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# SECURITIES AND EXCHANGE COMMISSION

## Washington, D.C. 20549

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### SCHEDULE 13D

Under the Securities Exchange Act of 1934

(Amendment No. 15)\*

ENZO BIOCHEM INC

(Name of Issuer)

Common Stock, par value \$0.01 per share

(Title of Class of Securities)

294100102

(CUSIP Number)

Kevin A. McGovern, Esq.  
c/o Harbert Discovery Fund, LP, 2100 Third Avenue North, Suite 600  
Birmingham, AL, 35203  
205-987-5500

Ele Klein & Brandon Gold  
Schulte Roth & Zabel LLP, 919 Third Avenue  
New York, NY, 10022  
212-756-2000

(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)

06/23/2025

(Date of Event Which Requires Filing of This Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of §§ 240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box. ☐

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

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### SCHEDULE 13D

CUSIP No.	294100102
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1	Name of reporting person Harbert Discovery Fund, LP
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2	Check the appropriate box if a member of a Group (See Instructions)	
	<input type="checkbox"/> (a) <input type="checkbox"/> (b)	
3	SEC use only	
4	Source of funds (See Instructions) WC	
5	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e) <input type="checkbox"/>	
6	Citizenship or place of organization DELAWARE	
Number of Shares Beneficially Owned by Each Reporting Person With:	7	Sole Voting Power 0.00
	8	Shared Voting Power 1,763,493.00
	9	Sole Dispositive Power 0.00
	10	Shared Dispositive Power 1,763,493.00
11	Aggregate amount beneficially owned by each reporting person 1,763,493.00	
12	Check if the aggregate amount in Row (11) excludes certain shares (See Instructions) <input type="checkbox"/>	
13	Percent of class represented by amount in Row (11) 3.36 %	
14	Type of Reporting Person (See Instructions) PN	

### SCHEDULE 13D

CUSIP No.	294100102
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1	Name of reporting person Harbert Discovery Fund GP, LLC
2	Check the appropriate box if a member of a Group (See Instructions) <input type="checkbox"/> (a) <input type="checkbox"/> (b)
3	SEC use only
4	Source of funds (See Instructions) AF
5	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e) <input type="checkbox"/>

6	Citizenship or place of organization DELAWARE	
Number of Shares Beneficially Owned by Each Reporting Person With:	7	Sole Voting Power 0.00
	8	Shared Voting Power 1,763,493.00
	9	Sole Dispositive Power 0.00
	10	Shared Dispositive Power 1,763,493.00
11	Aggregate amount beneficially owned by each reporting person 1,763,493.00	
12	Check if the aggregate amount in Row (11) excludes certain shares (See Instructions) <input type="checkbox"/>	
13	Percent of class represented by amount in Row (11) 3.36 %	
14	Type of Reporting Person (See Instructions) OO	

### SCHEDULE 13D

CUSIP No.	294100102
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1	Name of reporting person Harbert Discovery Co-Investment Fund I, LP	
2	Check the appropriate box if a member of a Group (See Instructions) <input type="checkbox"/> (a) <input type="checkbox"/> (b)	
3	SEC use only	
4	Source of funds (See Instructions) WC	
5	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e) <input type="checkbox"/>	
6	Citizenship or place of organization DELAWARE	
Number of Shares Beneficially Owned by Each Reporting Person With:	7	Sole Voting Power 0.00
	8	Shared Voting Power 3,412,420.00
	9	Sole Dispositive Power 0.00

	10	Shared Dispositive Power 3,412,420.00
11	Aggregate amount beneficially owned by each reporting person 3,412,420.00	
12	Check if the aggregate amount in Row (11) excludes certain shares (See Instructions) <input type="checkbox"/>	
13	Percent of class represented by amount in Row (11) 6.51 %	
14	Type of Reporting Person (See Instructions) PN	

### SCHEDULE 13D

CUSIP No.	294100102
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1	Name of reporting person Harbert Discovery Co-Investment Fund I GP, LLC	
2	Check the appropriate box if a member of a Group (See Instructions) <input type="checkbox"/> (a) <input type="checkbox"/> (b)	
3	SEC use only	
4	Source of funds (See Instructions) AF	
5	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e) <input type="checkbox"/>	
6	Citizenship or place of organization DELAWARE	
Number of Shares Beneficially Owned by Each Reporting Person With:	7	Sole Voting Power 0.00
	8	Shared Voting Power 3,412,420.00
	9	Sole Dispositive Power 0.00
	10	Shared Dispositive Power 3,412,420.00
11	Aggregate amount beneficially owned by each reporting person 3,412,420.00	
12	Check if the aggregate amount in Row (11) excludes certain shares (See Instructions) <input type="checkbox"/>	

13	Percent of class represented by amount in Row (11) 6.51 %
14	Type of Reporting Person (See Instructions) OO

SCHEDULE 13D

CUSIP No.	294100102
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1	Name of reporting person Harbert Fund Advisors, Inc.	
2	Check the appropriate box if a member of a Group (See Instructions) <input type="checkbox"/> (a) <input type="checkbox"/> (b)	
3	SEC use only	
4	Source of funds (See Instructions) AF	
5	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e) <input type="checkbox"/>	
6	Citizenship or place of organization ALABAMA	
Number of Shares Beneficially Owned by Each Reporting Person With:	7	Sole Voting Power 0.00
	8	Shared Voting Power 5,175,913.00
	9	Sole Dispositive Power 0.00
	10	Shared Dispositive Power 5,175,913.00
11	Aggregate amount beneficially owned by each reporting person 5,175,913.00	
12	Check if the aggregate amount in Row (11) excludes certain shares (See Instructions) <input type="checkbox"/>	
13	Percent of class represented by amount in Row (11) 9.87 %	
14	Type of Reporting Person (See Instructions) CO, IA	

SCHEDULE 13D

CUSIP No.

294100102

1	Name of reporting person Harbert Management Corporation	
2	Check the appropriate box if a member of a Group (See Instructions) <input type="checkbox"/> (a) <input type="checkbox"/> (b)	
3	SEC use only	
4	Source of funds (See Instructions) AF	
5	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e) <input type="checkbox"/>	
6	Citizenship or place of organization ALABAMA	
Number of Shares Beneficially Owned by Each Reporting Person With:	7	Sole Voting Power 0.00
	8	Shared Voting Power 5,175,913.00
	9	Sole Dispositive Power 0.00
	10	Shared Dispositive Power 5,175,913.00
11	Aggregate amount beneficially owned by each reporting person 5,175,913.00	
12	Check if the aggregate amount in Row (11) excludes certain shares (See Instructions) <input type="checkbox"/>	
13	Percent of class represented by amount in Row (11) 9.87 %	
14	Type of Reporting Person (See Instructions) CO	

## SCHEDULE 13D

CUSIP No.

294100102

1	Name of reporting person Jack Bryant	
2	Check the appropriate box if a member of a Group (See Instructions) <input type="checkbox"/> (a) <input type="checkbox"/> (b)	
3	SEC use only	

4	Source of funds (See Instructions) AF	
5	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e) <input type="checkbox"/>	
6	Citizenship or place of organization UNITED STATES	
Number of Shares Beneficially Owned by Each Reporting Person With:	7	Sole Voting Power 0.00
	8	Shared Voting Power 5,175,913.00
	9	Sole Dispositive Power 0.00
	10	Shared Dispositive Power 5,175,913.00
11	Aggregate amount beneficially owned by each reporting person 5,175,913.00	
12	Check if the aggregate amount in Row (11) excludes certain shares (See Instructions) <input type="checkbox"/>	
13	Percent of class represented by amount in Row (11) 9.87 %	
14	Type of Reporting Person (See Instructions) IN	

### SCHEDULE 13D

CUSIP No.	294100102
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1	Name of reporting person Kenan Lucas
2	Check the appropriate box if a member of a Group (See Instructions) <input type="checkbox"/> (a) <input type="checkbox"/> (b)
3	SEC use only
4	Source of funds (See Instructions) AF
5	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e) <input type="checkbox"/>
6	Citizenship or place of organization UNITED STATES

Number of Shares Beneficially Owned by Each Reporting Person With:	7	Sole Voting Power 0.00
	8	Shared Voting Power 5,175,913.00
	9	Sole Dispositive Power 0.00
	10	Shared Dispositive Power 5,175,913.00
11	Aggregate amount beneficially owned by each reporting person 5,175,913.00	
12	Check if the aggregate amount in Row (11) excludes certain shares (See Instructions) <input type="checkbox"/>	
13	Percent of class represented by amount in Row (11) 9.87 %	
14	Type of Reporting Person (See Instructions) IN	

### SCHEDULE 13D

CUSIP No.	294100102
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1	Name of reporting person Raymond Harbert
2	Check the appropriate box if a member of a Group (See Instructions) <input type="checkbox"/> (a) <input type="checkbox"/> (b)
3	SEC use only
4	Source of funds (See Instructions) AF
5	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e) <input type="checkbox"/>
6	Citizenship or place of organization UNITED STATES



Number of Shares Beneficially Owned by Each Reporting Person With:	7	Sole Voting Power 0.00
	8	Shared Voting Power 5,175,913.00
	9	Sole Dispositive Power 0.00
	10	Shared Dispositive Power 5,175,913.00
11	Aggregate amount beneficially owned by each reporting person 5,175,913.00	
12	Check if the aggregate amount in Row (11) excludes certain shares (See Instructions) <input type="checkbox"/>	
13	Percent of class represented by amount in Row (11) 9.87 %	
14	Type of Reporting Person (See Instructions) IN	

## SCHEDULE 13D

### Item 1. Security and Issuer

(a) Title of Class of Securities:

Common Stock, par value \$0.01 per share

(b) Name of Issuer:

ENZO BIOCHEM INC

(c) Address of Issuer's Principal Executive Offices:

60 EXECUTIVE BLVD, FARMINGDALE, NEW YORK , 11735.

**Item 1 Comment:** The following constitutes Amendment No. 15 to the Schedule 13D filed by the undersigned (the "Amendment No. 15"). This Amendment No. 15 amends the Schedule 13D, filed with the Securities and Exchange Commission on April 8, 2019, as specifically set forth herein.

### Item 4. Purpose of Transaction

On June 23, 2025, the Issuer entered into an Agreement and Plan of Merger (the "Merger Agreement") with Bethpage Parent, Inc., a Delaware corporation ("Bethpage"), and Bethpage Merger Sub, Inc., a New York corporation and a wholly owned subsidiary of Bethpage ("Merger Sub"). Pursuant to the terms of the Merger Agreement, Bethpage will acquire the Issuer in an all-equity transaction through the merger of Merger Sub with and into the Issuer, with the Issuer continuing as the surviving corporation of the merger (the "Merger") and a wholly owned subsidiary of Bethpage, subject to the terms and conditions set forth in the Merger Agreement. The foregoing description of the Merger Agreement does not purport to be complete and is qualified in its entirety by reference to the full text of the Merger Agreement, which is attached as Exhibit 2.1 to the Current Report on Form 8-K filed by the Issuer with the Securities and Exchange Commission on June 24, 2025, and is incorporated herein by reference.

In connection with the execution of the Merger Agreement, on June 23, 2025, the Funds entered into a Voting and Support Agreement (the "Voting and Support Agreement") in favor of the Bethpage and Merger Sub, pursuant to which the Funds, subject to the terms and conditions set forth therein, agreed to vote their shares of Common Stock then-entitled to be voted in favor of the Merger and the adoption of the Merger Agreement and against any alternative transaction proposal. In addition, subject to the terms and conditions set forth in the Voting and Support Agreement, the Funds have agreed not to take certain actions, including (i) transferring any shares of Common Stock (subject to certain exceptions), (ii) granting any proxies or powers of attorney, or (iii) exercising any dissenters' rights with respect to the Merger.

The Voting and Support Agreement will terminate the earliest of (i) the Effective Time (as defined in the Merger Agreement), (ii) such date and time as the Merger Agreement is validly terminated in accordance with its terms (subject to certain exceptions), (iii) written agreement of Bethpage and the Funds to terminate the Voting and Support Agreement, and (iv) the Funds' delivery of written notice to Bethpage of their election, in their sole discretion, to terminate the Voting and Support Agreement following any amendment or modification to the Merger Agreement that reduces the amount of the Merger Consideration (as defined in the Merger Agreement), changes the form of any of the Merger Consideration or otherwise modifies the terms of the Merger Agreement in a manner that is materially adverse to the Issuer's shareholders as a whole.

The foregoing description of the Voting and Support Agreement does not purport to be complete and is qualified in its entirety by reference to the full text of the Form of Voting and Support Agreement, which is attached hereto as Exhibit 99.13 and is incorporated herein by reference.

**Item 5. Interest in Securities of the Issuer**

- (a) See rows (11) and (13) of the cover pages to this Schedule 13D for the aggregate number of shares of Common Stock and percentages of the shares of Common Stock beneficially owned by each Reporting Person. The percentages used in this Schedule 13D are calculated based upon 52,432,129 shares of Common Stock outstanding as of June 19, 2025, as disclosed in the Merger Agreement.

**Item 6. Contracts, Arrangements, Understandings or Relationships With Respect to Securities of the Issuer**

Item 4 of this Amendment No. 15 is incorporated herein by reference.

**Item 7. Material to be Filed as Exhibits.**

Exhibit 99.13: Form of Voting and Support Agreement, dated as of June 23, 2025 (incorporated by reference to Exhibit 10.2 to the Issuer's Current Report on Form 8-K filed on June 24, 2025).

**SIGNATURE**

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

**Harbert Discovery Fund, LP**

**Signature:** By: Harbert Discovery Fund GP, LLC, its General Partner,  
By: Harbert Management Corp., its Managing Member,  
By: /s/ John McCullough  
**Name/Title:** John McCullough / Executive Vice President and  
General Counsel  
**Date:** 06/25/2025

**Harbert Discovery Fund GP, LLC**

**Signature:** By: Harbert Management Corp., its Managing Member,  
By: /s/ John McCullough  
**Name/Title:** John McCullough / Executive Vice President and  
General Counsel  
**Date:** 06/25/2025

**Harbert Discovery Co-Investment Fund I, LP**

**Signature:** By: Harbert Discovery Co-Investment Fund I GP, LLC, its  
General Partner, By: Harbert Management Corp., its  
Managing Member By: /s/ John McCullough  
**Name/Title:** John McCullough / Executive Vice President and  
General Counsel  
**Date:** 06/25/2025

**Harbert Discovery Co-Investment Fund I GP,  
LLC**

**Signature:** By: Harbert Management Corp., its Managing Member,  
By: /s/ John McCullough  
**Name/Title:** John McCullough / Executive Vice President and  
General Counsel  
**Date:** 06/25/2025

**Harbert Fund Advisors, Inc.**

**Signature:** By: /s/ John McCullough  
**Name/Title:** John McCullough / Executive Vice President and  
General Counsel  
**Date:** 06/25/2025

**Harbert Management Corporation**

**Signature:** By: /s/ John McCullough  
**Name/Title:** John McCullough / Executive Vice President and  
General Counsel  
**Date:** 06/25/2025

Jack Bryant

**Signature:** By: /s/ Jack Bryant  
**Name/Title:** Jack Bryant  
**Date:** 06/25/2025

Kenan Lucas

**Signature:** By: /s/ Kenan Lucas  
**Name/Title:** Kenan Lucas  
**Date:** 06/25/2025

Raymond Harbert

**Signature:** By: /s/ Raymond Harbert  
**Name/Title:** Raymond Harbert  
**Date:** 06/25/2025