

FORM 4

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

OMB APPROVAL	
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STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

(Print or Type Responses)

1. Name and Address of Reporting Person* THALENFELD BARBARA E			2. Issuer Name and Ticker or Trading Symbol ENZO BIOCHEM INC [ENZ]			5. Relationship of Reporting Person(s) to Issuer (Check all applicable) Director _____ 10% Owner _____ <input checked="" type="checkbox"/> Officer (give title below) _____ Other (specify below) _____ VP, Corporate Development		
(Last)	(First)	(Middle)	3. Date of Earliest Transaction (Month/Day/Year) 07/06/2006					
C/O ENZO BIOCHEM, INC., 527 MADISON AVENUE			4. If Amendment, Date Original Filed(Month/Day/Year)			6. Individual or Joint/Group Filing(Check Applicable Line) <input checked="" type="checkbox"/> Form filed by One Reporting Person <input type="checkbox"/> Form filed by More than One Reporting Person		
(Street)								
NEW YORK, NY 10022								
(City)			(State)			(Zip)		

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)		4. Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			
Common Stock, par value \$0.01 per share	07/06/2006		M		1,803 (1)	A	(1)	74,343 (2)	D	

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

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Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Underlying Securities (Instr. 3 and 4)	8. Price of Derivative Security (Instr. 5)	9. Number of Derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form of Derivative Security: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)	
				Code	V	(A)	(D)	Date Exercisable	Expiration Date						Title
Employee Stock Option	(1)	07/06/2006		M		6,700		07/30/1996	07/30/2006	Common Stock, par value \$0.01 per share	6,700	\$ 0	56,704 (2)	D	

Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
THALENFELD BARBARA E C/O ENZO BIOCHEM, INC. 527 MADISON AVENUE NEW YORK, NY 10022			VP, Corporate Development	

Signatures

/s/ Barbara E. Thalenfeld	10/19/2006
<small>**Signature of Reporting Person</small>	<small>Date</small>

Explanation of Responses:

* If the form is filed by more than one reporting person, *see* Instruction 4(b)(v).

** Intentional misstatements or omissions of facts constitute Federal Criminal Violations. *See* 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

- (1) The Reporting Person exercised a stock option to purchase 6,700 shares of Common Stock and paid the exercise price thereof by the surrender of 4,897 shares of Common Stock, for a net gain in outstanding shares of Common Stock of 1,803 shares.
- (2) As of the date hereof, the Reporting Person directly beneficially owned 16,620 shares of Common Stock, 1,019 shares of Common Stock in Enzo Biochem's 401(K) Plan, and 56,704 options to purchase Common Stock, par value \$0.01 per share, which are currently exercisable.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, *see* Instruction 6 for procedure.

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