there are currently no examinations for any tax periods in progress.

**NOTE 6: RELATED PARTY AND PARTY IN INTEREST TRANSACTIONS**

During 2024, the Plan purchased 493,704 shares of common stock of the Plan sponsor, at market prices totaling \$621,595 and sold 472,810 shares of common stock at market prices totaling approximately \$542,111. At December 31, 2024, the Plan held Enzo Biochem, Inc. common stock with a fair value of \$922,394 and shares owned of 1,289,680. At December 31, 2023, the Plan held Enzo Biochem, Inc. common stock with a fair value of \$1,764,735 and shares owned of 1,268,786.

Fidelity Investments Institutional Operations Company LLC (“FIIOC”) is the trustee and record keeper of the Plan. Certain Plan investments are shares of mutual funds managed by affiliates of FIIOC. Therefore, these transactions qualify as Party-in-interest transactions. Fees paid by the Plan for the investment management services are included in net appreciation in fair value of investments.

Fees paid by the Plan to FIIOC amounted to \$9,394 for the year ended December 31, 2024. In addition the Plan paid for advisory and auditing fees amounting to \$43,208 for the year ended December 31, 2024.

**NOTE 7: RISKS AND UNCERTAINTIES**

The Plan invests in various investment securities. Investment securities are exposed to various risk such as interest rate, market, and credit risks. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities will occur in the near term and that such changes could materially affect participants’ account balances and the amounts reported in the statements of net assets available for benefits.

Volatility in the financial markets may significantly impact the subsequent valuation of the Plan’s investments. Accordingly, the valuation of investments at December 31, 2024 may not necessarily be indicative of amounts that could be realized in a current market exchange.

**NOTE 8: MUTUAL FUND FEES**

Investments in mutual funds are subject to sales charges in the form of front-end loads, back-end loads or 12b-1 fees. 12b-1 fees, which are ongoing fees allowable under Section 12b-1 of the Investment Company Act of 1940, are annual fees deducted to pay for marketing and distribution costs of the funds. These fees are deducted prior to the allocation of the Plan’s investment earnings activity, and thus not separately identifiable as an expense.

**NOTE 9: SUBSEQUENT EVENTS**

Effective January 1, 2025, after-tax contributions and in-plan Roth rollovers are allowed. In addition, participant deferrals will be increased by 1% annually on May 1 until deferrals reach a cap of 15%.

On June 23, 2025, Enzo Biochem, Inc. entered into an Agreement and Plan of Merger (the “Merger Agreement”) to be acquired by Battery Ventures, a global, technology-focused investment firm, through its newly formed entity Bethpage Parent, Inc. (the “Acquirer”). Under the terms of the Merger Agreement, Battery will acquire Enzo for \$0.70 per share in cash, representing a total consideration of approximately \$37 million. The transaction is subject to customary closing conditions, including shareholder approval. Subject to the satisfaction of these conditions, the transaction is expected to close in the third quarter of the calendar year. All of the Company’s officers and directors, as well as the Company’s largest shareholder, have executed support agreements to vote all of their shares in favor of the transaction. Following the closing of the transaction, the Company will be privately held, and shares of OTCQX: ENZB will no longer be listed on public market exchanges.

**ENZO BIOCHEM, INC.**  
**SALARY REDUCTION PROFIT SHARING PLAN**  
**Schedule H, Line 4i**  
**Schedule of Assets (Held at End of Year)**  
**E.I.N. # 13-2866202**  
**Plan # 001**  
**December 31, 2024**

Identity of Issue, Borrower, Lessor or Similar Party		Description of Investment Including Maturity Date, Rate of Interest, Collateral, Par or Maturity Value	Current Value
*	Enzo Biochem, Inc.	Common Stock	\$ 922,394
	Pimco Total Return	Mutual Fund	622,516
	INVS DIVRS DIVD R5	Mutual Fund	425,942
	NB Genesis	Mutual Fund	694,887
	JPM Mid Cap Growth A	Mutual Fund	422,718
	Allspring Special Sm Cap Val A	Mutual Fund	235,940
	TRP Div Growth Adv	Mutual Fund	546,072
	Parnassus Mid Cap	Mutual Fund	74,937
*	Fidelity Capital & Income	Mutual Fund	234,082
*	Fidelity Government Income	Mutual Fund	423,349
	MFS International Growth	Mutual Fund	237,783
*	Fidelity Emerging Markets	Mutual Fund	155,298
*	Fidelity Growth Discovery	Mutual Fund	5,187,734
*	Fidelity International Index	Mutual Fund	420,155
*	Fidelity 500 Index	Mutual Fund	3,086,494
*	Fidelity US Bond IDX Adv	Mutual Fund	297,922
*	Fidelity Freedom Inc.	Mutual Fund	30,786
*	Fidelity Freedom 2010	Mutual Fund	661,348
*	Fidelity Freedom 2015	Mutual Fund	1,773,769
*	Fidelity Freedom 2020	Mutual Fund	1,565,797
*	Fidelity Freedom 2025	Mutual Fund	1,739,911
*	Fidelity Freedom 2030	Mutual Fund	2,951,359
*	Fidelity Freedom 2035	Mutual Fund	2,431,529
*	Fidelity Freedom 2040	Mutual Fund	2,456,802
*	Fidelity Freedom 2045	Mutual Fund	1,213,570
*	Fidelity Freedom 2050	Mutual Fund	821,167
*	Fidelity Freedom 2055	Mutual Fund	539,068
*	Fidelity Freedom 2060	Mutual Fund	181,352
*	Fidelity Freedom 2065	Mutual Fund	43,450
*	Fidelity Extended Market Index Fund	Mutual Fund	708,134
	Great Gray Stable Value Fund	Collective trust	1,396,887
*	Notes receivable – participants(a)	4.5% - 5.0%	209,597
			<u><u>\$ 32,712,749</u></u>

\* Party-in-interest, as defined by ERISA

(a) Participant notes receivable mature from August 2025 through November 2029.

## EXHIBIT INDEX

Exhibit No.	Description
23.1	<a href="#">Consent of Independent Registered Public Accounting Firm</a>

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, a trustee of the below named employee benefit plan has duly caused this annual report to be signed on its behalf by the undersigned hereunto duly authorized.

Enzo Biochem, Inc. Salary Reduction Profit Sharing Plan

Date: June 30, 2025

/s/ Patricia Eckert

By: Patricia Eckert  
Trustee

**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We consent to the incorporation by reference in the Registration Statement of Enzo Biochem, Inc. on Forms S-8 No. 333-197028 and 333-236958 of our report dated June 30, 2025 on our audits of the financial statements of Enzo Biochem, Inc. Salary Reduction Profit Sharing Plan as of December 31, 2024 and 2023 and for the year ended December 31, 2024 and supplemental schedule as of December 31, 2024, which report is included in this Annual Report on Form 11-K to be filed on or about June 30, 2025.

*/s/ EisnerAmper LLP*

EISNERAMPER LLP  
Iselin, New Jersey  
June 30, 2025