

INFORMATION REQUIRED IN PROXY STATEMENT

SCHEDULE 14A INFORMATION

PROXY STATEMENT PURSUANT TO SECTION 14(A) OF THE SECURITIES EXCHANGE ACT OF 1934 (AMENDMENT NO.)

Filed by the registrant /X/

Filed by a party other than the registrant / /

Check the appropriate box:

/ / Preliminary proxy statement

/X/ Definitive proxy statement

/ / Definitive additional materials

/ / Soliciting material pursuant to Rule 14a-11(c) or Rule 14a-12

ENZO BIOCHEM, INC.
(Name of Registrant as Specified in Its Charter)

(Name of Persons(s) Filing Proxy Statement, if other than Registrant)

Payment of filing fee (Check the appropriate box):

/X/ \$125 per Exchange Act Rule 0-11(c)(1)(ii), 14a-6(i)(1), or Rule 14a-6(i)(2) or Item 22(a)(2) of Schedule 14A.

/ / \$500 per each party to the controversy pursuant to Exchange Act Rule 14a-6(i)(3).

/ / Fee computed on table below per Exchange Act Rules 14a-6(i)(4) and 0-11.

(1) Title of each class of securities to which transaction applies:

(2) Aggregate number of securities to which transaction applies:

(3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11:

(4) Proposed maximum aggregate value of transaction:

(5) Total fee paid:

/ / Fee paid previously with preliminary materials:

/ / Check box if any part of the fee is offset as provided by Exchange Act Rule 0-11(a)(2) and identify the filing for which the offsetting fee was paid previously. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing.

(1) Amount previously paid:

(2) Form, Schedule or Registration Statement No.:

(3) Filing Party:

(4) Date Filed:

FARMINGDALE, NEW YORK 11735
(516) 755-5500

NOTICE OF ANNUAL MEETING OF SHAREHOLDERS
TO BE HELD JANUARY 14, 1997

To the Shareholders of Enzo Biochem, Inc.:

NOTICE IS HEREBY GIVEN that the Annual Meeting of Shareholders of Enzo Biochem, Inc. (the "Company") will be held at The American Stock Exchange, 86 Trinity Place, 13th Floor Board Room, New York, New York 10006-1881, on January 14, 1997, at 10:30 A.M. local time, for the following purposes:

1. To elect Elazar Rabbani, Ph.D. and John B. Sias as Class III directors for a term of three years or until their successors are elected and qualified; and
2. To ratify the appointment of Ernst & Young LLP as the independent auditors for the Company for the year ending July 31, 1997.

The close of business on November 25, 1996 has been fixed as the record date for the determination of shareholders entitled to notice of and to vote at the meeting. The transfer books of the Company will not be closed.

All shareholders are cordially invited to attend the meeting. Whether or not you expect to attend, you are requested to sign, date and return the enclosed proxy promptly. Shareholders who execute proxies retain the right to revoke them at any time prior to the voting thereof by filing written notice of such revocation with the Secretary of the Company, by submission of a duly executed proxy bearing a later date or by voting in person at the Annual Meeting of Shareholders. Attendance at the Annual Meeting will not in and of itself constitute revocation of a proxy. Any written notice revoking a proxy should be sent to Secretary, Enzo Biochem, Inc., 60 Executive Boulevard, Farmingdale, New York 11735. A return envelope which requires no postage if mailed in the United States is enclosed for your convenience.

By Order of the Board of Directors,

Shahram K. Rabbani, SECRETARY

Farmingdale, New York
November 27, 1996

ENZO BIOCHEM, INC.
60 EXECUTIVE BOULEVARD
FARMINGDALE, NEW YORK 11735
(516) 755-5500

PROXY STATEMENT

ANNUAL MEETING OF SHAREHOLDERS
TO BE HELD JANUARY 14, 1997

This Proxy Statement is furnished in connection with the solicitation, by the Board of Directors of Enzo Biochem, Inc. (the "Company"), of proxies in the enclosed form for the Annual Meeting of Shareholders to be held at The American Stock Exchange, 86 Trinity Place, 13th Floor Board Room, New York, New York 10006-1881, on January 14, 1997, at 10:30 A.M. local time, and for any adjournment or adjournments thereof, for the purposes set forth in the foregoing Notice of Annual Meeting of Shareholders. The persons named in the enclosed proxy form will vote the shares for which they are appointed in accordance with the directions of the shareholders appointing them. In the absence of such directions, such shares will be voted FOR proposals 1 and 2 listed below and, in their best judgment, will be voted on any other matters as may come before the meeting. Any shareholder giving such a proxy has the power to revoke the same at any time before it is voted by filing written notice of such revocation with the Secretary of the Company, by submission of a duly executed proxy bearing a later date or by voting in person at the Annual Meeting of Shareholders. Attendance at the Annual Meeting will not in and of itself constitute revocation of a proxy. Any written notice revoking a proxy should be sent to Secretary, Enzo Biochem, Inc., 60 Executive Boulevard, Farmingdale, New York 11735. A return envelope which requires no postage if mailed in the United States is enclosed for your convenience.

The principal executive offices of the Company are located at 60 Executive Boulevard, Farmingdale, New York 11735. The approximate date on which this Proxy Statement and the accompanying form of proxy will first be sent or given to the Company's shareholders is November 27, 1996.

VOTING SECURITIES

Only holders of shares of Common Stock, par value \$.01 per share ("Shares"), of record as of the close of business on November 25, 1996 are entitled to vote at the meeting. On the record date there were issued and outstanding 23,075,601 Shares. Each outstanding Share is entitled to one vote upon all matters to be acted upon at the meeting. The holders of a majority of the outstanding Shares shall constitute a quorum.

The election of each nominee for director requires a plurality of the votes cast. An affirmative vote of the majority of the votes cast is required for approval of all other matters submitted to the shareholders. Abstentions and broker non-votes are not counted as votes cast on any matter to which they relate and will have no effect on the outcome of the vote. A broker non-vote occurs when a broker or other nominee does not have discretionary authority and has not received instructions with respect to a particular proposal. Proxy ballots are received and tabulated by the Company's transfer agent and certified by the inspector of election.

STOCK OWNERSHIP OF PRINCIPAL SHAREHOLDERS AND MANAGEMENT

Set forth below is information concerning stock ownership of all persons known by the Company to own beneficially 5% or more of the Shares, the executive officers named under "Executive Compensation," all directors, and all directors and executive officers of the Company as a group based upon the number of outstanding Shares as of the close of business on November 25, 1996. For the purposes of this Proxy Statement, beneficial ownership is defined in accordance with the rules of the Securities and Exchange Commission and generally means the power to vote or to dispose of the securities regardless of any economic interest therein.

<TABLE>
<CAPTION>

NAME AND ADDRESS OF BENEFICIAL OWNER	AMOUNT AND NATURE OF BENEFICIAL OWNERSHIP (1)	PERCENT OF CLASS
-----	-----	-----
<S>	<C>	<C>
Elazar Rabbani, Ph.D..... 60 Executive Boulevard Farmingdale, N.Y. 11735	1,556,517 (2)	6.7%
Shahram K. Rabbani..... 60 Executive Boulevard Farmingdale, N.Y. 11735	1,558,690 (2) (3)	6.7%
Barry W. Weiner..... 60 Executive Boulevard Farmingdale, N.Y. 11735	901,494 (4)	3.9%
J. Morton Davis..... c/o D.H. Blair Investment Banking Corp. 44 Wall Street New York, N.Y. 10005	1,746,539 (5)	7.6%
John B. Sias..... c/o Enzo Biochem, Inc. 60 Executive Boulevard Farmingdale, N.Y. 11735	67,151 (6)	.3%
John J. Delucca..... c/o Enzo Biochem, Inc. 60 Executive Boulevard Farmingdale, N.Y. 11735	4,134 (7)	.02%
Dean Engelhardt, Ph.D..... c/o Enzo Biochem, Inc. 60 Executive Boulevard Farmingdale, N.Y. 11735	175,768 (8)	.8%
Norman Kelker, Ph.D..... c/o Enzo Biochem, Inc. 60 Executive Boulevard Farmingdale, N.Y. 11735	123,488 (9)	.5%
All directors and executive officers as a group (10 persons).....	4,490,097 (10) (11)	18.7%

</TABLE>

(1) All Shares are beneficially owned and the sole investment and voting power

is held by the persons named, except as otherwise noted.

(2) Includes 664,808 Shares contributed by each of Elazar and Shahram K. Rabbani to a general partnership (the "Partnership") in which Dr. and Mr. Rabbani, and Barry W. Weiner and his wife are partners, and includes Shares issuable upon exercise of options to purchase 169,418 Shares granted to each of Elazar and Shahram K. Rabbani which are exercisable within 60 days. Does not include Shares issuable upon exercise of options to purchase 156,880 Shares granted to each of Elazar and Shahram K. Rabbani.

2

- (3) Includes 742 shares held in the name of Mr. Rabbani's son and 1,377 shares that Mr. Rabbani holds as custodian for certain of his nephews.
- (4) Includes 664,808 Shares contributed by Mr. and Mrs. Weiner to the Partnership. Includes Shares issuable upon exercise of options to purchase 236,686 Shares granted to Barry Weiner which are exercisable within 60 days. Does not include Shares issuable upon exercise of options to purchase 122,687 Shares granted to Mr. Weiner.
- (5) Includes (i) 1,174,456 Shares owned by D.H. Blair Investment Banking Corp. ("Blair Banking") of which Mr. Davis is Chairman of the Board and sole shareholder; (ii) 441,826 Shares owned by Engex, Inc., a closed-end investment company of which Mr. Davis is the Chairman of the Board; (iii) 86,378 Shares owned by Mr. Davis' wife, Rosalind Davidowitz; and (iv) 43,879 Shares owned by Rivkalex Corporation, a privately-held corporation owned by Rosalind Davidowitz. Does not include 53,912 Shares owned by Kinder Investments, L.P., a Delaware limited partnership whose limited partners include the children and grandchildren of Mr. Davis. Mr. Davis has expressly disclaimed beneficial ownership of all securities held by Rosalind Davidowitz, Rivkalex Corporation or Kinder Investments, L.P. for any purpose.
- (6) Includes Shares issuable upon exercise of options to purchase 34,903 Shares which are exercisable within 60 days. Does not include 20,278 Shares issuable upon exercise of options held by Mr. Sias which are not exercisable within 60 days.
- (7) Includes Shares issuable upon exercise of options to purchase 4,134 Shares which are exercisable within 60 days. Does not include 12,010 Shares issuable upon exercise of options held by Mr. Delucca which are not exercisable with 60 days.
- (8) Includes Shares issuable upon exercise of options to purchase 141,370 Shares which are exercisable within 60 days. Does not include 21,647 Shares issuable upon exercise of options held by Dr. Engelhardt which are not exercisable within 60 days.
- (9) Includes options to purchase 112,400 Shares which are exercisable within 60 days. Does not include 4,134 shares issuable upon exercise of options held by Dr. Kelker which are not exercisable within 60 days.
- (10) Includes Shares issuable upon exercise of options to purchase 906,845 Shares which are exercisable within 60 days. Does not include 551,472 Shares issuable upon exercise of options held by such individuals which are not exercisable within 60 days.
- (11) The total number of directors and executive officers includes three executive officers who were not named under "Executive Compensation".

3

EXECUTIVE OFFICERS

The executive officers of the Company are identified in the table below. Each executive officer of the Company serves at the pleasure of the Board of Directors.

<TABLE>
<CAPTION>

NAME	AGE	YEAR BECAME AN EXECUTIVE OFFICER	POSITION
<S>	<C>	<C>	<C>
Elazar Rabbani, Ph.D. Executive	52	1976	Chairman of the Board of Directors and Chief Officer
Shahram K. Rabbani	44	1976	Chief Operating Officer, Treasurer, Secretary and Director
Barry W. Weiner	46	1977	President and Director
Norman E. Kelker, Ph.D.	57	1981	Senior Vice President

Dean Engelhardt, Ph.D.	56	1981	Senior Vice President
Herbert B. Bass	48	1995	Vice President of Finance
Barbara E. Thalenfeld, Ph.D.	56	1995	Vice President, Corporate Development
David C. Goldberg	39	1995	Vice President, Business Development

PROPOSAL 1 ELECTION OF DIRECTORS

The Company has a classified Board of Directors who serve staggered three-year terms. At the Annual Meeting, two directors will be elected to hold office for a term of three years or until their successors are elected and qualified. The accompanying form of proxy will be voted for the election of the nominees listed below, to serve as directors, and who are currently directors of the Company, unless the proxy contains contrary instructions. Management has no reason to believe that the nominees will not be candidates or will be unable to serve as directors. However, in the event that the nominees should become unable or unwilling to serve as directors, the proxy will be voted for the election of such persons as shall be designated by the directors.

THE FOLLOWING IS INFORMATION REGARDING THE NOMINEES FOR ELECTION AS CLASS III DIRECTORS TO SERVE UNTIL THE 2000 ANNUAL MEETING:

NOMINEES
CLASS III: NEW TERM TO EXPIRE IN 2000

NAME	AGE	YEAR FIRST BECAME A DIRECTOR
Elazar Rabbani, Ph.D.	52	1976
John B. Sias	69	1982

THE BOARD OF DIRECTORS OF THE COMPANY RECOMMENDS A VOTE "FOR" THE ELECTION OF THE ABOVE-NAMED NOMINEES. PROXIES SOLICITED BY THE BOARD OF DIRECTORS WILL BE SO VOTED UNLESS SHAREHOLDERS SPECIFY IN THEIR PROXIES A CONTRARY CHOICE.

4

THE FOLLOWING IS INFORMATION REGARDING THE DIRECTORS WHO ARE CONTINUING IN OFFICE:

DIRECTORS CONTINUING IN OFFICE
CLASS I: TERM TO EXPIRE IN 1998

NAME	AGE	YEAR FIRST BECAME A DIRECTOR
Shahram K. Rabbani	44	1976

CLASS II: TERM TO EXPIRE IN 1999

Barry W. Weiner	46	1976
John J. Delucca	53	1982

BIOGRAPHICAL INFORMATION

ELAZAR RABBANI, Ph.D. (age 52) has served as Chairman of the Board of Directors and Chief Executive Officer of the Company since the Company's inception in 1976 and has served as the Company's President from its inception to November 1996. Dr. Rabbani received his B.A. degree from New York University in Chemistry and his Ph.D. degree in Biochemistry from Columbia University. He is a member of the American Society for Microbiology.

SHAHRAM K. RABBANI (age 44) has served as Chief Operating Officer and Secretary of the Company since November 1996, as Executive Vice President from September 1981 to November 1996 and as Vice President, Treasurer and Director since the Company's organization. Mr. Rabbani received a B.A. degree in Chemistry from Adelphi University.

BARRY W. WEINER (age 46) has served as President of the Company since November 1996 and as Director of the Company since its organization. Mr. Weiner has served as an Executive Vice President of the Company from September 1981 to November 1996, as a Vice President of the Company from the Company's organization to November 1996 and as Secretary of the Company from March 1980 to November 1996. He was employed by Colgate-Palmolive Company, New York, New York from August 1974 until March 1980, when he joined the Company on a full-time basis. Mr. Weiner received his B.S. degree in Economics from New York University

and an M.B.A. from Boston University.

JOHN J. DELUCCA (age 53) has been a Director of the Company since January 1982. Since October 1993, Mr. Delucca has been Senior Vice President and Treasurer of RJR Nabisco, Inc. From January 1992 until October 1993, he was the Chief Financial Officer and Managing Director of Hascoe Associates, Inc. From October 1, 1990 until January 1992, he served as President and Chief Financial Officer of The Lexington Group, Ltd. From September 1988 until September 1990, he had been Senior Vice President -- Finance of The Trump Group. From May 1986 until August 1988, he was Senior Vice President -- Finance at International Controls Corp. From February 1985 until May 1986, he was a Vice President and Treasurer of Textron, Inc. Prior to that he was a Vice President and Treasurer of the Avco Corporation, which was acquired by Textron.

JOHN B. SIAS (age 69) has been a Director of the Company since January 1982. Since April 1993, Mr. Sias has been President and Chief Executive Officer of Chronicle Publishing Company. From January 1986 until December 1992, Mr. Sias was President of ABC Television Network Division and Executive Vice President, Capital Cities/ABC, Inc. From 1977 until January 1986 he was the Executive Vice President, President of the Publishing Division (which includes Fairchild Publications) of Capital Cities Communications, Inc.

NORMAN E. KELKER, Ph.D. (age 57) has been a Vice President of the Company since September 1981. Effective January 1, 1989, he was promoted to Senior Vice President. From 1975 until he joined

5

the Company, Dr. Kelker was an Associate Professor in the Department of Microbiology of the New York University School of Medicine. He holds a Ph.D. from Michigan State University.

DEAN ENGELHARDT, Ph.D. (age 56) has been Vice President since September 1981. Effective January 1, 1989, he was promoted to Senior Vice President. Prior to joining the Company he was Associate Professor of Microbiology at Columbia University College of Physicians and Surgeons. He obtained his Ph.D. from Rockefeller University.

HERBERT B. BASS (age 48) is Vice President of Finance and has been with the Company since 1986. Prior to his position as Vice President of Finance, Mr. Bass was the Corporate Controller of the Company. From 1979 to 1986, Mr. Bass held various positions at Danziger & Friedman, Certified Public Accountants, the most recent of which was audit manager. For the preceding seven years he held various positions at Berenson & Berenson, C.P.A.'s. Mr. Bass holds a Bachelor degree in Business Administration from Baruch College.

BARBARA E. THALENFELD, Ph.D. (age 56) is Vice President of Corporate Development and has been with the Company since 1982. Prior to joining the Company, she held an HIH research fellowship at Columbia University. She received a Ph.D. from Hebrew University-Hadassah Medical Center and an MS from Yale University.

DAVID C. GOLDBERG (age 39) is Vice President of Business Development. Prior to joining the Company in 1985, he was employed at DuPont NEN Products. He received an MS from Rutgers University and an M.B.A. from New York University.

Dr. Elazar Rabbani and Shahram K. Rabbani are brothers and Barry W. Weiner is their brother-in-law.

MEETINGS OF THE BOARD

During the fiscal year ended July 31, 1996 there were three formal meetings of the Board of Directors, several actions by unanimous consent and several informal meetings. The Board of Directors has an Audit Committee and Stock Option Committee, each of which was organized in November 1982. During the fiscal year ended July 31, 1996, there were several informal meetings of the Audit Committee and the Stock Option Committee. Each director of the Company attended at least 75% of all Board meetings during the fiscal year ended July 31, 1996.

COMMITTEES OF THE BOARD OF DIRECTORS

The Audit Committee is authorized to review proposals of the Company's auditors regarding annual audits, recommend the engagement or discharge of the auditors, review recommendations of such auditors concerning accounting principles and the adequacy of internal controls and accounting procedures and practices, to review the scope of the annual audit, to approve or disapprove each professional service or type of service other than standard auditing services to be provided by the auditors, and to review and discuss the audited financial statements with the auditors. Its members are Shahram K. Rabbani, John B. Sias and John J. Delucca.

The Stock Option Committee has the plenary authority in its discretion to determine the purchase price of the Common Stock issuable upon the exercise of each option, to determine the employees to whom, and the time or times at which options shall be granted and the number of shares to be issuable upon the

exercise of each option, to interpret the plans, to prescribe, amend and rescind rules and regulations relating to them, to determine the term and provisions of the respective option agreements and to make all other determinations deemed necessary or advisable for the administration of the plans. Its members are Messrs. Sias and Delucca.

6

The Company does not have a formal Compensation Committee, Nominating Committee or Executive Committee of the Board of Directors.

SECTION 16(A) REPORTING UNDER THE SECURITIES EXCHANGE ACT OF 1934

Section 16(a) of the Securities Exchange Act of 1934, as amended, requires the Company's executive officers, directors and persons who beneficially own more than 10% of a registered class of the Company's equity securities to file with the Securities and Exchange Commission initial reports of ownership and reports of changes in ownership of common stock and other equity securities of the Company. Such executive officers, directors and greater than 10% beneficial owners are required by S.E.C. regulation to furnish the Company with copies of all Section 16(a) forms filed by such reporting persons.

Based solely on the Company's review of such forms furnished to the Company and written representations from certain reporting persons, the Company believes that all filing requirements applicable to the Company's executive officers, directors and greater than 10% beneficial owners were complied with, except that each of Dean Engelhardt, Norman Kelker, John Sias and John Delucca inadvertently failed to timely file a Form 5 for the year ending July 31, 1995 and Barbara Thalenfeld and David Goldberg inadvertently failed to timely file a Form 5 for the year ending July 31, 1996, relating solely to the acquisition and/or exercise of Company stock options.

7

EXECUTIVE COMPENSATION

In 1992, the United States Securities and Exchange Commission amended the proxy disclosure requirements covering compensation of executive officers. These requirements call for a new format that includes a report by the Board of Directors on the Company's policies for making executive compensation decisions, including the factors and criteria on which the chief executive officer's pay is based, a series of tables covering annual and long-term compensation and a performance graph comparing the Company's five-year cumulative total shareholder return with the cumulative return of the American Stock Exchange Market Value Index and another selected index.

The following summary compensation table sets forth the aggregate compensation paid by the Company to its chief executive officer and to the Company's four other most highly compensated executive officers whose annual compensation exceeded \$100,000 for the fiscal year ended July 31, 1996 (collectively, the "Named Executive Officers") for services during the fiscal years ended July 31, 1996, 1995 and 1994 (giving effect to the Company's 5% stock dividend effective on October 8, 1996):

SUMMARY COMPENSATION TABLE

<TABLE>

<CAPTION>

NAME AND PRINCIPAL POSITION	YEAR	COMPENSATION		LONG TERM
		ANNUAL SALARY (\$)	BONUS (\$)	COMPENSATION AWARDS OPTIONS/SARS (#)
-----	----	-----	-----	-----
<S>	<C>	<C>	<C>	<C>
Elazar Rabbani, Ph.D., Chairman of the Board of Directors and CEO	1996	250,228	120,000	52,500
	1995	240,621	120,000	--
	1994	224,400	60,000	233,762
Shahram K. Rabbani, Chief Operating Officer, Treasurer, Secretary and Director	1996	207,636	100,000	52,500
	1995	199,600	100,000	--
	1994	186,585	50,000	233,762
Barry W. Weiner, President and Director	1996	207,636	100,000	52,500
	1995	199,600	100,000	--
	1994	186,585	50,000	165,375
Dean Engelhardt, Ph.D., Senior Vice President	1996	145,949	20,000	15,750
	1995	135,770	20,000	5,513
	1994	125,766	15,000	11,025
Norman Kelker, Ph.D., Senior Vice President	1996	139,996	15,000	--
	1995	135,770	15,000	5,513
	1994	125,766	15,000	--

</TABLE>

The Company does not have a Compensation Committee or other board committee

performing equivalent functions. During the fiscal year ended July 31, 1996, deliberations concerning executive officer compensation were made by the Company's Board of Directors, which board includes Elazar Rabbani, Ph.D. (Chairman of the Board and Chief Executive Officer of the Company), Shahram K. Rabbani (Chief Operating Officer, Secretary and Treasurer of the Company), Barry W. Weiner (President of the Company), John J. Delucca and John B. Sias.

OPTION GRANTS IN FISCAL 1996

The following table sets forth, as to the Named Executive Officers, certain information relating to stock options granted during the fiscal year ended July 31, 1996 (giving effect to the Company's 5% stock dividend effective on October 8, 1996).

<TABLE>
<CAPTION>

	NUMBER OF SECURITIES UNDERLYING OPTIONS GRANTED (#)	INDIVIDUAL GRANTS			POTENTIAL REALIZABLE VALUE AT ASSUMED ANNUAL RATES OF STOCK PRICE APPRECIATION FOR OPTION TERM(1)	
		% OF TOTAL OPTIONS GRANTED TO EMPLOYEES IN FISCAL YEAR	EXERCISE OR BASE PRICE (\$/SH)	EXPIRATION DATE	5% (\$)	10% (\$)
<S>	<C>	<C>	<C>	<C>	<C>	<C>
Elazar Rabbani, Ph.D.....	52,500	14.68	14.05	2005	463,888	1,175,584
Shahram K. Rabbani.....	52,500	14.68	14.05	2005	463,888	1,175,584
Barry W. Weiner.....	52,500	14.68	14.05	2005	463,888	1,175,584
Dean Engelhardt, Ph.D.....	15,750	4.41	14.05	2005	90,800	230,105
Norman Kelker, Ph.D.....	--	--	--	--	--	--

</TABLE>

- - - - -

(1) The 5% and the 10% assumed rates of appreciation are mandated by the rules of the Securities and Exchange Commission and do not represent the Corporation's estimate or projection of the future Common Stock price. Of course, the actual realizable value of the stock options will depend on the appreciation of the stock price and the executive officer's continued employment with the Corporation through the applicable vesting periods of the stock options.

AGGREGATED OPTION EXERCISES IN LAST FISCAL YEAR AND FISCAL YEAR-END OPTION VALUES

The following table sets forth certain information with respect to stock option exercises by the Named Executive Officers during the fiscal year ended July 31, 1996 and the value of unexercised options held by them at fiscal year-end (giving effect to the Company's 5% stock dividend effective on October 8, 1996).

<TABLE>
<CAPTION>

UNEXERCISED OPTIONS AT END (\$)(1)	SHARES ACQUIRED ON EXERCISE (#)	VALUE REALIZED(\$)	NUMBER OF UNEXERCISED OPTIONS AT FISCAL YEAR END#		VALUE OF IN-THE-MONEY FISCAL YEAR
			EXERCISABLE	UNEXERCISABLE	EXERCISEABLE
<S>	<C>	<C>	<C>	<C>	<C>
Elazar Rabbani, Ph.D.....	539,179	--	169,418	156,880	959,974
Shahram K. Rabbani.....	539,179	--	169,418	156,880	959,974
Barry W. Weiner.....	381,444	--	236,686	122,687	1,875,658
Dean Engelhardt, Ph.D.....	45,439	--	141,370	21,647	1,504,432
Norman Kelker, Ph.D.....	20,010	--	112,400	4,134	1,239,919

</TABLE>

- - - - -

(1) Market value of the underlying securities at fiscal year end minus the exercise price

EMPLOYMENT AGREEMENTS

Each of Mr. Barry Weiner, Mr. Shahram Rabbani and Dr. Elazar Rabbani (the "Executives") are parties to an employment agreement effective May 4, 1994 (the "Employment Agreement(s)") with the Company. Pursuant to the terms of their respective Employment Agreements, Messrs. Weiner and Rabbani and Dr. Rabbani are compensated at a base annual salary of \$210,912, \$210,912 and \$254,176, respectively. Each Executive will also receive an annual bonus, the amount of which shall be determined by the Board of Directors in their discretion. Each Employment Agreement provides that, in the event of termination of the Executive for good reason or without cause (or, additionally, in the case of Dr. Rabbani,

9

a nonrenewal), as such terms are defined therein, each Executive shall be entitled to receive: (a) a lump sum in an amount equal to three (3) years of the Executive's base annual salary; (b) a lump sum in an amount equal to the annual bonus paid by the Company to the Executive for the last fiscal year of the Company ending prior to the date of termination multiplied by three (3); (c) insurance coverage for the Executive and his dependents, at the same level and at the same charges to the Executive as immediately prior to his termination, for a period of three (3) years following his termination from the Company; (d) all accrued obligations, as defined therein; and (e) with respect to each incentive pay plan (other than stock option or other equity plans) of the Company in which the Executive participated at the time of termination, an amount equal to the amount the Executive would have earned if he had continued employment for three (3) additional years. If the Executive is terminated by reason of his disability, he shall be entitled to receive, for three (3) years after such termination, his base annual salary less any amounts received under a long term disability plan. If the Executive is terminated by reason of his death, his legal representatives shall receive the balance of any remuneration due him. The term of each of the Executive's Employment Agreement is three (3) years from the date of execution of the Employment Agreement with a renewal period of two (2) years, such renewal to occur automatically unless either the Company or the Executive terminates the Employment Agreement upon six (6) months written notice.

COMPENSATION OF DIRECTORS

Each director who is not an officer or an employee of the Company (an "Outside Director") received \$12,000 in compensation for the fiscal year ended July 31, 1996. Under the 1994 Stock Option Plan, each Outside Director automatically receives, on the day immediately following the date of each annual meeting of stockholders and as long as such director is a member of the Board of Directors, an option ("Director's Option") to purchase 7,500 shares of Common Stock. The exercise price of each share subject to a Director's Option shall be equal to the fair market value of the Common Stock on the date of grant. Director's Options are exercisable in two equal annual installments commencing on the date the option is granted and expires 10 years after the date of grant or 90 days after the termination of the director's service on the Board. During fiscal year 1996, each Outside Director received an option to purchase 7,500 shares of Common Stock.

BOARD OF DIRECTORS COMPENSATION REPORT

The Company strives to apply a uniform philosophy to compensation for all of its employees, including the members of its senior management. This philosophy is based on the premise that the achievements of the Company result from the combined and coordinated efforts of all employees working toward common goals and objectives.

The goals of the Company's compensation program are to align remuneration with business objectives and performance, and to enable the Company to retain and competitively reward executive officers who contribute to the long-term success of the Company. The Company's compensation program for executive officers is based on the following principles, which are applicable to compensation decisions for all employees of the Company. The Company attempts to pay its executive officers competitively in order that it will be able to retain the most capable people in the industry. Information with respect to levels of compensation being paid by comparable companies is obtained from various publications and surveys.

During the last fiscal year, the compensation of executive officers consisted principally of salary and bonus and the Company granted stock options to its executive officers, additional grants of which may be made in the future. The cash portion of such program includes base salary and annual bonuses, which are awarded in the discretion of the Board of Directors. Salary levels have been set based upon historical levels, amounts being paid by comparable companies and performance. The Company's equity-based compensation consists of the award of discretionary stock options, which are designed to provide additional incentives to executive officers to maximize shareholder value. Through the use of extended vesting periods, the option program is designed to encourage executive officers

to remain in the employ of

10

the Company. In addition, because the exercise prices of such options are typically set at or above the fair market value of the stock on the date the option is granted, executive officers can only benefit from such options if the trading price of the Company's shares increases, thus aligning their financial interests directly with those of the shareholders.

401(K) PLAN

The Company has adopted a salary reduction profit sharing plan which is generally available to employees of the Company and any subsidiary of the Company. Officers and directors who are employees of the Company participate in the Plan on the same basis as other employees.

The Plan permits voluntary contributions by employees in varying amounts up to 15% of annual earnings (not to exceed the maximum allowable in any calendar year which is \$9,500 for 1996). Employee contributions are made by salary reduction under Section 401(k) of the Internal Revenue Code of 1986 and are excluded from taxable income of the employee. The Company may also contribute additional discretionary amounts as it may determine.

All employees of the Company who are twenty-one (21) years or older and have been employed by the Company for a minimum of six (6) months are eligible to participate in the Plan. Employees who have more than 500 hours of service per service year, but less than 1,000 hours per service year, are still considered members of the Plan, but contribution allocations and vesting will not increase during such time.

A participant's account is distributed to him upon retirement or termination of employment for any reason and in certain other limited situations. The amount of the Plan allocation attributable to the Company's discretionary contributions will vest in accordance with a schedule. To date, the Company has made no discretionary contributions to the Plan.

1994 STOCK OPTION PLAN

On November 8, 1994, the Board of Directors of the Company approved the adoption of the 1994 Stock Option Plan (the "1994 Plan") which provides for the awarding of the Company's Common Stock to selected key employees and directors of the Company and on January 18, 1995, the Company's shareholders approved the 1994 Plan. The 1994 Plan authorizes the awarding of up to 950,000 shares of the Company's Common Stock in the aggregate. The awards under the 1994 Plan are subject to restrictions on transferability, are forfeitable in certain circumstances and are exercisable at such time or times and during such period as shall be set forth in the option agreement evidencing such option. During the fiscal year ended July 31, 1996, 340,500 shares of the Company's Common Stock were awarded under the 1994 Plan.

INSURANCE FOR INDEMNIFICATION OF DIRECTORS AND OFFICERS

The Company has in effect, with Chubb Insurance Group under a policy effective January 20, 1996, and expiring on January 21, 1997, insurance covering all of its directors and officers and certain other employees of the Company against certain liabilities and reimbursing the Company for obligations which it incurs as a result of its indemnification of such directors, officers and employees. Such insurance has been obtained in accordance with the provisions of Section 726 of the Business Corporation Law of the State of New York. The annual premium is \$128,600.

CERTAIN RELATIONSHIP AND RELATED TRANSACTIONS

Enzo Clinical Labs, Inc. ("Enzolabs"), a subsidiary of the Company, leases a facility located in Farmingdale, New York from Pari Management Corporation ("Pari"). Pari is owned equally by Elazar Rabbani, Ph.D., Shahram Rabbani and Barry Weiner and his wife, the officers and directors of Pari. The lease which commenced on December 20, 1989 and terminates on November 30, 2004 provides for a

11

minimum net annual rent of \$515,000 through December 31, 1996 and \$818,250 for the period beginning January 1, 1997, subject to annual cost of living adjustments. During fiscal 1996, Enzolabs paid \$771,372 (including \$115,992 in real estate taxes) to Pari with respect to such facility. The Company, which has guaranteed Enzolabs' obligations to Pari under the lease, believes that the lease terms are as favorable to the Company as would be available from an unaffiliated party.

This report has been provided by the Board of Directors of the Company.

Elazar Rabbani, Ph.D.
Shahram K. Rabbani
Barry W. Weiner
John J. Delucca

The compensation report shall not be deemed to be incorporated by reference in any filing by the Company under the Securities Act of 1933 or the Securities Exchange Act of 1934, except to the extent the Company specifically incorporates such report.

PERFORMANCE GRAPH

The graph below compares the five-year cumulative shareholder total return based upon an initial \$100 investment (assuming the reinvestment of dividends) for Enzo Biochem, Inc. Shares with the comparable return for the American Stock Exchange Market Value Index and two peer issuer indexes selected on an industry basis. The two peer group indexes include: (i) 64 biotechnology companies engaged in the research and development of diagnostic substances and (ii) 34 companies engaged in the medical laboratories business. All of the indexes include only companies whose common stock has been registered under Section 12 of the Securities Exchange Act of 1934 for at least the time frame set forth in the graph.

The total shareholder returns depicted in the graph are not necessarily indicative of future performance. The Performance Graph and related disclosure shall not be deemed to be incorporated by reference in any filing by the Company under the Securities Act of 1933 or the Securities Exchange Act of 1934, except to the extent that the Company specifically incorporates the graph and such disclosure by reference.

COMPARISON OF 5-YEAR CUMULATIVE TOTAL RETURN OF COMPANY, PEER GROUPS AND BROAD MARKET

COMPANY	1991	1992	1993	1994	1995	1996
	----	-----	----	----	----	----
ENZO BIOCHEM INC.	100	672.73	1,418.18	1,381.82	2,578.30	2,215.43
INDUSTRY INDEX	100	100.13	86.44	91.62	95.63	71.26
BROAD MARKET	100	107.85	117.77	120.70	146.38	149.82

ASSUMES \$100 INVESTED ON AUG. 1, 1991
ASSUMES DIVIDEND REINVESTED
FISCAL YEAR ENDED JULY 31, 1996

12

PROPOSAL 2

APPROVAL OF INDEPENDENT AUDITORS

The Board of Directors has appointed Ernst & Young LLP, as independent auditors, to audit the accounts of the Company for the fiscal year ending July 31, 1997. The Board of Directors approved the reappointment of Ernst & Young LLP (the firm resulting from the merger of Ernst & Whinney and Arthur Young & Company, which has been engaged as the Company's independent auditors since 1983). Ernst & Young LLP has advised the Company that neither the firm nor any of its members or associates has any direct financial interest in the Company or any of its affiliates other than as auditors. Although the selection and appointment of independent auditors is not required to be submitted to a vote of shareholders, the Directors deem it desirable to obtain the shareholders' ratification and approval of this appointment.

Representatives of Ernst & Young LLP are expected to be present at the Annual Meeting with the opportunity to make a statement if they desire to do so and are expected to be available to respond to appropriate questions.

THE BOARD OF DIRECTORS RECOMMENDS A VOTE "FOR" PROPOSAL 2 RELATING TO THE RATIFICATION OF THE APPOINTMENT OF THE AUDITORS. PROXIES SOLICITED BY THE BOARD OF DIRECTORS WILL BE SO VOTED UNLESS SHAREHOLDERS SPECIFY IN THEIR PROXIES A CONTRARY CHOICE.

GENERAL

The Management of the Company does not know of any matters other than those stated in this Proxy Statement which are to be presented for action at the meeting. If any other matters should properly come before the meeting, it is intended that proxies in the accompanying form will be voted on any such matters in accordance with the judgment of the persons voting such proxies. Discretionary authority to vote on such matters is conferred by such proxies upon the persons voting them.

The Company will bear the cost of preparing, assembling and mailing the Proxy, Proxy Statement and other material which may be sent to the shareholders in connection with this solicitation. In addition to the solicitation of proxies by use of the mails, officers and regular employees may solicit the return of proxies. The Company may reimburse persons holding stock in their names or in the names of other nominees for their expense in sending proxies and proxy material to principals. In addition, Continental Stock Transfer & Trust Company, 2 Broadway, New York, New York 10004, the Company's transfer agent, has been engaged to solicit proxies on behalf of the Company for a fee, excluding

expenses, of approximately \$3,750. Proxies may be solicited by mail, personal interview, telephone and telegraph.

THE COMPANY WILL PROVIDE WITHOUT CHARGE TO EACH PERSON BEING SOLICITED BY THIS PROXY STATEMENT, UPON THE WRITTEN REQUEST OF ANY SUCH PERSON, A COPY OF THE ANNUAL REPORT OF THE COMPANY ON FORM 10-K FOR THE YEAR ENDED JULY 31, 1996 (AS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION) INCLUDING THE FINANCIAL STATEMENTS AND THE SCHEDULES THERETO. ALL SUCH REQUESTS SHOULD BE DIRECTED TO SHAHRAM K. RABBANI, SECRETARY, ENZO BIOCHEM, INC., 60 EXECUTIVE BOULEVARD, FARMINGDALE, NEW YORK 11735.

All proposals of shareholders intended to be included in the Proxy Statement to be presented at the next Annual Meeting of Shareholders must be received at the Company's executive office in Farmingdale, New York, no later than July 30, 1997.

By Order of the Board of Directors
Shahram K. Rabbani, SECRETARY

Dated: November 27, 1996

13

PROXY

ENZO BIOCHEM, INC.
60 EXECUTIVE BOULEVARD, FARMINGDALE, NEW YORK 11735
THIS PROXY IS SOLICITED ON BEHALF OF THE BOARD OF DIRECTORS

The undersigned hereby appoints Shahram K.Rabbani and Barry W. Weiner as Proxies, each with the power to appoint his substitute, and hereby authorizes them to represent and to vote, as designated below, all the shares of the Common Stock of Enzo Biochem, Inc. held of record by the undersigned on November 25, 1996, at the Annual Meeting of Shareholders to be held on January 14, 1997 or any adjournment thereof.

<TABLE>
<S> <C> <C>
1. Election of Elazar Rabbani, Ph.D. and John B. Sias as Class III Directors

FOR the nominees listed above / / WITHHOLDING AUTHORITY / /
(EXCEPT AS MARKED TO THE CONTRARY
BELOW)

(INSTRUCTION: To withhold authority to vote for any individual nominee, print that nominee's name on the line provided below.)

<CAPTION>
1.
<S> <C>
</TABLE>

(TO BE DATED AND SIGNED ON THE OTHER SIDE)

<TABLE>
<S> <C>
2. To ratify the appointment of Ernst & Young LLP as the independent auditors for the Company for the fiscal year ending July 31, 1997.

FOR / / AGAINST / / ABSTAIN / /

<TABLE>
<S> <C>
3. In their discretion, the Proxies are authorized to vote upon such other business as may properly come before the meeting. This proxy when properly executed will be voted in the manner directed herein by the undersigned shareholder. If no direction is made, this proxy will be voted for Proposals 1 and 2. Please sign exactly as name appears below. When shares are held by joint tenants, both should sign.

PLEASE SIGN EXACTLY AS NAME APPEARS BELOW. WHEN SHARES ARE HELD BY JOINT TENANTS, BOTH SHOULD SIGN.

Dated: _____, 199

Signature

Signature if held jointly

(When signing as attorney, as executor, as administrator, trustee or guardian, please give full title as such. If a corporation, please sign in full corporate name by President or other authorized officer. If a partnership, please sign in partnership name by authorized person.)