

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

AMENDMENT NO. 1 TO
FORM S-3
REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

ENZO BIOCHEM, INC.
(Exact name of Registrant as specified in its charter)

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

13-2866202
(I.R.S. Employer Identification No.)

60 Executive Boulevard, Farmingdale, New York 11735 (516) 755-5500
(Address, including zip code, and telephone number, including area code,
of registrants's principal executive offices)

ELAZAR RABBANI, Ph.D., Chairman & CEO
Enzo Biochem, Inc.
60 Executive Boulevard
Farmingdale, New York 11735
(516) 755-5500
(Name, address, including zip code, and telephone number, including area code,
of agent for service)

Copy to:

ROBERT H. COHEN, ESQ.
Bryan Cave LLP
245 Park Avenue
New York, New York 10167-0034
(212) 692-1800

Approximate date of commencement of proposed sale to the public:

From time to time after this registration statement becomes effective.

If any of the securities being registered on this form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

The Registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the registration statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

<TABLE>

CALCULATION OF REGISTRATION FEE

<CAPTION>

	Proposed Maximum	Proposed Maximum
Amount of Title of Shares to be Registered Registration Fee	Amount to be Registered Offering Price Per Share (1)	Aggregate Offering Price
-	-	-
<C>	<C>	<C>
<C>	<C>	<C>

Common Stock, par value \$.01
\$2,271.93 (2)

416,521

\$18.00

\$7,497,378

<FN>

(1) Estimated solely for the purpose of calculating the registration fee pursuant to Rules 457(c) and 457(g), based on the average

of the high and low prices of the Registrant's Common Stock on December 24, 1996, as reported by the American Stock Exchange.

(2) Of which \$1,868.95 was paid with the initial filing.

</TABLE>

The Registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the registration statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

PROSPECTUS

416,521 Shares

ENZO BIOCHEM, INC.

Common Stock

This Prospectus relates to the offering by certain creditors (the "Creditors") of Enzo Biochem, Inc., a New York corporation ("Enzo" or the "Company"), of up to an aggregate of 416,521 shares (giving effect to the Company's 5% stock dividend paid on October 29, 1996 to holders of record on October 8, 1996) of Common Stock, par value \$.01 per share ("Common Stock"), of Enzo, which shares were issued to the Creditors in August, October and December 1996 in private transactions pursuant to Section 4(2) of the Securities Act of 1933, as amended (the "Act"), primarily in consideration of an aggregate of \$6,171,871 of indebtedness owed or to be owed by the Company to the Creditors. The Creditors are sometimes referred to herein as the "Selling Stockholders." The Company will not receive any proceeds from the sale of such shares of Common Stock by the Selling Stockholders, with the exception of certain proceeds the Company may receive in connection with the sale of the securities offered by the City of New York. The shares of Common Stock offered from time to time by the Selling Stockholders are hereinafter referred to as the "Shares." The Shares may be sold from time to time directly by the Selling Stockholders or by pledgees, donees, transferees or other successors in interest. Alternatively, the Shares may be offered from time to time by the Selling Stockholders to or through brokers or dealers who may act solely as agent, or may acquire shares as principal. The distribution of the Shares may be effected in one or more transactions that take place on the American Stock Exchange, including block trades, ordinary broker's transactions, privately negotiated transactions or through sales to one or more broker/dealers for resale of such securities as principals, at market prices prevailing at the time of sale, at prices related to such prevailing market prices or at negotiated prices. Usual and customary or specifically negotiated brokerage fees or commissions may be paid by these holders in connection with such sales. In connection with such sales, the Selling Stockholders and any participating brokers or dealers may be deemed "underwriters" as such term is defined in the Securities Act of 1933, as amended.

The Company will bear all expenses (other than underwriting discounts and selling commissions, state and local transfer taxes, and fees and expenses of counsel or other advisers to the Selling Stockholders) in connection with the registration of the Shares being offered by the Selling Stockholders.

AN INVESTMENT IN THE SHARES OFFERED HEREBY INVOLVES A HIGH DEGREE OF RISK.

SEE "RISK FACTORS" FOR A DISCUSSION OF CERTAIN FACTORS THAT SHOULD BE CONSIDERED BY PROSPECTIVE INVESTORS.

THESE SECURITIES HAVE NOT BEEN APPROVED OR DISAPPROVED BY THE SECURITIES AND EXCHANGE COMMISSION OR ANY STATE SECURITIES COMMISSION NOR HAS THE SECURITIES AND EXCHANGE COMMISSION OR ANY STATE SECURITIES COMMISSION PASSED UPON THE ACCURACY OR ADEQUACY OF THIS PROSPECTUS. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The Common Stock of the Company is traded on the American Stock Exchange. On December 24, 1996, the reported closing price of the Common Stock on the American Stock Exchange was \$18.00 per share.

The date of this Prospectus is _____, 1996

No dealer, salesman or any other person has been authorized to give any information or to make any representations in connection with this offering other than those contained in this Prospectus and, if given or made, such information or representations must not be relied upon as having been authorized by the Company or by any other person. This Prospectus does not constitute an offer to sell or a solicitation of an offer to buy any securities other than the registered securities to which it relates or an offer to or solicitation of any person in any jurisdiction in which such offer or solicitation would be unlawful. Neither the delivery of this Prospectus nor any sale or distribution made hereunder shall, under any circumstances, create any implication that there has been no change in the affairs of the Company since the date hereof.

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AVAILABLE INFORMATION

The Company is subject to the informational requirements of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and in accordance therewith files reports, proxy statements and other information with the Securities and Exchange Commission (the "Commission"). Such materials may be inspected and copied at the public reference facilities maintained by the Commission at 450 Fifth Street, N.W., Washington, D.C. 20549, and at the Commission's regional offices located at 7 World Trade Center, 13th Floor, New York, New York 10048 and Northwestern Atrium Center, 500 West Madison Street, Suite 1400, Chicago, Illinois 60661. Copies of such material can be obtained from the Public Reference Section of the Commission at 450 Fifth Street, N.W., Washington, D.C. 20549, at prescribed rates. The Commission maintains a World Wide Web site on the Internet at <http://www.sec.gov> that contains reports, proxy and information statements and other information regarding registrants that file electronically with the Commission.

The Company's reports, proxy statements and other information filed with the Commission may also be inspected and copied at the American Stock Exchange, 86 Trinity Place, New York, New York, on which the Company's Common Stock is listed for trading.

This Prospectus does not contain all the information set forth in the Registration Statement on Form S-3 filed by the Company with the Commission (the "Registration Statement") with respect to the securities to which this Prospectus relates, certain parts of which are omitted in accordance with the rules and regulations of the Commission. For further information with respect to the Company and the shares offered hereby, reference is made to the Registration Statement, including the exhibits thereto. Each summary in this Prospectus of information included in the Registration Statement or any exhibit thereto is qualified in its entirety by reference to such information or exhibit.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The Company hereby incorporates by reference the following documents filed with the Securities and Exchange Commission:

- (a) The Registrant's Annual Report on Form 10-K for the fiscal year ended July 31, 1996 as amended by Form 10-K/A-1 dated December 26, 1996;
- (b) The Registrant's Quarterly Report on Form 10-Q for the quarter ended October 31, 1996;
- (c) The description of the Registrant's Common Stock contained in the Registrant's registration statement on Form 8-A filed under the Exchange Act, including any amendment or report filed for the purpose of updating such description.

All documents filed by the Company with the Commission pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act subsequent to the date hereof, and prior to the termination of the offering made hereby, shall be deemed to be incorporated by reference into this Prospectus. Any statement contained in a document incorporated by reference herein shall be deemed to be modified or superseded for purposes of this Prospectus to the extent that a statement contained herein or in any other subsequently filed document which also is

incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Prospectus.

The Company will provide a copy of any documents incorporated by reference herein (excluding exhibits to the documents so incorporated, unless such exhibits are specifically incorporated by reference into the information that this prospectus incorporates), free of charge, to each person to whom this Prospectus is delivered, upon written or oral request to Enzo Biochem, Inc., 60 Executive Blvd., Farmingdale, New York 11735, Attention: Corporate Secretary; telephone (516) 755-5500.

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THE COMPANY

Enzo Biochem, Inc. (the "Company" or "Enzo") employing biotechnology, develops, manufactures and markets health care products, and also provides medical diagnostic services to the medical community. The business activities of the Company are performed by one of the Company's three wholly-owned subsidiaries-- Enzo Diagnostics, Inc., Enzo Therapeutics, Inc., and Enzo Clinical Labs, Inc. ("Enzo Diagnostics", Enzo Therapeutics" and "EnzoLabs", respectively). These activities are: (1) diagnostic and research product development, manufacture and marketing through Enzo Diagnostics, (2) therapeutic product research and development through Enzo Therapeutics, and (3) the operation of a clinical reference laboratory through EnzoLabs.

For the fiscal year ended July 31, 1996 (fiscal 1996), approximately 38% of the Company's operating revenues was derived from product sales and approximately 62% was derived from clinical reference laboratory services. For the fiscal years ended July 31, 1995 and 1994 (fiscal 1995 and fiscal 1994, respectively), approximately 30% and 23%, respectively, of the Company's operating revenues were derived from product sales and approximately 70% and 77%, respectively, were derived from clinical reference laboratory services.

The Company's principal executive offices are located at 60 Executive Boulevard, Farmingdale, New York 11735, and its telephone number is (516) 755-5500.

RISK FACTORS

In evaluating the Company and its business, prospective purchasers of the Shares offered hereby should consider carefully the following factors in evaluating the Company and its operations:

Possible Adverse Consequences of Litigation with Calgene, Inc. In March 1993, the Company filed suit in the United States District Court for the District of Delaware charging patent infringement and acts of unfair competition against Calgene, Inc. and seeking a declaratory judgment of invalidity concerning Calgene, Inc.'s antisense patent. On February 9, 1994 the Company filed a second suit in the United States District Court for the District of Delaware charging Calgene with infringement of a second antisense patent owned by the Company. Calgene has filed a counterclaim in the second Delaware action seeking a declaration that a third patent belonging to the Company is invalid. The two Delaware actions have been consolidated and were tried to the Court in April 1995. In addition, the Company filed suit on March 22, 1994 in the United States District Court for the Western District of Washington against Calgene and the Fred Hutchinson Cancer Research Center, alleging that the defendants had conspired to issue a false and misleading press release regarding a supposed "patent license" from Hutchinson to Calgene, and conspired to damage the Company's antisense patents by improperly using confidential information to challenge them in the Patent Office. The Complaint further charges that Hutchinson is infringing and inducing Calgene to infringe the Company's antisense patents. On February 2, 1996, the Delaware Court issued an opinion ruling against Enzo and in favor of Calgene, finding certain Enzo claims infringed, but the patent as a whole did not infringe, and finding the claims at issue invalid for lack of enablement. Calgene's patent was found valid (non-obvious) over the prior art. On February 29, 1996, the Delaware Court issued an Order withdrawing its February 2, 1996 opinion. Enzo intends to appeal from any adverse judgment. There can be no assurance that the Company will be successful in any of the foregoing matters or that Calgene, Inc. and/or Hutchinson will not be successful. However, even if the Company is not successful, management does not believe there will be a significant monetary impact.

Competition; Technological Advances by Others. Competitors engaged in genetic engineering in the United States and abroad are numerous and include, among others, major pharmaceutical, energy, food and chemical companies, as well as specialized genetic engineering firms. Many of the large corporations which are involved in genetic engineering have substantially greater resources than

the Company and have the capability of developing products which compete directly with the Company's products. Genetic engineering has undergone, and is

expected to continue to undergo, rapid and significant technological change. New developments in recombinant DNA, monoclonal antibody and other biotechnological processes are expected to continue at a rapid pace in both industry and academia. Although the Company believes that its products will be commercially viable, no assurance can be given that other developments will not render the Company's products uneconomical or obsolete, or that the Company's products can be marketed successfully. The clinical laboratory business is highly fragmented and intensely competitive. The Company competes primarily on the basis of the quality of its testing, reporting and information services, its reputation in the medical community, the pricing of its services and its ability to employ qualified laboratory personnel.

Net Loss for Fiscal Quarters ended July 31, 1995 and 1996 and Year Ended July 31, 1996; Results for October 31, 1996. Although the Company's revenues for the fiscal quarter and year ended July 31, 1996 were higher than the respective comparable periods, earnings were adversely affected by two actions: a \$7.6 million write-off related to real estate and establishment of a \$3.5 million reserve, which takes account of recent reductions in Medicare reimbursement payments to the clinical laboratory industry. As a result, the Company experienced net losses of \$9.6 million, or \$0.43 per share, in the fourth quarter of fiscal 1996 and \$7.7 million, or \$0.34 per share, for fiscal 1996. The Company had a net loss of \$13.9 million, or \$0.60 per share, for the fiscal quarter ended July 31, 1995. Net income for fiscal 1995 amounted to \$5.6 million, or \$0.24 per share, giving effect to the benefit of a litigation settlement of \$21.9 million. Operating revenues for the fiscal quarter ended October 31, 1996 ("1996 Quarter") were \$8,005,000, as compared to \$8,556,000 for the October 31, 1995 quarter ("1995 Quarter"). Net income for the 1996 Quarter was \$122,000, or \$0.01 per share, compared with \$904,000 or \$0.04 per share, for the 1995 Quarter. While sales results at Enzo Diagnostics continued to increase, 1996 Quarter results reflected lower sales at Enzo Clinical Labs as a result of a policy to discontinue servicing unprofitable accounts to create a more favorable mix of customers and to improve margins. In addition, a 1996 Quarter 55% increase in research and development in the therapeutics area, as well as reductions in reimbursement rates at the clinical reference laboratory affected results. There can be no assurance that the Company will generate future net income.

Shares Eligible for Future Sale. Registration statements filed by the Company with the Securities and Exchange Commission had been declared effective with respect to significant amounts of the Company's Common Stock. Sales of Common Stock pursuant to such registration statements may have an adverse effect on the market price of the Common Stock.

Uncertainty of Product Development, Significant Costs Associated with Research and Development Activities. The products being pursued by the Company are at various stages of development and clinical evaluations and may require further technical development and investment to determine whether commercial application is practicable. There can be no assurance that the Company's efforts will result in products with valuable commercial applications. The Company's cash requirements may vary materially from current estimates because of results of the Company's research and development programs, competitive and technological advances and other factors. In any event, the Company will require substantial funds to conduct development activities and pre-clinical and clinical trials, apply for regulatory approvals and commercialize products, if any, that it develops. The Company does not have any commitments or arrangements to obtain any additional financing and there is no assurance that required financing will be available to the Company on acceptable terms, if at all.

Uncertainty of Patent Protection; Proprietary Technology. The Company has filed applications for United States and foreign patents covering certain aspects of its technology, but there is no assurance that pending patents will issue or as to the degree of protection which any issued patent might afford. The Company also utilizes certain unpatented proprietary technology. There is no assurance that others may not independently develop similar technology.

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Retention of Key Personnel. The specialized scientific nature of the Company's business requires the Company to attract and retain personnel with a wide variety of scientific capabilities. To a large extent, the Company's success in developing proprietary technological products has been the result of the effective efforts of the Company's internal scientific staff and its experience and talent. Since its inception an insignificant number of key employees have left the Company. The Company has elected not to pursue the purchase of key man insurance on any of its officers. There can be no assurance that the Company will continue to attract and retain personnel of high scientific caliber.

Government Regulations to which the Company are Subject. In order to manufacture and market therapeutic and diagnostic products, prior clearance of regulatory agencies, in particular the FDA and similar agencies in other countries, must be obtained. The Company has an in-house regulatory department to assist in the preparation and filing of documentation to expedite FDA approvals and patent issuances. The process of obtaining FDA and corresponding foreign approvals is likely to be costly and time consuming, and there can be no

assurance that such approvals will be granted. The process of obtaining approvals for noninvasive diagnostic products is significantly less stringent than approvals for therapeutic products. The extent of potentially adverse government regulations which might arise from future legislation or administrative action cannot be predicted.

Government Regulation and Reimbursement. The research, preclinical development, clinical trials, product manufacturing and marketing to be conducted by the Company are subject to regulation by the FDA and similar health authorities in foreign countries. FDA approval of the Company's products, as well as the manufacturing processes and facilities, if any, used to produce such products, will be required before such products may be commercialized in the United States. The process of obtaining approvals from the FDA is costly, time consuming and often subject to unanticipated delays. There can be no assurance that approvals of any of the proposed products, processes or facilities will be granted on a timely basis, if at all. Even if regulatory approval is granted, such approval may include significant limitations on indicated uses for which any such products could be marketed. Further, even if such regulatory approvals are obtained, a marketed product and its manufacturer are subject to continued review, and later discovery of previously unknown problems may result in restrictions on such product or manufacturer, including withdrawal of the product from the market. New government regulations in the United States or foreign countries also may be established that could delay or prevent regulatory approval of the Company's products under development. Further, because gene therapy is a relatively new technology and has not been extensively tested in humans, the regulatory requirements governing gene therapy products are uncertain and may be subject to substantial further review by various regulatory authorities in the United States and abroad. This uncertainty may result in extensive delays in initiating clinical trials and in the regulatory approval process for the Company. Failure by the Company to obtain regulatory approval of their proposed products, processes or facilities could have a material adverse effect on the business, financial condition and results of operations of the Company. The proposed products under development may also be subject to certain other federal, state and local government regulations, including, but not limited to, the Federal Food, Drug and Cosmetic Act, the Environmental Protection Act, and Occupational Safety and Health Act, and state, local and foreign counterparts to certain of such acts.

The clinical laboratory industry is subject to significant governmental regulation at the Federal, state and local levels. Under the Clinical Laboratory Improvement Act of 1967 and the Clinical Laboratory Improvement Amendments of 1988 (collectively, as amended "CLIA") virtually all clinical laboratories, including the Company's, must be certified by the Federal government. Many clinical laboratories also must meet governmental standards, undergo proficiency testing and are subject to inspection. Certifications or licenses are also required by various state and local laws.

The health care industry is undergoing significant change as third-party payors, such as Medicare (which principally serves patients 65 and older) and Medicaid (which principally serves indigent patients) and insurers, increase their efforts to control the cost, utilization and delivery of health

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care services. In an effort to address the problem of increasing health care costs, legislation has been proposed or enacted at both the Federal and state levels to regulate health care delivery in general and clinical laboratories in particular. Some of the proposals include managed competition, global budgeting and price controls.

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PRO FORMA (UNAUDITED) FINANCIAL INFORMATION

The following October 31, 1996 unaudited pro forma consolidated balance sheet gives effect to the issuance by the Company in December 1996 of an aggregate of 69,053 shares of Common Stock to the Creditors in consideration of an aggregate of \$1,242,955 of indebtedness owed or owing by the Company to the Creditors. The October 31, 1996 pro forma consolidated balance sheet assumes such issuances occurred as of October 31, 1996. The actual and pro forma October 31, 1996 consolidated balance sheets also gives effect to the issuance of 347,468 shares of common stock to the creditors in consideration of an aggregate of \$4,928,916 of indebtedness owed or owing by the Company to the creditors, which shares were issued in August and October 1996, and also reflects the Company's 5% stock dividend paid on October 29, 1996 to holders of record on October 8, 1996. Such October 31, 1996 pro forma information should be read in conjunction with the Company's audited historical consolidated financial statements and related notes thereto, which are incorporated herein by reference in this Prospectus.

<TABLE>
<CAPTION>

ASSETS

		October 31, 1996	
		(in thousands)	
Pro Forma		Actual	Pro Forma Adjustment
<S>		<C>	<C>
<C>			
Total current assets		\$ 42,359	\$ 90 (1)
\$ 42,449			
Other assets		21,851	--
21,851			
Total assets		\$ 64,210	\$ 90
\$ 64,300			
=====			
		LIABILITIES AND	

STOCKHOLDERS' EQUITY			

Total current liabilities		\$ 2,705	\$ (1,103) (1)
\$ 1,602			
Other liabilities		1,107	--
1,107			
Total liabilities		\$ 3,812	\$ (1,103)
\$ 2,709			
=====			
Stockholders' Equity			
Preferred Stock, \$.01 par value; authorized 25,000,000 shares; no shares issued or outstanding			
Common Stock, \$.01 par value; authorized 75,000,000 shares; Shares issued and outstanding; 23,076,000 (actual) at October 31,1996; 23,145,100 (pro forma) at October 31, 1996;			
231		231	--

Additional paid-in capital (2)		88,458	1,193 (1)
89,651			
Accumulated deficit		(28,291)	--
(28,291)			
Total Stockholders' Equity		60,398	1,193
61,591			
Total Liabilities and Stockholders' Equity		\$ 64,210	\$ 90
\$ 64,300			
=====			

<FN>

(1) Adjustment reflects the issuance of 69,053 shares of common stock par value \$.01 of the Company with a fair market value of \$1,243,000 at the respective dates of issuance in exchange for indebtedness of \$1,153,000 and including prepayments to the Selling Shareholders of \$90,000. Accrued offering costs of \$50,000 have been offset against additional paid-in capital.

(2) Included in the common stock being offered are 213,623 shares of the Company's common stock issued to the City of New York (the "City") in August 1996. If the City has not received the net proceeds of \$2,950,000 upon the sale of such stock by March 17, 1997, the City shall return the remaining shares not sold, if any, and the Company shall pay the difference in cash. The Company would receive the net proceeds in excess of \$2,950,000. The excess or deficiency of the net proceeds received by

the Company or paid to the City shall be recorded to additional paid-in capital.

</TABLE>

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USE OF PROCEEDS

None of the proceeds from the sale of the shares by the Selling Stockholders will be received by the Company, except that with respect to the proceeds from the sale of the shares owned by the City of New York, to the extent the proceeds from such sales, after deduction of brokerage and other direct costs of such sale exceed \$2,950,000, the Company shall be entitled to such proceeds.

Included in the common stock being offered are 213,623 shares of the Company's common stock issued to the City of New York (the "City") in August 1996. If the City has not received the net proceeds of \$2,950,000 upon the sale of such stock by March 17, 1997, the City shall return the remaining shares not sold, if any, and the Company shall pay the difference in cash. The Company would receive the net proceeds in excess of \$2,950,000. The excess or deficiency of the net proceeds received by the Company or paid to the City shall be recorded to additional paid-in capital.

SELLING STOCKHOLDERS

The following table sets forth certain information, as of the date hereof, with respect to the Shares held by each Selling Stockholder.

The Creditors were issued the 416,521 shares of Common Stock (giving effect to the Company's 5% stock dividend paid on October 29, 1996 to holders of record on October 8, 1996) being offered by them hereby in August 1996, in October and in December 1996 in exchange for the cancellation of an aggregate of \$6,171,871 owed or to be owed by the Company to them. The Company is currently incurring additional indebtedness to certain of the Creditors who continue to render legal services to the Company. The shares offered hereby by the Creditors were received in cancellation of indebtedness owed or owing to each Creditor incurred in connection with legal, public relations or investment banking services performed or to be performed for the Company, in satisfaction of insurance premium obligations presently incurred or due in the future and in satisfaction of actual obligations to the City of New York. The number of shares of Common Stock issued in exchange for the indebtedness was negotiated between the Company and each of the Creditors. None of the Selling Stockholders is an affiliate of the Company. The shares offered by this Prospectus may be offered from time to time by the Selling Shareholders named below.

Name of Selling Shareholder	Amount of Indebtedness Converted into Common Stock	Number of Shares Owned Before the Offering	Shares Being Offered	Number of Shares Owned After the Offering (1)
Lieberman & Nowak LLP	\$150,202	18,612 (2)	10,343	8,269
Vossius & Partner	\$150,000	10,328	10,328	0
Graubard Mollen & Miller	\$38,675	2,663	2,663	0
Stadtmauer Bailkin LLP	\$35,039	2,413	2,413	0
Kenyon & Kenyon	\$345,000	20,000	20,000	0
John J. Santalone	\$150,000	11,264	10,328	936

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Name of Selling Shareholder	Amount of Indebtedness Converted into Common Stock	Number of Shares Owned Before the Offering	Shares Being Offered	Number of Shares Owned After the Offering (1)
Wilson Elser Moskowitz Edelman & Dicker	\$30,000	2,065	2,065	0
The City of New York	\$2,950,000	213,623	213,623	0
Lehman Brothers Inc.	\$50,000	3,444 (3)	3,444	0
Foley and Lardner	\$250,000	17,214	17,214	0
Jacobs and Jacobs Inc.	\$750,000	52,139 (4)	51,639	500
Christos G. Katis	\$12,000	2,940 (5)	971	1,969
Porter, LeVay & Rose Inc. Defined Benefit Pension Plan	\$36,000	2,479	2,479	0
Steven S. Anreder	\$48,000	39,136 (6)	3,305	35,831
M. Richard Keating	\$24,000	4,410 (7)	1,653	2,757
Anderson Kill & Olick, P.C.	\$1,152,955	65,431 (8)	64,053	1,378

(1) Assumes that all Shares offered by this Prospectus are sold.

(2) Includes 8,269 shares underlying options which are currently exercisable or

which may be exercisable within 60 days. Does not include 2,756 shares underlying options which are not exercisable within 60 days.

- (3) Does not include 10,500 shares underlying options which are not exercisable within 60 days and which are held by a principal of Lehman Brothers Inc.
- (4) Includes 300 shares owned by a principal of Jacobs and Jacobs Inc. and 200 shares held by the wife of such principal.
- (5) Includes 1,969 shares underlying options which are currently exercisable or which may be exercisable within 60 days. Does not include 5,906 shares underlying options which are not exercisable within 60 days.
- (6) Includes 35,831 shares underlying options which are currently exercisable or which may be exercisable within 60 days. Does not include 2,757 shares underlying options which are not exercisable within 60 days.
- (7) Includes 2,757 shares underlying options which are currently exercisable or which may be exercisable within 60 days. Does not include 2,756 shares underlying options which are not exercisable within 60 days.
- (8) Includes 1,378 shares underlying options which are currently exercisable or which may be exercisable within 60 days and which are owned by Mr. Arthur Olick.

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PLAN OF DISTRIBUTION

This Prospectus may be used from time to time by the Selling Stockholders who offer the Shares registered hereby for sale in transactions in which they are or may be deemed to be underwriters within the meaning of the Securities Act of 1933. The Shares may be sold from time to time directly by the Selling Stockholders or by pledgees, donees, transferees or other successors in interest. Alternatively, the Shares may be offered from time to time by the Selling Stockholders to or through brokers or dealers who may act solely as agent, or may acquire shares as principal. The distribution of the Shares may be effected in one or more transactions that may take place on the American Stock Exchange, including block trades, ordinary broker's transactions, privately negotiated transactions or through sales to one or more broker/dealers for resale of such securities as principals, at market prices prevailing at the time of sale, at prices related to such prevailing market prices or at negotiated prices. Usual and customary or specifically negotiated brokerage fees or commissions may be paid by these holders in connection with such sales. In connection with such sales, the Selling Stockholders and any participating brokers or dealers may be deemed "underwriters" as such term is defined in the Securities Act of 1933, as amended.

EXPERTS

The consolidated financial statements and schedule of Enzo Biochem, Inc. appearing in Enzo Biochem, Inc.'s Annual Report (Form 10-K) for the year ended July 31, 1996, have been audited by Ernst & Young LLP, independent auditors, as set forth in their report thereon included therein and incorporated herein by reference. Such consolidated financial statements and schedule are incorporated herein by reference in reliance upon such report given upon the authority of such firm as experts in accounting and auditing.

LEGAL MATTERS

Certain legal matters relating to the Shares will be passed upon for the Company by Bryan Cave LLP, 245 Park Avenue, New York, New York 10167-0034. Certain members of Bryan Cave LLP are beneficial and/or record owners of securities of the Company.

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ENZO BIOCHEM, INC.

416,521 Shares

PROSPECTUS

_____, 1996
PART II

INFORMATION NOT REQUIRED IN THE PROSPECTUS

Item 14. Other Expenses of Issuances and Distribution

S.E.C. Registration.....	\$ 2,271.93
Legal Fees and Expenses.....	40,000

Accountants' Fees and Expenses.....	5,000
Miscellaneous.....	2,728.07

Total.....	\$50,000.00
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Item 15. Indemnification of Directors and Officers.

ARTICLE V of the Registrant's By-Laws provides as follows:

Section 1. Indemnification-Third Party and Derivative Actions.

(a) The Corporation shall indemnify any person made, or threatened to be made, a party to an action or proceeding (other than one by or in the right of the Corporation to procure a judgment in its favor), whether civil or criminal, including an action by or in the right of any other corporation of any type or kind, domestic or foreign, or any partnership, joint venture, trust, employee benefit plan or other enterprise, which any director or officer of the Corporation served in any capacity at the request of the Corporation, by reason of the fact that he, his testator or intestate, is or was a director or officer of the Corporation, by reason of the fact that he, his corporation, partnership, joint venture, trust, employee benefit plan or other enterprise in any capacity, against judgments, fines, amounts paid in settlement and expenses (including attorneys' fees) incurred in connection with any such action or proceeding, or any appeal therein, provided that no indemnification may be made to or on behalf of such person if (i) his acts were committed in bad faith or were the result of his active and deliberate dishonesty and were material to such action or proceeding or (ii) he personally gained in fact a financial profit or other advantage to which he was not legally entitled

(b) The Corporation shall indemnify any person made, or threatened to be made, a party to an action by or in the right of the Corporation to procure a judgment in its favor by reason of the fact that he, his testator or intestate, is or was a director or officer of the Corporation, or is or was serving at the request of the Corporation as a director or officer of any other corporation of any type or kind, domestic or foreign, or of any partnership, joint venture, trust, employee benefit plan or other enterprise, against judgments, fines, amounts paid in settlement and expenses (including attorneys' fees) incurred in connection with such action, or any appeal therein, provided that no indemnification may be made to or on behalf of such person if (i) his acts were committed in bad faith or were the result of his active and deliberate dishonesty and were material to such action or (ii) he personally gained in fact a financial profit or other advantage to which he was not legally entitled.

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(c) The termination of any civil or criminal action or proceeding by judgment, settlement, conviction or upon a plea of nolo contendere, or its equivalent, shall not in itself create a presumption that any such person has not met the standard of conduct set forth in this Section 1.

(d) For the purpose of this Section 1: (i) the Corporation shall be deemed to have requested a person to serve an employee benefit plan where the performance by such person of his duties to the Corporation also imposes duties on, or otherwise involve services by, such person to the plan or participants or beneficiaries of the plan; and (ii) excise taxes assessed on a person with respect to an employee benefit plan pursuant to applicable law shall be considered fines.

Section 2. Payment of Indemnification; Repayment

(a) A person who has been successful, on the merits or otherwise, in the defense of a civil or criminal action or proceeding of the character described in Section I of this Article V shall be entitled to indemnification as authorized in such Section.

(b) Except as provided in paragraph (a) of this Section 2, any indemnification under Section I of this Article V, unless ordered by a court, shall be made by the Corporation only if authorized in the specific case:

(i) by the Board of Directors acting by a quorum consisting of directors who are not parties to the action or proceeding giving rise to the indemnity claim upon a finding that the director or officer has met the standard of conduct set forth in Section I of this Article V; or

(ii) if a quorum under the foregoing clause (i) is not obtainable or, even if obtainable, a quorum of disinterested directors so directs:

(A) by the Board of Directors upon the opinion in writing of independent legal counsel that indemnification is proper in the circumstances because the standard of conduct set forth in Section I of this Article V has been met by such director or officer, or

(B) by the shareholders of the Corporation upon a finding that

the director or officer has met such standard of conduct.

(c) Expenses Incurred by a director or officer in defending a civil or criminal action or proceeding shall be paid by the Corporation in advance of the final disposition of such action or proceeding upon receipt of an undertaking by or on behalf of such director or officer to repay such amount in case he is ultimately found, in accordance with this Article V, not to be entitled to indemnification or, where indemnity is granted, to the extent the expenses so paid exceed the indemnification to which he is entitled.

(d) Any indemnification of a director or officer of the Corporation under Section I of this Article V, or advancement of expenses under paragraph (c) of this Section 2, shall be made promptly, and in any event within 60 days, upon the written request of the director or officer.

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Section 3. Enforcement; Defenses. The right to indemnification or advancement of expenses granted by this Article V shall be enforceable by the director or officer in any court of competent jurisdiction if the Corporation denies such request, in whole or in part, or if no disposition thereof is made within 60 days after written request by the director or officer. Such person's expenses incurred in connection with successfully establishing his right to indemnification, in whole or in part, in any such action shall also be indemnified by the Corporation. It shall be a defense to any such action (other than an action brought to enforce a claim for the advancement of expenses under Section 2 of this Article V where the required undertaking has been received by the Corporation) that the claimant has not met the standard of conduct set forth in Section I of this Article V, but the burden of providing such defense shall be on the Corporation. Neither the failure of the Corporation (including its Board of Directors, its independent legal counsel, and its shareholders) to have made a determination that indemnification of the claimant is proper in the circumstances, nor the fact that there has been an actual determination by the Corporation (including its Board of Directors, its independent legal counsel, and its shareholders) that indemnification of the claimant is not proper in the circumstances, shall be a defense to the action or create a presumption that the claimant is not entitled to indemnification,

Section 4. Survival, Savings Clause; Preservation of Other Rights.

(a) The foregoing indemnification provisions shall be deemed to be a contract between the Corporation and each director and officer who serves in such capacity at any time while these provisions, as well as the relevant provisions of the New York Business Corporation Law, are in effect and any repeal or modification thereof shall not affect any right or obligation then existing with respect to any state of facts then or previously existing or any action or proceeding previously or thereafter brought or threatened based in whole or in part upon any such state of facts. Such a contract may not be modified retroactively without the consent of such director or officer.

(b) If this Article V or any portion hereof shall be invalidated on any ground by any court of competent jurisdiction, then the Corporation shall nevertheless indemnify each director or officer of the Corporation against judgments, fines, amounts paid in settlement and expenses (including attorneys' fees) incurred in connection with any actual or threatened action or proceeding, whether civil or criminal, including any actual or threatened action by or in the right of the Corporation, or any appeal therein, to the full extent permitted by any applicable portion of this Article V that shall not have been invalidated and to the full extent permitted by applicable law.

(c) The indemnification provided by this Article V shall not be deemed exclusive of any other rights to which those indemnified may be entitled under any by-law, agreement, vote of shareholders or directors or otherwise, both as to action in his official capacity and as to action in another capacity while holding such office, and shall continue as to a person who has ceased to be a director or officer and shall inure to the benefit of the heirs, executors and administrators of such a person. The Corporation is hereby authorized to provide further indemnification if it deems advisable by resolution of shareholders or directors, by amendment of these by-laws or by agreement.

Section 5. Insurance. The Corporation may purchase and maintain insurance:

(a) to indemnify the Corporation for any obligation which it incurs as a result of the indemnification of directors and officers under the provisions of this Article V,

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(b) to indemnify directors and officers in instances in which they may be indemnified by the Corporation under the provisions of this Article V, and

(c) to indemnify directors and officers in instances in which they may not otherwise be indemnified by the Corporation under the provisions of this Article V, provided that the contract of insurance covering such directors and officers pursuant to the foregoing paragraph (c) of Section 4 of this Article V shall

provide, in a manner acceptable to the superintendent of insurance, for a retention amount and for co-insurance, and provided, further, that no insurance under this Article V may provide for any payment, other than the cost of defense, to or on behalf of any director or officer if a judgment or other final adjudication adverse to the insured director or officer establishes (i) that his acts of active and deliberate dishonesty were material to the cause of action so adjudicated or (ii) that the director or officer personally gained in fact a financial profit or other advantage to which he was not legally entitled.

Section 6. Indemnification of Persons not Directors or Officers of the Corporation. The Corporation may, by resolution adopted by the Board of Directors of the Corporation, indemnify any person not a director or officer of the Corporation, who is made, or threatened to be made, a party to an action or proceeding, whether civil or criminal, by reason of the fact that he, his testator or intestate, is or was an employee or other agent of the Corporation, against judgments, fines, amounts paid in settlement and expenses (including attorneys' fees) incurred in connection with such action or proceeding, or any appeal therein, provided that no indemnification may be made to or on behalf of such person if (i) his acts were committed in bad faith or were the result of active and deliberate dishonesty, and such acts were material to such action or proceeding, or (ii) he personally gained in fact a financial profit or other advantage to which he was not legally entitled.

Section 7. Retroactivity. The right to indemnification conferred by this Article V shall be retroactive to events occurring prior to the adoption of this Article V to the fullest extent permitted by law.

Article 12 of the Registrant's Certificate of Incorporation provides as follows:

"12. No director of the Corporation shall be liable to the Corporation or its shareholders for damages for any breach of duty in such capacity, provided that nothing contained in this Article shall eliminate or limit the liability of a director (i) if a judgment or other final adjudication adverse to him establishes that his acts or omissions were in bad faith or involved intentional misconduct or a knowing violation of law, or that he personally gained in fact a financial profit or other advantage to which he was not legally entitled, or that his acts violated Section 719 of the New York Business Corporation Law or (ii) for any act or omission prior to July 8, 1988."

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Item 16. Exhibits

Exhibit No.	Description
5.1	Opinion of Bryan Cave LLP
23.1	Consent of Ernst & Young LLP.
23.2	Consent of Bryan Cave LLP (included in Exhibit 5.1).

Item 17. Undertakings.

The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be

the initial bona fide offering thereof.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

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SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement or amendment thereto to be signed on its behalf by the undersigned, thereunto duly authorized, in the Town of Farmingdale, State of New York, on this 20th day of December, 1996.

ENZO BIOCHEM, INC.

By: /s/ Elazar Rabbani

Elazar Rabbani, Ph.D, Chairman & CEO

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each individual whose signature appears below constitutes and appoints ELAZAR RABBANI and BARRY WEINER, and each of them, his true and lawful attorneys-in-fact and agents with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement, and to file the same with all exhibits thereto, and all documents in connection therewith, with the Securities and Exchange Commission granting into said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing, requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their or his substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement or amendment thereto has been signed by the following persons in the capacities and on the date indicated.

Signature	Title	Date
/s/ Elazar Rabbani ----- Elazar Rabbani	Chairman & CEO (Principal Executive Office)	December 20, 1996

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Signature	Title	Date
/s/ Shahram K. Rabbani ----- Shahram K. Rabbani	Chief Operating Officer, Treasurer, Secretary and Director (Principal Financial and Accounting Officer)	December 20, 1996
/s/ Barry W. Weiner ----- Barry W. Weiner	President and Director	December 20, 1996
----- John B. Sias	Director	
----- John J. Delucca	Director	

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BRYAN CAVE LLP
245 PARK AVENUE
NEW YORK, NEW YORK 10167-0034
(212) 692-1800
FACSIMILE: (212) 692-1900

December 30, 1996

Enzo Biochem, Inc.
60 Executive Boulevard
Farmingdale, New York 11735

Dear Sirs:

We refer to the Registration Statement on Form S-3 filed by you with the Securities and Exchange Commission relating to 416,521 shares of Common Stock, \$.01 par value per share (the "Shares"), of Enzo Biochem, Inc. (the "Company").

We have examined and are familiar with originals, or copies certified or otherwise identified to our satisfaction, of such corporate records of the Company, certificates of officers of the Company and of public officials and such other documents as we have deemed appropriate as a basis for the opinions expressed below.

Based upon the foregoing, we are of the opinion that:

1. The Company is duly incorporated and existing under the laws of the State of New York;
2. The Shares have been duly authorized; and
3. The Shares being sold by the selling stockholders, when sold as contemplated in the Registration Statement, will be legally issued, fully paid and non-assessable.

We hereby consent to the use of this opinion in the above-mentioned Registration Statement and to the reference to our name under the heading "Legal Opinions" in the Prospectus constituting a part of such Registration Statement.

Very truly yours,

BRYAN CAVE LLP

CONSENT OF ERNST & YOUNG LLP

We consent to the reference to our firm under the caption "Experts" in the Registration Statement (Form S-3 No. 333-15533) and related Prospectus of Enzo Biochem, Inc. for the registration of 416,521 shares of its common stock and to the incorporation by reference therein of our report dated October 15, 1996, with respect to the consolidated financial statements and schedule of Enzo Biochem, Inc. included in its Annual Report (Form 10-K) for the year ended July 31, 1996, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Melville, New York
December 27, 1996