

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

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.)

81 Executive Blvd., Suite 3  
Farmingdale, New York 11735  
(631) 755-5500  
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

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Enzo Biochem, Inc.  
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(Name, address, including zip code, and telephone number, including area code, of agent for service)

*Copies to:*

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**Approximate date of commencement of proposed sale to the public: From time to time after this registration statement becomes effective.**

If the only 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, as amended ("Securities Act"), other than securities offered only in connection with dividend or interest reinvestment plans, check the following box. ☒

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box. ☐

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☐  
Non-accelerated filer ☐

Accelerated filer ☒  
Smaller reporting company ☒  
Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for comply with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of Securities Act. ☐

**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, as amended, or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.**

**EXPLANATORY NOTE**

This registration statement contains two prospectuses:

- a base prospectus which covers the offering, issuance and sale of such indeterminate number of shares of common stock, preferred stock, depositary shares, debt securities, warrants, and units, which together shall have an aggregate initial offering price not to exceed \$150,000,000; and
- a sales agreement prospectus covering the offering, issuance and sale of shares of the Registrant's common stock that, may be issued and sold under a sales agreement, between the Registrant and B. Riley Securities, Inc. in an aggregate amount of up to \$30,000,000.

The base prospectus immediately follows this explanatory note. The specific terms of any securities to be offered pursuant to the base prospectus will be specified in a prospectus supplement to the base prospectus. The sales agreement prospectus immediately follows the base prospectus. The common stock that may be offered, issued and sold under the sales agreement prospectus is included in the \$150,000,000 of securities that may be offered, issued and sold by the Registrant under the base prospectus.

The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

**PROSPECTUS, SUBJECT TO COMPLETION, DATED MAY 12, 2023**



**ENZO BIOCHEM, INC.**

\$150,000,000

Common Stock  
Preferred Stock  
Depositary Shares  
Debt Securities  
Warrants  
Units

We may from time to time offer and sell common stock, preferred stock, depositary shares, debt securities, warrants, and units, having an aggregate offering price of up to \$150,000,000. We may offer and sell these securities separately or together in any combination. We may offer and sell these securities to or through underwriters, directly to investors or through agents. We will specify the terms of the securities, and the names of any underwriters or agents and their respective compensation, in supplements to this prospectus. Our common stock is listed on the New York Stock Exchange under the symbol "ENZ". On May 11, 2023, the last reported sale price of our common stock on the New York Stock Exchange was \$2.54 per share.

You should read this prospectus and any prospectus supplement carefully before you invest in any of our securities.

**Investing in our securities involves a high degree of risk. You should carefully consider the risk factors described in the applicable prospectus supplement and certain of our filings with the Securities and Exchange Commission, as described under "Risk Factors" on page S-4.**

This prospectus may not be used to offer or sell any securities unless accompanied by a prospectus supplement.

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.**

The date of this prospectus is                      , 2023.

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## ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission (the “SEC”) using a “shelf” registration process. Under this shelf process, we may sell any combination of the securities described in this prospectus in one or more offerings up to a total dollar amount of \$150,000,000. We have provided to you in this prospectus a general description of the securities we may offer. Each time we sell securities under this shelf registration process, we will provide a prospectus supplement that will contain specific information about the terms of the offering. We may also add, update or change in the prospectus supplement or any “free writing prospectus” we may authorize to be delivered to you any of the information contained in this prospectus. To the extent there is a conflict between the information contained in this prospectus and the prospectus supplement or any free writing prospectus we may authorize to be delivered to you, you should rely on the information in the prospectus supplement or free writing prospectus, as the case may be, provided that if any statement in one of these documents is inconsistent with a statement in another document having a later date—for example, a document incorporated by reference in this prospectus or any prospectus supplement—the statement in the document having the later date modifies or supersedes the earlier statement.

An investment in our securities involves certain risks that should be carefully considered by prospective investors. See “Risk Factors.”

We incorporate by reference important business and financial information about us into this prospectus and any prospectus supplement or any free writing prospectus we may authorize to be delivered to you. You may obtain the information incorporated by reference into this prospectus without charge by following the instructions under “Where You Can Find More Information.” You should carefully read this prospectus and any prospectus supplement and any free writing prospectus we may authorize to be delivered to you as well as additional information described under “Incorporation of Certain Information by Reference.” All references in this prospectus to “Enzo Biochem,” “Enzo,” the “Company,” “we,” “us” or “our” mean Enzo Biochem, Inc., unless we state otherwise or the context otherwise requires.

You should rely only on the information contained in, or incorporated by reference into, this prospectus. We have not authorized anyone to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. We are not making an offer to sell these securities in any jurisdiction where the offer is not permitted. The information contained in this prospectus is accurate only as of the date of this prospectus and the information in the documents incorporated by reference in this prospectus is accurate only as of the date the documents were filed with the SEC, regardless of the time of delivery of this prospectus or the time of issuance or resale of any securities. Our business, financial condition, results of operations and prospects may have changed since those dates.

## SUMMARY

*The following summary provides an overview of certain information about our company and the offering and may not contain all the information that may be important to you. This summary is qualified in its entirety by and should be read together with the information contained in other parts of this prospectus. You should carefully read this entire prospectus before making a decision about whether to invest in any of our securities.*

### Enzo Biochem, Inc.

#### Overview

Enzo Biochem, Inc. (the “Company”, “we”, “our”, or “Enzo”) is an integrated diagnostics, clinical lab, and life sciences company focused on delivering and applying advanced technology capabilities to produce affordable reliable products and services that enable our customers to meet their clinical needs. Through a connection with the market, we provide advanced biotechnology solutions to the global community as affordable and flexible quality products and services. We develop, manufacture and sell our proprietary technology solutions and platforms to clinical laboratories, specialty clinics, researchers and physicians globally. Enzo’s structure and business strategy represent the culmination of years of extensive planning and work. The Company has the ability to offer low cost, high performance products and services for diagnostic testing, which ideally positions us to capitalize on the reimbursement pressures facing diagnostic labs. Our pioneering work in genomic analysis coupled with our extensive patent estate and enabling platforms have positioned the Company to continue to play an important role in the rapidly growing molecular medicine marketplaces.

Enzo develops low cost diagnostic platform products and related services. Our platform development includes automation-compatible reagent systems and associated products for sample collection and processing through analysis. We develop affordable products and services to improve healthcare, one of the greatest challenges today. Enzo combines over 40 years of expertise in technology development with assay development capabilities and diagnostic testing services to create high performance, cost-effective, and open assay solutions. The ability to combine these assets in one company is uncommon. With our strong intellectual property portfolio integrated with assay development know-how, production, distribution, validation and services capabilities, we have enabled sustainable products and services for a market that is facing increasing pressure in costs and reimbursement.

Enzo technology solutions and platforms and unique operational structure are designed to reduce overall healthcare costs for both government and private insurers. Our proprietary technology platforms reduce our customers’ need for multiple, specialized instruments, and offer a variety of high throughput capabilities together with a demonstrated high level of accuracy and reproducibility. Our genetic test panels are focused on large and growing markets primarily in the areas of personalized medicine, women’s health, infectious diseases and genetic disorders.

In the course of our research and development activities, we have built a substantial portfolio of intellectual property assets, comprised of approximately 472 issued patents worldwide and over 64 pending patent applications, along with extensive enabling technologies and platforms.

#### Operating Segments

Below are brief descriptions of our two operating segments. For a more detailed description, see Note 11 – Segment Reporting in the Notes to Consolidated Financial Statements in our Form 10-Q filed March 20, 2023:

**Enzo Clinical Services** is a clinical reference laboratory providing a wide range of clinical services to physicians, medical centers, other clinical labs and pharmaceutical companies. The Company believes having a Clinical Laboratory Improvement Amendments of 1988 (“CLIA”) certified and College of American Pathologists (“CAP”) accredited medical laboratory located in New York provides us the opportunity to more rapidly introduce cutting edge products and services to the clinical marketplace. Enzo Clinical Labs offers an extensive menu of molecular and other clinical laboratory tests and procedures used in patient care by physicians to establish or support a diagnosis, monitor treatment or medication, and search for an otherwise undiagnosed condition. Our laboratory is equipped with state-of-the-art communication and connectivity solutions enabling the rapid transmission, analysis and interpretation of generated data. We operate a full service clinical laboratory in Farmingdale, New York, a network of over 30 patient service centers throughout New York, New Jersey and Connecticut, two free standing “STAT” or rapid response

laboratories in New York City and Connecticut, an in-house logistics department, and an information technology department. Under our license in New York State, we are able to offer testing services to clinical laboratories and physicians nationwide.

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The Clinical Laboratory Services reporting unit is impacted by various risk factors, including among others, loss of a substantial portion of revenues from COVID-19 testing, reduced reimbursements from third party payers for testing performed and from recent health care legislation.

On March 16, 2023, the Company entered into an Asset Purchase Agreement with respect to the sale of assets and assignment of certain liabilities of the Clinical Labs division.

**Enzo Products** manufactures, develops and markets products and tools for clinical research, drug development and bioscience research customers worldwide. Underpinned by broad technological capabilities, Enzo Life Sciences has developed proprietary products used in the identification of genomic information by laboratories around the world. Information regarding our technologies can be found in the “Core Technologies” section of our most recently filed Form 10-K. We are internationally recognized and acknowledged as a leader in the development, manufacturing validation and commercialization of numerous products serving not only the clinical research market, but also the life sciences markets in the fields of cellular analysis and drug discovery, among others. Our operations are supported by global operations allowing for the efficient marketing and delivery of our products around the world.

#### Recent Developments

On March 16, 2023, the Company filed a Form 8-K indicating that it and Enzo Clinical Labs, Inc. (the “Subsidiary” and, together with the Company, the “Seller”) entered into an Asset Purchase Agreement (the “Purchase Agreement”) with Laboratory Corporation of America Holdings, a Delaware corporation (the “Buyer”). Pursuant to the Purchase Agreement, the Seller has agreed to sell substantially all operating assets and assign certain liabilities of its clinical labs business (the “Business”) to the Buyer which are necessary to operate the Business in exchange for approximately \$146,000,000 in cash (subject to certain adjustments), on and subject to the terms and conditions set forth therein (such transaction, the “Transaction”).

The Purchase Agreement contains customary representations, warranties, covenants and termination rights for a transaction of this nature, including, among other things, customary covenants: (i) relating to the conduct of the Business between the signing of the Purchase Agreement and the closing of the Transaction and (ii) regarding the efforts of the parties to cause the Transaction to be consummated, including obtaining certain consents and approvals. The consummation of the Transaction is subject to the satisfaction or waiver of customary closing conditions, including the expiration or termination of any required waiting periods under the Hart-Scott-Rodino Antitrust Improvements Act of 1976. In addition, closing under the Purchase Agreement is contingent on the Company obtaining approval of the Transaction by shareholders of the Company holding a majority of the shares of its common stock outstanding. Certain officers and directors of the Company have agreed with Buyer to vote the shares they beneficially own, totaling up to approximately 11% of the shares outstanding, in favor of the Transaction.

The Purchase Agreement also includes customary termination provisions for both the Company and Buyer and provides that, in connection with the termination of the Purchase Agreement under specified circumstances, including termination by the Company to accept and enter into a definitive agreement with respect to an unsolicited Superior Proposal, the Company will be required to pay Buyer a termination fee of \$5,000,000 or reimbursement of Buyer’s expenses of up to \$5,000,000.

Subject to the terms and conditions stated in the Purchase Agreement, after shareholder approval of the Transaction, Buyer will be obligated to pay a fee to the Company for each day after the date of such approval until the closing of the Transaction. At the closing of the Transaction, such fee will be wholly or partially credited against the purchase price.

On April 13, 2023, the Company filed a preliminary proxy statement (the “Preliminary Proxy Statement”) and, on April 24, 2023, the Company filed a definitive proxy statement (the “Definitive Proxy Statement” and, together with the Preliminary Proxy Statement, the “Proxy Statement”) with the SEC and commenced mailing of the Proxy Statement to the Company’s shareholders to solicit the approval of the Transaction and adopt the Purchase Agreement at a special meeting of shareholders to be held on May 22, 2023 (the “Special Meeting”).

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There can be no assurances that the Purchase Agreement will close and if it does close, the exact proceeds to be received by the Company.

On March 31, 2023, the Company entered into a Revolving Loan and Security Agreement (the “Credit Facility”) among the Subsidiary and Enzo Life Sciences, Inc., as borrowers (the “Borrowers”), the Company and certain of its domestic subsidiaries, as guarantors (the “Guarantors”), and Gemino Healthcare Finance, LLC (d/b/a SLR Healthcare ABL), as lender.

The Credit Facility provides for a maximum \$8 million revolving line of credit. The commitment under the Credit Facility will expire after one year and all outstanding borrowings under the Credit Facility will become due and payable at that time. Prior to its expiration, the Borrowers will prepay and terminate the Credit Facility upon closing of the Purchase Agreement, and a standard termination fee will be payable.

The Credit Facility is secured by a first priority perfected security interest in the collateral. The collateral includes substantially all the U.S. assets of the Borrowers and the Guarantors, including among other assets, cash, receivables, inventory and fixed assets.

Borrowings under the Credit Facility accrue interest at the rate per annum equal to Term SOFR (Secured Overnight Financing Rate) for a three-month tenor plus 5.50%. Other fees, such as an unused line fee and a collateral monitoring fee, also apply. The Borrowers borrowed \$5.5 million under the Credit Facility upon the closing thereof.

The Credit Facility includes customary affirmative and negative covenants for revolving credit facilities of this nature, including certain limitations on the incurrence of additional indebtedness and liens. In addition, the Credit Facility requires the Borrowers to maintain certain minimum liquidity levels as of the last day of each calendar month. The levels decline over time, starting at \$4 million as of April 30, 2023, then \$3 million as of May 31, 2023 and \$2 million as of the end of each month thereafter.

The Credit Facility includes customary events of default for revolving credit facilities of this nature, including failure to pay outstanding principal or interest, failure of applicable representations or warranties to be correct in any material respects, failure to perform any other term, covenant or agreement, certain defaults upon obligations under the Employee Retirement Income Security Act, bankruptcy or a change in control. Such events of default would require the repayment of any outstanding borrowings and the termination of the right to borrow additional funds under the Credit Facility.

## Corporate Information

Our offices are located at 81 Executive Blvd., Suite 3, Farmingdale, New York 11735, and our telephone number is (631) 755-5500. We maintain a website at [www.enzo.com](http://www.enzo.com). Our website and the information contained therein or connected thereto are not incorporated by reference and are not a part of this prospectus.

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## RISK FACTORS

Before you invest in our securities, in addition to the other information, documents or reports included or incorporated by reference in this prospectus and in any prospectus supplement, you should carefully consider the risk factors set forth in the section entitled “Risk Factors” in any prospectus supplement as well as in “Part I, Item 1A. Risk Factors” in our most recent annual report on Form 10-K and in “Part II, Item 1A. Risk Factors” in our quarterly reports on Form 10-Q filed subsequent to such Form 10-K, which are incorporated by reference into this prospectus and any prospectus supplement in their entirety, as the same may be updated from time to time by our future filings under the Securities Exchange Act of 1934, as amended (the “Exchange Act”). Each of the risks described in these sections and documents could materially and adversely affect our business, financial condition, results of operations and prospects and the market price of our shares and any other securities we may issue. Moreover, the risks and uncertainties discussed in the foregoing documents are not the only risks and uncertainties that we face, and our business, financial condition, results of operations and prospects and the market price of our shares and any other securities we may issue could be materially adversely affected by other matters that are not known to us or that we currently do not consider to be material risks to our business.

### Risks Related to the Company and its Recently Announced Asset Purchase Agreement

*The Company may not be able to continue as a going concern.*

During the six months ended January 31, 2023, the Company incurred a net loss of \$21,955,000 and used cash in operating activities of \$14,891,000. The Company believes that based on its fiscal 2023 forecast, its current cash and cash equivalents level is not sufficient for its foreseeable liquidity and capital resource needs over at least the next twelve (12) months, which conditions raise substantial doubt about the Company’s ability to continue as a going concern for one year after the date that the unaudited interim financial statements are issued.

In response to these conditions, the Company is evaluating various financing strategies to obtain sufficient additional liquidity to meet its operating and capital requirements for the next twelve months following the date of issuance of the unaudited interim consolidated financial statements. Specifically, on March 10, 2023, the Company signed a commitment letter providing for up to \$8,000,000 of a revolving line of credit subject to closing, and as previously disclosed, is exploring various strategic alternatives including the sale of segment operating assets. On March 16, 2023, the Company entered into an Asset Purchase Agreement with respect to the sale to Labcorp of substantially all the operating assets and assignment of certain liabilities which are necessary for Labcorp to operate the business of the Clinical Labs division. See “Prospectus Summary – Recent Developments”. However, there can be no assurance that either of these capital raising strategies will be successful, and the Company may need to raise additional capital during the current fiscal year. The Company also believes it has the ability to raise additional funds, either through additional debt secured by real property owned, private debt, selling preferred stock, utilizing at-the-market sales agreement facility, or through other sources, but there can be no assurances that the Company will be able to raise capital pursuant to the foregoing on favorable terms or at all. Our liquidity plans are subject to a number of risks and uncertainties, some of which are outside our control. Macroeconomic conditions could limit our ability to successfully execute our business plans and therefore adversely affect our liquidity plans. Our most recent unaudited interim financial statements incorporated by reference into this prospectus do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or the amounts and classifications of liabilities that may result should the Company be unable to continue as a going concern.

*There can be no guarantee that the asset sale will be completed and, if not completed, we may have to file for bankruptcy and liquidation.*

The consummation of the asset sale is subject to the satisfaction or waiver of various conditions, including the approval of the asset sale by our stockholders. We cannot guarantee that the closing conditions set forth in the Asset Purchase Agreement will be satisfied. If we are unable to satisfy the closing conditions in Buyer’s favor or if other mutual closing conditions are not satisfied, Buyer will not be obligated to complete the asset sale. If the asset sale is not completed, our board of directors, in discharging its fiduciary obligations to our stockholders, will evaluate other strategic alternatives that may be available, which alternatives may not be as favorable to our stockholders as the asset sale and may include a bankruptcy and liquidation of the Company.

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*The Company has incurred and will continue to incur substantial expenses, including transaction-related costs, pending the asset sale.*

Claims, liabilities and expenses from operations, such as operating costs, salaries, directors’ and officers’ insurance, payroll and local taxes, legal, accounting and consulting fees and office expenses will continue to be incurred by us during the pendency of the asset sale. Further, Enzo has incurred, and expects to continue to incur, a number of non-recurring transaction-related costs in initiating and completing the asset sale. Non-recurring transaction costs include, but are not limited to, fees paid to Enzo’s financial, legal and accounting advisors, filing fees and printing costs. These fees and costs have been, and will continue to be, substantial. We cannot estimate what the aggregate of these expenses will be and these costs may be higher than expected. There can be no assurance of the exact amount of net cash proceeds Enzo will receive from the asset sale or the exact timing at which it will receive such proceeds. Therefore, it is uncertain the extent to which our financial condition and operations will benefit from or improve as a result of or after the asset sale.

The Purchase Agreement also includes customary termination provisions for both the Company and Buyer and provides that, in connection with the termination of the Purchase Agreement under specified circumstances, including termination by the Company to accept and enter into a definitive agreement with respect to an unsolicited Superior Proposal, the Company will be required to pay Buyer a termination fee of \$5,000,000, or reimbursement of Buyer’s expenses of up to \$5,000,000.

Subject to the terms and conditions stated in the Purchase Agreement, after shareholder approval of the Transaction, Buyer will be obligated to pay a fee to the Company for each day after the date of such approval until the closing of the Transaction. At the closing of the Transaction, such fee will be wholly or partially credited against the purchase price.

There can be no assurance that the Purchase Agreement will close and that if it does close, the exact proceeds to be received by the Company.

### Risks Related to our Common Stock

*Our stock price has been volatile, which could result in substantial losses for investors.*

Our common stock is quoted on the New York Stock Exchange, and there has been historical volatility in the market price of our common stock. The trading price of our common stock has been, and is likely to continue to be, subject to significant fluctuations due to a variety of factors, including:

- fluctuations in our quarterly operating and earnings per share results;;
- the gain or loss of significant contracts;
- the carrying value of our goodwill and intangible assets;
- announcements of technological innovations or new commercial products by our competitors or us;
- loss of key personnel;
- delays in the development and introduction of new products;
- legislative or regulatory changes;
- general trends in the industries we operate;
- recommendations and/or changes in estimates by equity and market research analysts;
- biological or medical discoveries;
- disputes and/or developments concerning intellectual property, including patents and litigation matters;
- public concern as to the safety of new technologies;
- sales of common stock of existing holders;
- securities class action or other litigation;
- developments in our relationships with current or future customers and suppliers; and
- general economic conditions, both in the United States and worldwide.

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In addition, the stock market in general has experienced extreme price and volume fluctuations that have affected the market price of our common stock, as well as the stock of many companies in our industries. Often, price fluctuations are unrelated to operating performance of the specific companies whose stock is affected.

In the past, following periods of volatility in the market price of a company's stock, securities class action litigation has occurred against the issuing company. If we were subject to this type of litigation in the future, we could incur substantial costs and a diversion of our management's attention and resources, each of which could have a material adverse effect on our revenue and earnings. Any adverse determination in this type of litigation could also subject us to significant liabilities.

***Because we do not intend to pay cash dividends on our common stock, an investor in our common stock will benefit only if it appreciates in value.***

We currently intend to retain our retained earnings and future earnings, if any, to finance the expansion of our business and do not expect to pay any cash dividends on our common stock in the foreseeable future. As a result, the success of an investment in our common stock will depend entirely upon any future appreciation. There is no guarantee that our common stock will appreciate in value or even maintain the price at which investors purchased their shares.

***Adverse capital and credit market conditions could affect our liquidity.***

Adverse capital and credit market conditions could affect our ability to meet liquidity needs, as well as our access to capital and cost of capital. The capital and credit markets have experienced extreme volatility and disruption in recent years. Our results of operations, financial condition, cash flows and capital position could be materially adversely affected by continued disruptions in the capital and credit markets.

***It may be difficult for a third party to acquire us, which could inhibit stockholders from realizing a premium on their stock price.***

We are subject to the New York anti-takeover laws regulating corporate takeovers. These anti-takeover laws prohibit certain business combinations between a New York corporation and any "interested shareholder" (generally, the beneficial owner of 20% or more of the corporation's voting shares) for five years following the time that the shareholder became an interested shareholder, unless the corporation's board of directors approved the transaction prior to the interested shareholder becoming interested.

Our certificate of incorporation, as amended, and by-laws contain provisions that could have the effect of delaying, deferring or preventing a change in control of us that stockholders may consider favorable or beneficial. These provisions could discourage proxy contests and make it more difficult for stockholders to elect directors and take other corporate actions. These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock. These provisions include advance notice requirements for the submission by stockholders of nominations for election to the board of directors and for proposing matters that can be acted upon by stockholders at a meeting.

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## FORWARD-LOOKING STATEMENTS

This prospectus, the documents we have filed with the SEC that are incorporated by reference herein and any related free writing prospectus may contain forward-looking statements within the meaning of Section 27A of the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended. These statements are based on our current expectations, assumptions, estimates and projections about our business and our industry, and involve known and unknown risks, uncertainties and other factors that may cause our results, levels of activity, performance or achievement to be materially different from any future results, levels of activity, performance or achievements expressed or implied by the forward-looking statements.

In some cases, you can identify forward-looking statements by terms such as "anticipate," "believe," "could," "estimate," "expect," "intend," "may," "plan," "potential," "predict," "project," "should," "will," "would" and similar expressions intended to identify forward-looking statements. Forward-looking statements include information concerning possible or assumed future results of operations of our business, the expected completion and timing of the Transaction and other information relating to

the Transaction, including pro forma information regarding the Company assuming the Transaction is consummated, including our pro forma results of operations and financial condition as reflected in our unaudited pro forma condensed consolidated financial information incorporated by reference in this prospectus, and may involve known and unknown risks over which we have no control, including, without limitation: (i) the satisfaction of the conditions to consummate the Transaction, including the approval of the Transaction by our shareholders; (ii) the occurrence of any event, change or other circumstance that could give rise to the termination of the Purchase Agreement; (iii) the outcome of any legal proceedings that may be instituted against us and others following the announcement of the Purchase Agreement; (iv) the amount of the costs, fees, expenses and charges related to the Transaction; (v) the effect of the announcement of the Transaction on our customer relationships, operating results and business generally, including the ability to retain key employees; and (vi) the amount of cash we will hold after the Transaction or our net proceeds from the Transaction. While we believe that we have a reasonable basis for each forward-looking statement, we caution you that these statements are based on a combination of facts and factors currently known by us and our projections of the future, about which we cannot be certain. We discuss many of these risks, uncertainties and other factors in greater detail under the heading “Risk Factors” contained in this prospectus. Given these risks, uncertainties and other factors, you should not place undue reliance on these forward-looking statements. Also, these forward-looking statements represent our estimates and assumptions only as of the date such forward-looking statements are made. You should read carefully this prospectus, together with the documents we have filed with the SEC that are incorporated by reference herein and any related free writing prospectus, completely and with the understanding that our actual future results may be materially different from what we expect. We hereby qualify all of our forward-looking statements by these cautionary statements.

Except as required by law, we assume no obligation to update these forward-looking statements, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future.

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## USE OF PROCEEDS

Unless otherwise specified in the applicable prospectus supplement, we intend to use the net proceeds from the sale of securities offered by this prospectus for general corporate purposes, including without limitation, the funding of capital expenditures and working capital needs. We will set forth in the prospectus supplement our intended use for the net proceeds received from the sale of any securities.

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## THE SECURITIES WE MAY OFFER

The descriptions of the securities contained in this prospectus, together with the applicable prospectus supplements, summarize all the material terms and provisions of the various types of securities that we may offer. We will describe in the applicable prospectus supplement relating to any securities the particular terms of the securities offered by that prospectus supplement. If we indicate in the applicable prospectus supplement, the terms of the securities may differ from the terms we have summarized below. We will also include in the prospectus supplement information, where applicable, about material United States federal income tax considerations relating to the securities, and the securities exchange, if any, on which the securities will be listed.

We may sell from time to time, in one or more offerings:

- common stock;
- preferred stock;
- depositary shares;
- debt securities;
- warrants to purchase any of the securities listed above; and
- units consisting of any combination of the securities listed above.

In this prospectus, we refer to the common stock, preferred stock, depositary shares, debt securities, warrants and units collectively as “securities.” The total dollar amount of all securities that we may sell pursuant to this prospectus will not exceed \$150,000,000.

If we issue debt securities at a discount from their original stated principal amount, then, for purposes of calculating the total dollar amount of all securities issued under this prospectus, we will treat the initial offering price of the debt securities as the total original principal amount of the debt securities.

This prospectus may not be used to consummate a sale of securities unless it is accompanied by a prospectus supplement.

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## DESCRIPTION OF CAPITAL STOCK

### General Matters

Pursuant to our Certificate of Incorporation, as amended, the total amount of our authorized capital stock is 100,000,000 shares, which consists of 75,000,000 shares of authorized common stock, par value \$0.01 per share, and 25,000,000 shares of authorized preferred stock, par value \$0.01 per share. As of May 11, 2023, we had outstanding 49,728,084 shares of common stock and no shares of preferred stock. As of May 11, 2023, we had approximately 741 holders of record of our common stock.

The following summary of our capital stock does not purport to be complete and is subject to and qualified in its entirety by, our Certificate of Incorporation, as amended, and our Amended and Restated By-laws, which are filed as exhibits to the registration statement of which this prospectus forms a part.

### Common Stock

The holders of shares of common stock are entitled to one vote for each share held of record on all matters submitted to a vote of the stockholders. All shares of our common stock are entitled to share equally in any dividends our board of directors may declare from legally available sources. Our common stock is traded on the New York Stock Exchange under the symbol “ENZ”. The section below entitled “Certain Provisions of New York Law and of the Company’s Charter and By-laws” contains additional information regarding the rights and preferences of our common stock. The transfer agent and registrar for our common stock is Equiniti.

## **Preferred Stock**

Our board of directors has the authority, without further action by the stockholders, to issue shares of preferred stock in one or more series and to fix and determine the following terms of the preferred stock by resolution: variations in the designations, preferences, and relative, participating, optional or other special rights (including, without limitation, special voting rights, of conversion in common stock or other securities, redemption provisions or sinking fund provisions) as between series and between the preferred stock and any series thereof and the common stock, and the qualifications, limitations or restrictions of such rights, all as shall be stated in a resolution of the board of directors. Shares of preferred stock or any series thereof may have full or limited voting powers, or be without voting powers, all as shall be stated in a resolution of the board of directors.

Any or all of these rights may be greater than the rights of our common stock. We currently have no issued and outstanding preferred stock.

Our board of directors, without stockholder approval, can issue preferred stock with voting, conversion or other rights that could negatively affect the voting power and other rights of the holders of our common stock. Preferred stock could thus be issued quickly with terms calculated to delay or prevent a change in control of the Company or to make it more difficult to remove the Company's management. Additionally, the issuance of preferred stock may have the effect of decreasing the market price of our common stock.

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## **DESCRIPTION OF DEPOSITARY SHARES**

The following description, together with the additional information we include in any applicable prospectus supplement, summarizes the material terms and provisions of the depositary shares that we may offer under this prospectus. The following statements with respect to the depositary shares and depositary receipts are summaries of, and subject to, the detailed provisions of a deposit agreement to be entered into by Enzo Biochem and a depositary to be selected at the time of issue (the "depositary") and the form of depositary receipt. The form of deposit agreement and the form of depositary receipt will be filed with the SEC.

### **General**

We may, at our option, elect to issue fractional shares of preferred stock, rather than full shares of preferred stock. In the event such option is exercised, we may elect to have a depositary issue receipts for depositary shares, each receipt representing a fraction, to be set forth in the prospectus supplement relating to a particular series of preferred stock, of a share of a particular series of preferred stock as described below.

The shares of any series of preferred stock represented by depositary shares will be deposited under a deposit agreement between us and a bank or trust company that we select. Subject to the terms of the deposit agreement, each owner of a depositary share will be entitled, in proportion to the applicable fraction of a share of preferred stock represented by such depositary share, to all the rights and preferences of the preferred stock represented by the depositary share, including dividend, voting, redemption and liquidation rights.

### **Depositary Receipts**

The depositary shares will be evidenced by depositary receipts issued pursuant to the deposit agreement. Depositary receipts will be distributed to those persons purchasing the fractional shares of preferred stock in accordance with the terms of an offering of the preferred stock.

### **Withdrawal of Preferred Stock**

Upon surrender of depositary receipts at the office of the depositary and upon payment of the charges provided in the deposit agreement, a holder of depositary receipts may have the depositary deliver to the holder the whole shares of preferred stock relating to the surrendered depositary receipts. Holders of depositary shares may receive whole shares of the related series of preferred stock on the basis set forth in the related prospectus supplement for such series of preferred stock, but holders of such whole shares will not after the exchange be entitled to receive depositary shares for their whole shares. If the depositary receipts delivered by the holder evidence a number of depositary shares in excess of the number of depositary shares representing the number of whole shares of the related series of preferred stock to be withdrawn, the depositary will deliver to the holder at the same time a new depositary receipt evidencing such excess number of depositary shares.

### **Dividends and Other Distributions**

The depositary will distribute all cash dividends or other cash distributions received for the preferred stock to the record holders of depositary shares relating to the preferred stock in proportion to the numbers of such depositary shares owned by such holders.

In the event of a distribution other than in cash, the depositary will distribute property received by it to the record holders of depositary shares entitled thereto, unless the depositary determines that it is not feasible to make distribution of the property. In that case the depositary may, with our approval, sell such property and distribute the net proceeds from the sale to such holders.

### **Redemption of Depositary Shares**

If a series of preferred stock represented by depositary shares is subject to redemption, the depositary shares will be redeemed from the proceeds received by the depositary resulting from the redemption, in whole or in part, of the series of preferred stock held by the depositary. The redemption price per depositary share will be equal to the applicable fraction of the redemption price per share payable with respect to the series of the preferred stock. Whenever we redeem shares of preferred stock held by the depositary, the depositary will redeem as of the same redemption date the number of depositary shares representing shares of preferred stock redeemed by us. If less than all the depositary shares are to be redeemed, the depositary shares to be redeemed will be selected by lot or pro rata as may be determined by the depositary.

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## **Voting the Preferred Stock**

Upon receipt of notice of any meeting at which the holders of the preferred stock are entitled to vote, the depositary will mail the information contained in such notice of meeting to the record holders of the depositary shares relating to such preferred stock. Each record holder of such depositary shares on the record date, which will be the same date as the record date for the preferred stock, will be entitled to instruct the depositary as to the exercise of the voting rights pertaining to the amount of the preferred stock represented by such holder's depositary shares. The depositary will endeavor, insofar as practicable, to vote the amount of the preferred stock represented by such depositary shares in accordance with such instructions, and we will agree to take all action which may be deemed necessary by the depositary in order to enable the depositary to do so. The depositary will not vote the preferred stock to the extent it does not receive specific instructions from the holders of depositary shares representing such preferred stock.



## **Amendment and Termination of the Deposit Agreement**

We and the depositary at any time may amend the form of depositary receipt evidencing the depositary shares and any provision of the deposit agreement. However, any amendment which materially and adversely alters the rights of the holders of depositary shares will not be effective unless such amendment has been approved by the holders of at least a majority of the depositary shares then outstanding. We or the depositary may terminate the deposit agreement only if all outstanding depositary shares have been redeemed, or there has been a final distribution in respect of the preferred stock in connection with any liquidation, dissolution or winding up of Enzo Biochem and such distribution has been distributed to the holders of depositary receipts.

## **Charges of Depositary**

We will pay all transfer and other taxes and governmental charges arising solely from the existence of the depositary arrangements. We will pay charges of the depositary in connection with the initial deposit of the preferred stock and any redemption of the preferred stock. Holders of depositary receipts will pay other transfer and other taxes and governmental charges and such other charges as are expressly provided in the deposit agreement to be for their accounts.

## **Miscellaneous**

The depositary will forward to the record holders of the depositary shares relating to such preferred stock all reports and communications from us which are delivered to the depositary.

Neither we nor the depositary will be liable if either one is prevented or delayed by law or any circumstance beyond their control in performing the obligations under the deposit agreement. The obligations of Enzo Biochem and the depositary under the deposit agreement will be limited to performance in good faith of their duties thereunder, and they will not be obligated to prosecute or defend any legal proceeding in respect of any depositary shares or preferred stock unless satisfactory indemnity is furnished. The depositary may rely upon written advice of counsel or accountants, or information provided by persons presenting preferred stock for deposit, holders of depositary receipts or other persons believed to be competent and on documents believed to be genuine.

## **Resignation and Removal of Depositary**

The depositary may resign at any time by delivering to us notice of its election to do so, and we may at any time remove the depositary, any such resignation or removal to take effect upon the appointment of a successor depositary and its acceptance of such appointment. Such successor depositary must be appointed within sixty (60) days after delivery of the notice of resignation or removal.

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## **DESCRIPTION OF DEBT SECURITIES**

The following description, together with the additional information we include in any applicable prospectus supplement, summarizes the material terms and provisions of the debt securities that we may offer under this prospectus and the related indenture. While the terms we have summarized below will apply generally to any future debt securities we may offer pursuant to this prospectus, we will describe the particular terms of any debt securities that we may offer in more detail in the applicable prospectus supplement. If we indicate in a prospectus supplement, the terms of any debt securities we offer under that prospectus supplement may differ from the terms we describe below.

We may offer debt securities from time to time in one or more offerings under this prospectus. We will issue any such debt securities under an indenture that we will enter into with a trustee to be named in the indenture. We have filed a form of indenture as an exhibit to the registration statement of which this prospectus is a part. The indenture will be qualified under the Trust Indenture Act of 1939, as in effect on the date of the indenture. We use the term “debenture trustee” to refer to the trustee under the indenture.

The following summaries of material provisions of the debt securities and the indenture are subject to, and qualified in their entirety by reference to, all the provisions of the indenture applicable to a particular series of debt securities.

### **General**

The indenture will provide that debt securities may be issued from time to time in one or more series. The indenture will not limit the amount of debt securities that may be issued thereunder, and the indenture provides that the specific terms of any series of debt securities shall be set forth in, or determined pursuant to, an authorizing resolution, an officers’ certificate and/or a supplemental indenture, if any, relating to such series.

We will describe in each prospectus supplement the following terms relating to a series of debt securities:

- the title or designation of the debt securities;
- whether the debt securities will be secured or unsecured, and the terms of any secured debt;
- the terms of the subordination of any series of subordinated debt securities;
- any limit upon the aggregate principal amount of the debt securities;
- the date or dates on which the debt securities may be issued and on which we will pay the principal on the debt securities;
- the interest rate, which may be fixed or variable, or the method for determining the rate and the date interest will begin to accrue, the date or dates interest will be payable and the record dates for interest payment dates or the method for determining such dates;
- the manner in which the amounts of payment of principal of, premium or interest on the debt securities will be determined, if these amounts may be determined by reference to an index based on a currency or currencies other than that in which the debt securities are denominated or designated to be payable or by reference to a commodity, commodity index, stock exchange index or financial index;
- the currency of denomination of the debt securities;
- if payments of principal of, premium or interest on the debt securities will be made in one or more currencies or currency units other than that or those in which the debt securities are denominated, the manner in which the exchange rate with respect to these payments will be determined;

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- the place or places where the principal of, premium, and interest on the debt securities will be payable, where debt securities of any series may be presented for registration of transfer, exchange or conversion, and where notices and demands to or upon the Company in respect of the debt securities may be made;
- the form of consideration in which principal of, premium or interest on the debt securities will be paid;
- the terms and conditions upon which we may redeem the debt securities;
- any obligation we have to redeem or purchase the debt securities pursuant to any sinking fund, amortization or analogous provisions or at the option of a holder of debt securities;
- the dates on which and the price or prices at which we will repurchase the debt securities at the option of the holders of debt securities and other detailed terms and provisions of these repurchase obligations;
- the denominations in which the debt securities will be issued, if other than denominations of \$1,000 and any integral multiple thereof;
- the portion of principal amount of the debt securities payable upon declaration of acceleration of the maturity date, if other than the principal amount;
- whether the debt securities are to be issued at any original issuance discount and the amount of discount with which such debt securities may be issued;
- whether the debt securities will be issued in the form of certificated debt securities or global debt securities and, in such case, the depository for such global security or securities and the terms and conditions, if any, upon which interests in such global security or securities may be exchanged in whole or in part for the individual securities represented thereby;
- provisions, if any, for the defeasance of the debt securities of a series in whole or in part and any addition or change in the provisions related to satisfaction and discharge;
- the form of the debt securities;
- the terms and conditions upon which the debt securities will be so convertible or exchangeable into securities or property of another person, if at all, and any additions or changes, if any, to permit or facilitate such conversion or exchange;
- whether the debt securities will be subject to subordination and the terms of such subordination;
- provisions, if any, granting special rights to holders of the debt securities upon the occurrence of specified events;
- any restriction or condition on the transferability of the debt securities;
- any addition or change in the provisions related to compensation and reimbursement of the trustee which applies to securities of such series;
- any addition to or change in the events of default described in this prospectus or in the indenture with respect to the debt securities and any change in the acceleration provisions described in this prospectus or in the indenture with respect to the debt securities;
- any addition to or change in the covenants described in this prospectus or in the indenture with respect to the debt securities; and
- any other terms of the debt securities, which may modify or delete any provision of the indenture.

We may issue debt securities that provide for an amount less than their stated principal amount to be due and payable upon declaration of acceleration of their maturity pursuant to the terms of the indenture. We will provide you with information on the federal income tax considerations and other special considerations applicable to any of these debt securities in the applicable prospectus supplement.

#### **Conversion or Exchange Rights**

We will set forth in the prospectus supplement the terms, if any, on which a series of debt securities may be convertible into or exchangeable for our common stock or our other securities. We will include provisions as to whether conversion or exchange is mandatory, at the option of the holder or at our option. We may include provisions pursuant to which the number of shares of our common stock or our other securities that the holders of the series of debt securities receive would be subject to adjustment.

#### **Consolidation, Merger or Sale; No Protection in Event of a Change of Control or Highly Leveraged Transaction**

The indenture will provide that we may not merge or consolidate with or into another entity, or sell other than for cash or lease all or substantially all our assets to another entity, or purchase all or substantially all the assets of another entity unless we are the surviving entity or, if we are not the surviving entity, the successor, transferee or lessee entity expressly assumes all of our obligations under the indenture or the debt securities, as appropriate.

Unless we state otherwise in the applicable prospectus supplement, the debt securities will not contain any provisions that may afford holders of the debt securities additional protection in the event we have a change of control or in the event of a highly leveraged transaction (whether or not such transaction results in a change of control), which could adversely affect holders of debt securities.

#### **Events of Default Under the Indenture**

The following are events of default under the indenture with respect to any series of debt securities that we may issue:

- if we fail to pay interest when due and our failure continues for 90 days and the time for payment has not been extended or deferred;
- if we fail to pay the principal, or premium, if any for 30 days, when due whether by maturity or called for redemption;
- if we fail to pay a sinking fund installment, if any, when due and our failure continues for 30 days;
- if we fail to observe or perform any other covenant relating to such series contained in the debt securities of such series or the indenture, other than a covenant specifically relating to and for the benefit of holders of another series of debt securities, and our failure continues for 90 days after we receive written notice from the debenture trustee or holders of not less than a majority in aggregate principal amount of the outstanding debt securities of the applicable series; and

- if specified events of bankruptcy, insolvency or reorganization occur as to us.

No event of default with respect to a particular series of debt securities (except as to certain events of bankruptcy, insolvency or reorganization) necessarily constitutes an event of default with respect to any other series of debt securities. The occurrence of an event of default may constitute an event of default under any bank credit agreements we may have in existence from time to time. In addition, the occurrence of certain events of default or an acceleration under the indenture may constitute an event of default under certain of our other indebtedness outstanding from time to time.

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If an event of default with respect to debt securities of any series at the time outstanding occurs and is continuing, then the trustee or the holders of not less than a majority in principal amount of the outstanding debt securities of that series may, by a notice in writing to us (and to the debenture trustee if given by the holders), declare to be due and payable immediately the principal (or, if the debt securities of that series are discount securities, that portion of the principal amount as may be specified in the terms of that series) of and premium and accrued and unpaid interest, if any, on all debt securities of that series. Before a judgment or decree for payment of the money due has been obtained with respect to debt securities of any series, the holders of a majority in principal amount of the outstanding debt securities of that series (or, at a meeting of holders of such series at which a quorum is present, the holders of a majority in principal amount of the debt securities of such series represented at such meeting) the acceleration shall be deemed to have been waived, rescinded and annulled if all events of default, other than the non-payment of accelerated principal, premium, if any, and interest, if any, with respect to debt securities of that series, have been cured or waived as provided in the applicable indenture (including payments or deposits in respect of principal, premium or interest that had become due other than as a result of such acceleration) and the Company has deposited with the indenture trustee or paying agent a sum sufficient to pay all amounts owed to the indenture trustee under the indenture, all arrears of interest, if any, on the debt securities, and the principal and premium, if any, on the debt securities that have become due other than by such acceleration. We refer you to the prospectus supplement relating to any series of debt securities that are discount securities for the particular provisions relating to acceleration of a portion of the principal amount of such discount securities upon the occurrence of an event of default.

Subject to the terms of the indenture, if an event of default under the indenture shall occur and be continuing, the debenture trustee will be under no obligation to exercise any of its rights or powers under such indenture at the request or direction of any of the holders of the applicable series of debt securities, unless such holders have offered the debenture trustee reasonable indemnity. The holders of a majority in principal amount of the outstanding debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the debenture trustee, or exercising any trust or power conferred on the debenture trustee, with respect to the debt securities of that series, provided that, subject to the terms of the indenture, the debenture trustee need not take any action that it believes, upon the advice of counsel, might involve it in personal liability or might be unduly prejudicial to the holders not involved in the proceeding.

A holder of the debt securities of any series will only have the right to institute a proceeding under the indenture or to appoint a receiver or trustee, or to seek other remedies if:

- the holder previously has given written notice to the debenture trustee of a continuing event of default with respect to that series;
- the holders of at least a majority in aggregate principal amount of the outstanding debt securities of that series have made written request, and such holders have offered reasonable indemnity to the debenture trustee to institute the proceeding as trustee; and
- the debenture trustee does not institute the proceeding, and does not receive from the holders of a majority in aggregate principal amount of the outstanding debt securities of that series (or at a meeting of holders of such series at which a quorum is present, the holders of a majority in principal amount of the debt securities of such series represented at such meeting) other conflicting directions within 60 days after the notice, request and offer.

These limitations do not apply to a suit instituted by a holder of debt securities if we default in the payment of the principal, premium, if any, or interest on, the debt securities.

We will periodically file statements with the applicable debenture trustee regarding our compliance with specified covenants in the applicable indenture.

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#### **Modification of Indenture; Waiver**

The debenture trustee and we may, without the consent of any holders, execute a supplemental indenture to change the applicable indenture with respect to specific matters, including, among other things:

- to surrender any right or power conferred upon the Company;
- to provide, change or eliminate any restrictions on the payment of principal or of premium, if any, on the debt securities; provided that any such action shall not adversely affect the interests of the holders of debt securities of any series in any material respect;
- to change or eliminate any of the provisions of the indenture; provided that any such change or elimination shall become effective only when there is no outstanding debt security of any series created prior to the execution of such supplemental indenture that is entitled to the benefit of such provision and as to which such supplemental indenture would apply;
- to evidence the succession of another corporation to the Company;
- to evidence and provide for the acceptance of appointment by a successor trustee with respect to one or more series of debt securities and to add or change provisions of the indenture to facilitate the administration of the trusts thereunder by more than one trustee;
- to cure any ambiguity, mistake, manifest error, omission, defect or inconsistency in the indenture or to conform the text of any provision in the indenture or in any supplemental indenture to any description thereof in the applicable section of a prospectus, prospectus supplement or other offering document that was intended to be a verbatim recitation of a provision of the indenture or of any supplemental indenture;
- to add to or change or eliminate any provision of the indenture as shall be necessary or desirable in accordance with any amendments to the Trust Indenture Act;
- to make any change in any series of debt securities that does not adversely affect in any material respect the interests of the holders of such debt securities; and
- to supplement any of the provisions of the indenture to such extent as shall be necessary to permit or facilitate the defeasance and discharge of any series of debt securities; provided that any such action shall not adversely affect the interests of the holders of debt securities of such series or any other series of debt securities.

In addition, under the indenture, the rights of holders of a series of debt securities may be changed by us and the debenture trustee with the written consent of the holders of at least a majority in aggregate principal amount of the outstanding debt securities of each series (or, at a meeting of holders of such series at which a quorum is present, the holders of a majority in principal amount of the debt securities of such series represented at such meeting) that is affected. However, the debenture trustee and we may make the following changes only with the consent of each holder of any outstanding debt securities affected:

- extending the fixed maturity of the series of debt securities;
- reducing the principal amount, reducing the rate of or extending the time of payment of interest, or any premium payable upon the redemption of any debt securities;
- reducing the principal amount of discount securities payable upon acceleration of maturity;
- making the principal of or premium or interest on any debt security payable in currency other than that stated in the debt security;
- impairing the right to institute suit for the enforcement of any payment on or after the fixed maturity date of any series of debt securities;
- materially adversely affecting the economic terms of any right to convert or exchange any debt securities; and
- reducing the percentage of debt securities, the holders of which are required to consent to any amendment or waiver; or modifying, without the written consent of the trustee, the rights, duties or immunities of the trustee.

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Except for certain specified provisions, the holders of at least a majority in principal amount of the outstanding debt securities of any series (or, at a meeting of holders of such series at which a quorum is present, the holders of a majority in principal amount of the debt securities of such series represented at such meeting) may, on behalf of the holders of all debt securities of that series, waive our compliance with provisions of the indenture. The holders of a majority in principal amount of the outstanding debt securities of any series may, on behalf of the holders of all the debt securities of such series, waive any past default under the indenture with respect to that series and its consequences, other than a default in the payment of the principal of, premium or any interest on any debt security of that series; provided, however, that the holders of a majority in principal amount of the outstanding debt securities of any series may rescind an acceleration and its consequences, including any related payment default that resulted from the acceleration.

#### **Discharge**

The indenture will provide that we can elect to be discharged from our obligations with respect to one or more series of debt securities. In order to exercise our rights to be discharged with respect to a series, we must deposit with the trustee money or government obligations sufficient to pay all the principal of, the premium, if any, and interest on, the debt securities of the series on the dates payments are due.

#### **Form, Exchange and Transfer**

We will issue the debt securities of each series only in fully registered form without coupons and, unless we otherwise specify in the applicable prospectus supplement, in denominations of \$1,000 and any integral multiple thereof. The indenture provides that we may issue debt securities of a series in temporary or permanent global form and as book-entry securities that will be deposited with a depository named by us and identified in a prospectus supplement with respect to that series.

At the option of the holder, subject to the terms of the indenture and the limitations applicable to global securities described in the applicable prospectus supplement, the holder of the debt securities of any series can exchange the debt securities for other debt securities of the same series, in any authorized denomination and of like tenor and aggregate principal amount.

Subject to the terms of the indenture and the limitations applicable to global securities set forth in the applicable prospectus supplement, holders of the debt securities may present the debt securities for exchange or for registration of transfer, duly endorsed or with the form of transfer endorsed thereon duly executed if so required by us or the security registrar, at the office of the security registrar or at the office of any transfer agent designated by us for this purpose. Unless otherwise provided in the debt securities that the holder presents for transfer or exchange or in the indenture, we will make no service charge for any registration of transfer or exchange, but we may require payment of any taxes or other governmental charges.

We will name in the applicable prospectus supplement the security registrar, and any transfer agent in addition to the security registrar, that we initially designate for any debt securities. We may at any time designate additional transfer agents or rescind the designation of any transfer agent or approve a change in the office through which any transfer agent acts, except that we will be required to maintain a transfer agent in each place of payment for the debt securities of each series.

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If we elect to redeem the debt securities of any series, we will not be required to:

- issue, register the transfer of, or exchange any debt securities of that series during a period beginning at the opening of business 15 days before the day of mailing of a notice of redemption of any debt securities that may be selected for redemption and ending at the close of business on the day of the mailing; or
- register the transfer of or exchange any debt securities so selected for redemption, in whole or in part, except the unredeemed portion of any debt securities we are redeeming in part.

#### **Information Concerning the Debenture Trustee**

The debenture trustee, other than during the occurrence and continuance of an event of default under the indenture, undertakes to perform only those duties as are specifically set forth in the indenture. Upon an event of default under the indenture, the debenture trustee must use the same degree of care as a prudent person would exercise or use in the conduct of his or her own affairs. Subject to this provision, the debenture trustee is under no obligation to exercise any of the powers given it by the indenture at the request of any holder of debt securities unless it is offered reasonable security and indemnity against the costs, expenses and liabilities that it might incur.

#### **Payment and Paying Agents**

Unless we otherwise indicate in the applicable prospectus supplement, we will make payment of the interest on any debt securities on any interest payment date to the person in whose name the debt securities, or one or more predecessor securities, are registered at the close of business on the regular record date for the interest.

Unless we otherwise indicate in the applicable prospectus supplement, we will pay principal of and any premium and interest on the debt securities of a particular series at the office of the indenture trustee or, at the option of the Company, by wire or check payable to the holder. Unless we otherwise indicate in a prospectus supplement, we will designate the corporate trust office of the debenture trustee our sole paying agent for payments with respect to debt securities of each series. We will name in the applicable prospectus supplement any other paying agents that we initially designate for the debt securities of a particular series. We will maintain a paying agent in each place of payment for the debt securities of a particular series. All money we pay to a paying agent or the debenture trustee for the payment of the principal of or any premium or interest on any debt securities which remains unclaimed at the end of two years after such principal, premium or interest has become due and payable will be repaid to us, and the holder of the security thereafter may look only to us for payment thereof.

#### **Governing Law**

The indenture and the debt securities will be governed and construed in accordance with the laws of the State of New York.

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### **DESCRIPTION OF WARRANTS**

The following description, together with the additional information we may include in any applicable prospectus supplements, summarizes the material terms and provisions of the warrants that we may offer under this prospectus and the related warrant agreements and warrant certificates. While the terms summarized below will apply generally to any warrants that we may offer, we will describe the particular terms of any series of warrants in more detail in the applicable prospectus supplement. If we indicate in the prospectus supplement, the terms of any warrants offered under that prospectus supplement may differ from the terms described below. Specific warrant agreements will contain additional important terms and provisions and will be incorporated by reference as an exhibit to the registration statement that includes this prospectus.

#### **General**

We may issue warrants for the purchase of common stock, preferred stock or debt securities in one or more series. We may issue warrants independently or together with common stock, preferred stock and debt securities, and the warrants may be attached to or separate from these securities.

We will evidence each series of warrants by warrant certificates that we will issue under a separate agreement. We may enter into a warrant agreement with a warrant agent. If we engage a warrant agent, each warrant agent will be a bank that we select which has its principal office in the United States. We will indicate the name and address of the warrant agent in the applicable prospectus supplement relating to a particular series of warrants.

Before exercising their warrants, holders of warrants will not have any of the rights of holders of the securities purchasable upon such exercise, including:

- in the case of warrants to purchase debt securities, the right to receive payments of principal of, or premium, if any, or interest on, the debt securities purchasable upon exercise or to enforce covenants in the applicable indenture; or
- in the case of warrants to purchase common stock or preferred stock, the right to receive dividends, if any, or, payments upon our liquidation, dissolution or winding up or to exercise voting rights, if any.

#### **Additional Information**

We will describe in the applicable prospectus supplement the terms of the series of warrants, including:

- the offering price and aggregate number of warrants offered;
- the currency for which the warrants may be purchased;
- if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each such security or each principal amount of such security;
- if applicable, the date on and after which the warrants and the related securities will be separately transferable;
- in the case of warrants to purchase debt securities, the principal amount of debt securities purchasable upon exercise of one warrant and the price at, and currency in which, this principal amount of debt securities may be purchased upon such exercise;
- in the case of warrants to purchase common stock or preferred stock, the number of shares of common stock or preferred stock, as the case may be, purchasable upon the exercise of one warrant and the price at which these shares may be purchased upon such exercise;
- the effect of any merger, consolidation, sale or other disposition of our business on the warrant agreement and the warrants;

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- the terms of any rights to redeem or call the warrants;
- any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the warrants;
- the dates on which the right to exercise the warrants will commence and expire;
- the manner in which the warrant agreement and warrants may be modified;
- a discussion on any material or special United States federal income tax consequences of holding or exercising the warrants;
- the terms of the securities issuable upon exercise of the warrants; and
- any other specific terms, preferences, rights or limitations of or restrictions on the warrants.

#### **Exercise of Warrants**

Each warrant will entitle the holder to purchase the securities that we specify in the applicable prospectus supplement at the exercise price that we describe in the applicable prospectus supplement. Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants at any time up to 5 p.m., Eastern time, on the expiration date that we set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

Holders of the warrants may exercise the warrants by delivering the warrant certificate representing the warrants to be exercised together with specified information, and paying the required amount to the warrant agent in immediately available funds, as provided in the applicable prospectus supplement. We will set forth on the reverse side of the warrant certificate and in the applicable prospectus supplement the information that the holder of the warrant will be required to deliver to the warrant agent.

Upon receipt of the required payment and the warrant certificate properly completed and duly executed at the corporate trust office of the warrant agent or any other office indicated in the applicable prospectus supplement, we will issue and deliver the securities purchasable upon such exercise. If fewer than all of the warrants represented by the warrant certificate are exercised, then we will issue a new warrant certificate for the remaining amount of warrants. If we so indicate in the applicable prospectus supplement, holders of the warrants may surrender securities as all or part of the exercise price for warrants.

#### **Enforceability of Rights by Holders of Warrants**

Each warrant agent will act solely as our agent under the applicable warrant agreement and will not assume any obligation or relationship of agency or trust with any holder of any warrant. A single bank or trust company may act as warrant agent for more than one issue of warrants. A warrant agent will have no duty or responsibility in case of any default by us under the applicable warrant agreement or warrant, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a warrant may, without the consent of the related warrant agent or the holder of any other warrant, enforce by appropriate legal action its right to exercise, and receive the securities purchasable upon exercise of, its warrants.

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### **DESCRIPTION OF UNITS**

We may issue units comprised of one or more of the other securities described in this prospectus in any combination. Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit. Thus, the holder of a unit will have the rights and obligations of a holder of each included security. The unit agreement under which a unit is issued may provide that the securities included in the unit may not be held or transferred separately, at any time or at any time before a specified date. The applicable prospectus supplement may describe:

- the designation and terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- any provisions for the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units;
- the terms of the unit agreement governing the units;
- United States federal income tax considerations relevant to the units; and
- whether the units will be issued in fully registered global form.

This summary of certain general terms of units and any summary description of units in the applicable prospectus supplement do not purport to be complete and are qualified in their entirety by reference to all provisions of the applicable unit agreement and, if applicable, collateral arrangements and depository arrangements relating to such units. The forms of the unit agreements and other documents relating to a particular issue of units will be filed with the SEC each time we issue units, and you should read those documents for provisions that may be important to you.

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### **PLAN OF DISTRIBUTION**

We may sell the securities through underwriters or dealers, through agents, or directly to one or more purchasers. The accompanying prospectus supplement will describe the terms of the offering of the securities, including:

- the name or names of any underwriters;
- the purchase price of the securities being offered and the proceeds we will receive from the sale;
- any over-allotment options pursuant to which underwriters may purchase additional securities from us;
- any agency fees or underwriting discounts and other items constituting agents' or underwriters' compensation;
- any public offering price;
- any discounts or concessions allowed or reallocated or paid to dealers; and
- any securities exchange or market on which the securities may be listed.

If underwriters are used in the sale, they will acquire the securities for their own account and may resell the securities from time to time in one or more transactions at a fixed public offering price or at varying prices determined at the time of the sale. The obligations of the underwriters to purchase the securities will be subject to the conditions set forth in the applicable underwriting agreement. We may offer the securities to the public through underwriting syndicates represented by managing underwriters or by underwriters without a syndicate. Subject to certain conditions, the underwriters will be obligated to purchase all the securities offered by the prospectus supplement. We may change from time to time the public offering price and any discounts or concessions allowed or reallocated or paid to dealers. We may use underwriters with whom we have a material relationship. We will describe such relationships in the prospectus supplement naming the underwriter and the nature of any such relationship.

We may sell securities directly or through agents we designate from time to time. We will name any agent involved in the offering and sale of the securities, and we will describe any commissions we will pay the agent in the prospectus supplement. Unless the prospectus supplement states otherwise, our agent will act on a best efforts basis for the period of its appointment.

We may engage in “at the market offerings” of our common stock, which are offerings into an existing trading market, at other than a fixed price, on or through the facilities of a national securities exchange or to or through a market maker otherwise than on an exchange.

We may enter into derivative transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement indicates, in connection with those derivatives, the third parties may sell securities covered by this prospectus and the applicable prospectus supplement, including short sale transactions. If so, the third party may use securities pledged by us or borrowed from us or others to settle those sales or to close out any related open borrowings of common shares, and may use securities received from us in settlement of those derivatives to close out any related open borrowings of common shares. The third party in such sale transactions will be an underwriter and, if not identified in this prospectus, will be identified in the applicable prospectus supplement or a post-effective amendment to this registration statement.

Our common stock is listed on the New York Stock Exchange. All securities we offer other than common stock will be new issues of securities with no established trading market. Any underwriters may make a market in these securities, but will not be obligated to do so and may discontinue any market making at any time without notice. We cannot guarantee the liquidity of the trading markets for any securities.

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We may provide agents and underwriters with indemnification against civil liabilities related to this offering, including liabilities under the Securities Act, or contribution with respect to payments that the agents or underwriters may make with respect to these liabilities. Agents and underwriters may engage in transactions with, or perform services for, us in the ordinary course of business.

Rules of the SEC may limit the ability of any underwriters to bid for or purchase securities before the distribution of the securities is completed. However, underwriters may engage in the following activities in accordance with the rules:

- Stabilizing transactions — Underwriters may make bids or purchases for the purpose of pegging, fixing or maintaining the price of the shares, so long as stabilizing bids do not exceed a specified maximum.
- Over-allotments and syndicate covering transactions — Underwriters may sell more shares of our common stock than the number of shares that they have committed to purchase in any underwritten offering. This over-allotment creates a short position for the underwriters. This short position may involve either “covered” short sales or “naked” short sales. Covered short sales are short sales made in an amount not greater than the underwriters’ over-allotment option to purchase additional shares in any underwritten offering. The underwriters may close out any covered short position either by exercising their over-allotment option or by purchasing shares in the open market. To determine how they will close the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market, as compared to the price at which they may purchase shares through the over-allotment option. Naked short sales are short sales in excess of the over-allotment option. The underwriters must close out any naked position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that, in the open market after pricing, there may be downward pressure on the price of the shares that could adversely affect investors who purchase shares in the offering.
- Penalty bids — If underwriters purchase shares in the open market in a stabilizing transaction or syndicate covering transaction, they may reclaim a selling concession from other underwriters and selling group members who sold those shares as part of the offering.

Similar to other purchase transactions, an underwriter’s purchases to cover the syndicate short sales or to stabilize the market price of our securities may have the effect of raising or maintaining the market price of our securities or preventing or mitigating a decline in the market price of our securities. As a result, the price of the securities may be higher than the price that might otherwise exist in the open market. The imposition of a penalty bid might also have an effect on the price of shares if it discourages resales of the securities.

If commenced, the underwriters may discontinue any of the activities at any time.

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## **CERTAIN PROVISIONS OF NEW YORK LAW AND OF THE COMPANY’S CHARTER AND BY-LAWS**

*The following paragraphs summarize certain provisions of the New York Business Corporation Law (“NYBCL”), and our Certificate of Incorporation, as amended, and our Amended and Restated By-laws. The summary does not purport to be complete and is subject to and qualified in its entirety by reference to the NYBCL and to our bylaws, copies of which are on file with the SEC as exhibits to the registration statement of which this prospectus forms a part. See “Where You Can Find More Information.”*

*General.* Certain provisions of our Certificate of Incorporation, as amended, and our Amended and Restated By-laws and New York law could make our acquisition by a third party, a change in our incumbent management, or a similar change of control more difficult, including:

- an acquisition of us by means of a tender or exchange offer;
- an acquisition of us by means of a proxy contest or otherwise; or
- the removal of a majority or all of our incumbent officers and directors.

These provisions, which are summarized below, are likely to discourage certain types of coercive takeover practices and inadequate takeover bids. These provisions are also designed to encourage persons seeking to acquire control of us to first negotiate with our board of directors. We believe that these provisions help to protect our potential ability to negotiate with the proponent of an unfriendly or unsolicited proposal to acquire or restructure us, and that this benefit outweighs the potential disadvantages of discouraging such a proposal because our ability to negotiate with the proponent could result in an improvement of the terms of the proposal.

*Election and removal of directors.* Our bylaws provide that the size of the board of directors shall be fixed at five (5) directors. The directors are to be elected at the annual meeting of the stockholders, with a term expiring at the annual meeting of shareholders held in the year following the year of their election or until his successor is elected and qualified. Any director or the entire board of directors may be removed, with cause, by the affirmative vote of (i) the holders of 80% of the combined voting power of the then outstanding shares of stock entitled to vote generally in the election of directors, voting together as a single class and (ii) a majority of such shares beneficially owned by the persons not affiliated with an interested shareholder. Additionally, our bylaws provide that any incumbent director nominee who fails to receive a majority of the votes cast in an election that is not a contested election shall promptly tender his or her resignation to the board of directors for their consideration.

*Stockholder meetings.* Our bylaws provide that the stockholders may not call a special meeting of the stockholders of our company. Instead, special meetings of the stockholders may be called by the Board of Directors pursuant to a resolution approved by a majority of the entire board of directors.

*Requirements for advance notification of stockholder nominations and proposals.* Our bylaws establish advance notice procedures with respect to stockholder

proposals and the nomination of candidates for election as directors, other than nominations made by or at the direction of the board of directors or a committee of the board.

*New York anti-takeover law.* We are subject to certain “business combination” provisions of Section 912 of the NYBCL and expect to continue to be so subject if and for so long as we have a class of securities registered under Section 12 of the Securities Exchange Act of 1934. Section 912 provides, with certain exceptions (which include, among others, transactions with shareholders who became interested prior to the effective date of an amendment to our Certificate of Incorporation providing that we would be subject to Section 912 if such corporation did not then have a class of stock registered pursuant to Section 12 of the Exchange Act), that a New York corporation may not engage in a “business combination” (e.g., merger, consolidation, recapitalization or disposition of stock) with any “interested shareholder” for a period of five years from the date that such person first became an interested shareholder unless:

(i) the transaction resulting in a person becoming an interested shareholder was approved by the board of directors of the corporation prior to that person becoming an interested shareholder; or

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(ii) the business combination is approved by the holders of a majority of the outstanding voting stock not beneficially owned by such interested shareholder; or

(iii) the business combination is approved by the disinterested shareholders at a meeting called no earlier than five years after the interested shareholder’s stock acquisition date; or

(iv) the business combination meets certain valuation requirements for the stock of a New York corporation.

An “interested shareholder” is defined as any person who (a) is the beneficial owner of 20% or more of the outstanding voting stock of a New York corporation or (b) is an affiliate or associate of a corporation that at any time during the prior five years was the beneficial owner, directly or indirectly, of 20% or more of the then outstanding voting stock.

A “business combination” includes mergers, asset sales and other transactions resulting in a financial benefit to the interested shareholder.

The “stock acquisition date”, with respect to any person and any New York corporation, means the date that such person first becomes an interested shareholder of such corporation.

*No cumulative voting.* Our Certificate of Incorporation, as amended, and our Amended and Restated By-laws do not provide for cumulative voting in the election of directors.

*Limitation of liability.* As permitted by the NYBCL, our Certificate of Incorporation, as amended provides that a director will not be personally liable to us or our stockholders for damages for any breach of duty in his or her capacity as a director unless a judgment or other final adjudication adverse to such director establishes that (i) his or her acts or omissions were in bad faith or involved intentional misconduct or a knowing violation of law, (ii) such director personally gained in fact a financial profit or other advantage to which he or she was not legally entitled or (iii) his or her acts violated Section 719 of the NYBCL. As a result of this provision, we and our stockholders may be unable to obtain monetary damages from a director for breach of his or her duty of care.

Our Certificate of Incorporation, as amended, and our Amended and Restated By-laws also provide for the indemnification of our directors and officers to the fullest extent authorized by the NYBCL. Insofar as indemnification for liabilities under the Securities Act may be permitted to directors, officers or controlling persons of our company pursuant to our Certificate of Incorporation, as amended, our Amended and Restated By-laws and the NYBCL, we have been informed that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

We have the power to purchase and maintain insurance on behalf of any person who is or was one of our directors or officers, or is or was serving at our request as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other business against any liability asserted against the person or incurred by the person in any of these capacities, or arising out of the person’s fulfilling one of these capacities, and related expenses, whether or not we would have the power to indemnify the person against the claim under the provisions of the NYBCL. We intend to maintain director and officer liability insurance on behalf of our directors and officers.

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## LEGAL MATTERS

The validity of the issuance of the securities described herein has been passed upon for us by McDermott Will & Emery LLP, New York, New York. Additional legal matters may be passed upon for us or any underwriters, dealers or agents, by counsel that we will name in the applicable prospectus supplement.

## EXPERTS

The consolidated balance sheets of Enzo Biochem, Inc. and subsidiaries as of July 31, 2022 and 2021 and the related consolidated statements of operations, comprehensive income (loss), stockholders’ equity, and cash flows for each of the years in the three-year period ended July 31, 2022, and financial statement schedule for each of the years in the three-year period ended July 31, 2022 have been audited by EisnerAmper LLP, independent registered public accounting firm, as stated in their reports, which are incorporated herein by reference, which reports (1) express an unqualified opinion on the financial statements and financial statement schedule, and (2) express an unqualified opinion on the effectiveness of internal control over financial reporting as of July 31, 2022. Such financial statements and financial statement schedule have been incorporated herein by reference in reliance on the reports of such firm given upon their authority as experts in accounting and auditing.

## INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to “incorporate by reference” the information we file with them, which means that we can disclose important information to you by referring you to those documents instead of having to repeat the information in this prospectus. The information incorporated by reference is considered to be part of this prospectus, and later information that we file with the SEC will automatically update and supersede this information. We incorporate by reference the document listed below and any future filings made with the SEC under Sections 13(a), 13(c), 14, or 15(d) of the Exchange Act (in each case, other than those documents or the portions of those documents deemed to be furnished and not filed in accordance with SEC rules) between the date of this prospectus and the termination of the offering:

- our Annual Report on Form 10-K for the fiscal year ended July 31, 2022 (including the information specifically incorporated by reference into our Annual Report on Form 10-K from our revised definitive proxy statement on Schedule 14A filed with the SEC on December 21, 2022) filed with the SEC on [October 14, 2022](#) and as amended on [November 25, 2022](#);
- our Quarterly Reports on Form 10-Q for the fiscal quarters ended October 31, 2022 and January 31, 2023 filed with the SEC on [December 12, 2022](#) and [March 20, 2023](#), respectively;



- our Current Reports on Form 8-K (other than the information furnished pursuant to Item 2.02 or 7.01 thereof or related exhibits furnished pursuant to Item 9.01 thereof) filed with the SEC on [October 20, 2022](#), [November 4, 2022](#), [February 3, 2023](#), [March 16, 2023](#), [April 5, 2023](#), [April 13, 2023](#) and [May 8, 2023](#);

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- the description of our common stock contained in our registration statement on Form 8-A filed with the SEC on December 8, 1999, including any amendment or report filed for the purpose of updating such description; and
- the Company's unaudited pro forma condensed consolidated financial information as of and for the six months ended January 31, 2023 and for the years ended July 31, 2022 and July 31, 2021 and the notes thereto included in our Definitive Proxy Statement on [Schedule 14A](#) filed with the SEC on April 24, 2023.

This prospectus is part of a registration statement on Form S-3 we have filed with the SEC under the Securities Act. This prospectus does not contain all of the information in the registration statement. We have omitted certain parts of the registration statement, as permitted by the rules and regulations of the SEC. You may inspect and copy the registration statement, including exhibits, at the SEC's website at [www.sec.gov](http://www.sec.gov). Our statements in this prospectus about the contents of any contract or other document are not necessarily complete. You should refer to the copy of each contract or other document we have filed as an exhibit to the registration statement for complete information.

You may request a copy of any or all of the information incorporated by reference, at no cost, by writing or telephoning us at the following address:

Enzo Biochem, Inc.  
81 Executive Blvd., Suite 3  
Farmingdale, New York 11735  
(631) 755-5500

#### WHERE YOU CAN FIND MORE INFORMATION

Statements contained in this prospectus as to the contents of any contract or any other document referred to are not necessarily complete, and in each instance, we refer you to the copy of the contract or other document filed as an exhibit to the registration statement. Each of these statements is qualified in all respects by this reference. We are subject to the information and periodic reporting requirements of the Exchange Act and we file annual, quarterly and current reports, proxy statements and other information with the SEC. Our filings with the SEC are also available to the public at the SEC's website at <http://www.sec.gov>. Our website is located at [www.enzo.com](http://www.enzo.com). The contents of our website are not incorporated by reference, are not part of this prospectus and should not be relied upon with respect thereto.

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**The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.**

#### PROSPECTUS, SUBJECT TO COMPLETION, DATED MAY 12, 2023



ENZO BIOCHEM, INC.

Up to \$30,000,000

Common Stock

We have entered into a sales agreement with B. Riley Securities, Inc. relating to shares of our common stock offered by this prospectus. In accordance with the terms of the sales agreement, we may offer and sell shares of our common stock having an aggregate offering price of up to \$30,000,000 from time to time through B. Riley Securities, Inc., acting as agent. Under the terms of the sales agreement, we may also sell shares to B. Riley Securities, Inc. as principal for its own account.

Our common stock is listed on The New York Stock Exchange under the symbol "ENZ". On May 11, 2023, the last reported sale price of our common stock on The New York Stock Exchange was \$2.54 per share.

Sales of our common stock, if any, under this prospectus may be made in sales deemed to be an "at the market offering" as defined in Rule 415(a)(4) promulgated under the Securities Act of 1933, as amended (the "Securities Act"). B. Riley Securities, Inc. is not required to sell any specific number or dollar amount of shares of our common stock, but will act as sales agent using its commercially reasonable efforts, consistent with its normal trading and sales practices, on mutually agreed terms between B. Riley Securities, Inc. and us. There is no arrangement for funds to be received in any escrow, trust or similar arrangement. We provide more information about how the shares of common stock will be sold in the section titled "Plan of Distribution."

B. Riley Securities, Inc. will be entitled to compensation at a fixed commission rate of 3.0% of the gross sales price per share sold. A different amount of compensation may be paid by us when B. Riley Securities, Inc. purchases shares as principal at a price agreed to by us and B. Riley Securities, Inc. In connection with the sale of our common stock on our behalf, B. Riley Securities, Inc. will be deemed to be an "underwriter" within the meaning of the Securities Act and the compensation of B. Riley Securities, Inc. will be deemed to be underwriting commissions or discounts. We have also agreed to provide indemnification and contribution to B. Riley Securities, Inc. with respect to certain liabilities, including liabilities under the Securities Act. See the section titled "Plan of Distribution" beginning on page 11 of this prospectus.

**Investing in our securities involves a high degree of risk. Before making an investment decision, please read "Risk Factors" beginning on page 5 of this prospectus and in the documents incorporated by reference into this prospectus.**

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.**

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## ABOUT THIS PROSPECTUS

This prospectus is part of a “shelf” registration statement on Form S-3 that we filed with the Securities and Exchange Commission (the “SEC”). Under the shelf registration process, we may offer shares of our common stock having an aggregate offering price of up to \$30,000,000 from time to time under this prospectus at prices and on terms to be determined by market conditions at the time of offering.

We provide information to you about this offering of shares of our common stock in two separate documents that are bound together: (1) this sales agreement prospectus, which describes the specific details regarding this offering, and (2) the accompanying base prospectus, which provides general information, some of which may not apply to this offering. Generally, when we refer to this “prospectus,” we are referring to both documents combined. If information in this sales agreement prospectus is inconsistent with the accompanying base prospectus, you should rely on this sales agreement prospectus.

You should read this prospectus, the base prospectus, the documents incorporated by reference in this prospectus and the base prospectus and any free writing prospectus that we have authorized for use in connection with this offering before making an investment decision. You should also read and consider the information in the documents referred to in the sections of this prospectus entitled “Where You Can Find More Information” and “Incorporation of Certain Information by Reference.”

You should rely only on the information contained or incorporated by reference in this prospectus, the base prospectus and any free writing prospectus that we have authorized for use in connection with this offering. We have not authorized anyone to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it.

We are not making an offer to sell the securities covered by this prospectus in any jurisdiction where the offer or sale is not permitted.

The information appearing in this prospectus, the base prospectus, the documents incorporated by reference in this prospectus and the base prospectus and any free writing prospectus that we have authorized for use in connection with this offering is accurate only as of its respective date, regardless of the time of delivery of the respective document or of any sale of securities covered by this prospectus. You should not assume that the information contained in or incorporated by reference in this prospectus or the base prospectus or in any free writing prospectus that we have authorized for use in connection with this offering, is accurate as of any date other than the respective dates thereof. Any statement made in this prospectus, the base prospectus or in any document incorporated by reference in this prospectus or the base prospectus will be deemed to be modified or superseded to the extent that a statement in this prospectus or in any other subsequently filed document that is also incorporated by reference in this prospectus modifies or supersedes that statement.

In this prospectus, the terms “Enzo Biochem,” “Enzo,” “Company,” “we,” “us,” “our” and similar terms refer to Enzo Biochem, Inc., a New York corporation, unless the context otherwise requires.

## PROSPECTUS SUMMARY

*This summary highlights certain information about us, this offering and selected information contained elsewhere in or incorporated by reference into this prospectus. This summary is not complete and does not contain all of the information that you should consider before deciding whether to invest in the securities covered by this prospectus. For a more complete understanding of Enzo Biochem and this offering, we encourage you to read and consider carefully the more detailed information in this prospectus, including the information incorporated by reference in this prospectus, the corresponding base prospectus and the information included in any free writing prospectus that we have authorized for use in connection with this offering, including the information referred to under the heading “Risk Factors” in this prospectus beginning on page 5.*

## Enzo Biochem, Inc.

## Overview

Enzo Biochem, Inc. (the “Company,” “we,” “our,” or “Enzo”) is an integrated diagnostics, clinical lab, and life sciences company focused on delivering and applying advanced technology capabilities to produce affordable reliable products and services that enable our customers to meet their clinical needs. Through a connection with the market, we provide advanced biotechnology solutions to the global community as affordable and flexible quality products and services. We develop, manufacture

and sell our proprietary technology solutions and platforms to clinical laboratories, specialty clinics, researchers and physicians globally. Enzo's structure and business strategy represent the culmination of years of extensive planning and work. The Company has the ability to offer low cost, high performance products and services for diagnostic testing, which ideally positions us to capitalize on the reimbursement pressures facing diagnostic labs. Our pioneering work in genomic analysis coupled with our extensive patent estate and enabling platforms have positioned the Company to continue to play an important role in the rapidly growing molecular medicine marketplaces.

Enzo develops low cost diagnostic platform products and related services. Our platform development includes automation-compatible reagent systems and associated products for sample collection and processing through analysis. We develop affordable products and services to improve healthcare, one of the greatest challenges today. Enzo combines over 40 years of expertise in technology development with assay development capabilities and diagnostic testing services to create high performance, cost-effective, and open assay solutions. The ability to combine these assets in one company is uncommon. With our strong intellectual property portfolio integrated with assay development know-how, production, distribution, validation and services capabilities, we have enabled sustainable products and services for a market that is facing increasing pressure in costs and reimbursement.

Enzo technology solutions and platforms and unique operational structure are designed to reduce overall healthcare costs for both government and private insurers. Our proprietary technology platforms reduce our customers' need for multiple, specialized instruments, and offer a variety of high throughput capabilities together with a demonstrated high level of accuracy and reproducibility. Our genetic test panels are focused on large and growing markets primarily in the areas of personalized medicine, women's health, infectious diseases and genetic disorders.

In the course of our research and development activities, we have built a substantial portfolio of intellectual property assets, comprised of approximately 472 issued patents worldwide and over 64 pending patent applications, along with extensive enabling technologies and platforms.

## Operating Segments

Below are brief descriptions of our two operating segments. For a more detailed description, see Note 11 – Segment Reporting in the Notes to Consolidated Financial Statements in our Form 10-Q filed March 20, 2023.

**Enzo Clinical Services** is a clinical reference laboratory providing a wide range of clinical services to physicians, medical centers, other clinical labs and pharmaceutical companies. The Company believes having a Clinical Laboratory Improvement Amendments of 1988 ("CLIA") certified and College of American Pathologists ("CAP") accredited medical laboratory located in New York provides us the opportunity to more rapidly introduce cutting edge products and services to the clinical marketplace. Enzo Clinical Labs offers an extensive menu of molecular and other clinical laboratory tests and procedures used in patient care by physicians to establish or support a diagnosis, monitor treatment or medication, and search for an otherwise undiagnosed condition. Our laboratory is equipped with state-of-the-art communication and connectivity solutions enabling the rapid transmission, analysis and interpretation of generated data. We operate a full service clinical laboratory in Farmingdale, New York, a network of over 30 patient service centers throughout New York, New Jersey and Connecticut, two free standing "STAT" or rapid response laboratories in New York City and Connecticut, an in-house logistics department, and an information technology department. Under our license in New York State, we are able to offer testing services to clinical laboratories and physicians nationwide.

The Clinical Laboratory Services reporting unit is impacted by various risk factors, including among others, loss of a substantial portion of revenues from COVID-19 testing, reduced reimbursements from third party payers for testing performed and from recent health care legislation.

On March 16, 2023, the Company entered into an Asset Purchase Agreement with respect to the sale of assets and assignment of certain liabilities of the Clinical Labs division. See "Recent Developments" below.

**Enzo Products** manufactures, develops and markets products and tools for clinical research, drug development and bioscience research customers worldwide. Underpinned by broad technological capabilities, Enzo Life Sciences has developed proprietary products used in the identification of genomic information by laboratories around the world. Information regarding our technologies can be found in the "Core Technologies" section of our most recently filed Form 10-K. We are internationally recognized and acknowledged as a leader in the development, manufacturing validation and commercialization of numerous products serving not only the clinical research market, but also the life sciences markets in the fields of cellular analysis and drug discovery, among others. Our operations are supported by global operations allowing for the efficient marketing and delivery of our products around the world.

## Recent Developments

On March 16, 2023, the Company filed a Form 8-K indicating that it and Enzo Clinical Labs, Inc. (the "Subsidiary" and, together with the Company, the "Seller") entered into an Asset Purchase Agreement (the "Purchase Agreement") with Laboratory Corporation of America Holdings, a Delaware corporation (the "Buyer"). Pursuant to the Purchase Agreement, the Seller has agreed to sell substantially all operating assets and assign certain liabilities of its clinical labs business (the "Business") to the Buyer which are necessary to operate the Business in exchange for approximately \$146,000,000 in cash (subject to certain adjustments), on and subject to the terms and conditions set forth therein (such transaction, the "Transaction").

The Purchase Agreement contains customary representations, warranties, covenants and termination rights for a transaction of this nature, including, among other things, customary covenants: (i) relating to the conduct of the Business between the signing of the Purchase Agreement and the closing of the Transaction and (ii) regarding the efforts of the parties to cause the Transaction to be consummated, including obtaining certain consents and approvals. The consummation of the Transaction is subject to the satisfaction or waiver of customary closing conditions, including the expiration or termination of any required waiting periods under the Hart-Scott-Rodino Antitrust Improvements Act of 1976. In addition, closing under the Purchase Agreement is contingent on the Company obtaining approval of the Transaction by shareholders of the Company holding a majority of the shares of its common stock outstanding. Certain officers and directors of the Company have agreed with Buyer to vote the shares they beneficially own, totaling up to approximately 11% of the shares outstanding, in favor of the Transaction.

The Purchase Agreement also includes customary termination provisions for both the Company and Buyer and provides that, in connection with the termination of the Purchase Agreement under specified circumstances, including termination by the Company to accept and enter into a definitive agreement with respect to an unsolicited Superior Proposal, the Company will be required to pay Buyer a termination fee of \$5,000,000 or reimbursement of Buyer's expenses of up to \$5,000,000.

Subject to the terms and conditions stated in the Purchase Agreement, after shareholder approval of the Transaction, Buyer will be obligated to pay a fee to the Company for each day after the date of such approval until the closing of the Transaction. At the closing of the Transaction, such fee will be wholly or partially credited against the purchase price.

On April 13, 2023, the Company filed a preliminary proxy statement (the “Preliminary Proxy Statement”) and, on April 24, 2023, the Company filed a definitive proxy statement (the “Definitive Proxy Statement”) and, together with the Preliminary Proxy Statement, the “Proxy Statement”) with the SEC and commenced mailing of the Proxy Statement to the Company’s shareholders to solicit the approval of the Transaction and adopt the Purchase Agreement at a special meeting of shareholders to be held on May 22, 2023 (the “Special Meeting”).

There can be no assurances that the Purchase Agreement will close and if it does close, the exact proceeds to be received by the Company.

On March 31, 2023, the Company entered into a Revolving Loan and Security Agreement (the “Credit Facility”) among the Subsidiary and Enzo Life Sciences, Inc., as borrowers (the “Borrowers”), the Company and certain of its domestic subsidiaries, as guarantors (the “Guarantors”), and Geminio Healthcare Finance, LLC (d/b/a SLR Healthcare ABL), as lender.

The Credit Facility provides for a maximum \$8 million revolving line of credit. The commitment under the Credit Facility will expire after one year and all outstanding borrowings under the Credit Facility will become due and payable at that time. Prior to its expiration, the Borrowers will prepay and terminate the Credit Facility upon closing of the Purchase Agreement, and a standard termination fee will be payable.

The Credit Facility is secured by a first priority perfected security interest in the collateral. The collateral includes substantially all the U.S. assets of the Borrowers and the Guarantors, including among other assets, cash, receivables, inventory and fixed assets.

Borrowings under the Credit Facility accrue interest at the rate per annum equal to Term SOFR (Secured Overnight Financing Rate) for a three-month tenor plus 5.50%. Other fees, such as an unused line fee and a collateral monitoring fee, also apply. The Borrowers borrowed \$5.5 million under the Credit Facility upon the closing thereof.

The Credit Facility includes customary affirmative and negative covenants for revolving credit facilities of this nature, including certain limitations on the incurrence of additional indebtedness and liens. In addition, the Credit Facility requires the Borrowers to maintain certain minimum liquidity levels as of the last day of each calendar month. The levels decline over time, starting at \$4 million as of April 30, 2023, then \$3 million as of May 31, 2023 and \$2 million as of the end of each month thereafter.

The Credit Facility includes customary events of default for revolving credit facilities of this nature, including failure to pay outstanding principal or interest, failure of applicable representations or warranties to be correct in any material respects, failure to perform any other term, covenant or agreement, certain defaults upon obligations under the Employee Retirement Income Security Act, bankruptcy or a change in control. Such events of default would require the repayment of any outstanding borrowings and the termination of the right to borrow additional funds under the Credit Facility.

#### Corporate Information

Our offices are located at 81 Executive Blvd., Suite 3, Farmingdale, New York 11735, and our telephone number is (631) 755-5500. We maintain a website at [www.enzo.com](http://www.enzo.com). Our website and the information contained therein or connected thereto are not incorporated by reference and are not a part of this prospectus.

#### THE OFFERING

<b>Common stock offered by us...</b>	Shares of our common stock having an aggregate offering price of up to \$30,000,000.
<b>Common stock to be outstanding immediately after this offering...</b>	Up to 61,539,108 shares (as more fully described in the notes following this table), assuming sales of 11,811,024 shares of our common stock in this offering at an offering price of \$2.54 per share, which was the last reported sale price of our common stock on The New York Stock Exchange on May 11, 2023. The actual number of shares issued will vary depending on the sales price under this offering.
<b>Plan of Distribution...</b>	“At the market offering” that may be made from time to time through our sales agent, B. Riley Securities, Inc. See “Plan of Distribution” on page 11 of this prospectus.
<b>Use of Proceeds...</b>	We currently intend to use the net proceeds from this offering, if any, for general corporate purposes, including without limitation, the funding of capital expenditures and working capital needs. See “Use of Proceeds” on page 10 of this prospectus.
<b>Risk Factors...</b>	Investing in our securities involves a high degree of risk. See “Risk Factors” beginning on page 5 of this prospectus.
<b>New York Stock Exchange symbol...</b>	“ENZ”

The number of shares of our common stock shown above to be outstanding immediately after this offering is based on 49,728,084 shares outstanding as of May 11, 2023 and excludes as of such date:

- 4,126,500 shares of our common stock subject to outstanding options having a weighted average exercise price of \$2.74 per share;
- 682,488 shares of unvested restricted stock awards outstanding;
- 58,300 shares of unvested performance stock units outstanding; and
- approximately 3,704,000 shares of our common stock reserved for future issuance pursuant to our existing stock incentive plan.

#### RISK FACTORS

*Investing in our common stock involves a high degree of risk. Before purchasing our common stock, you should carefully consider the following risk factors as well as*

those discussed under the section entitled “Risk Factors” in our Annual Report on Form 10-K for the year ended July 31, 2022, and any subsequent Quarterly Report on Form 10-Q or Annual Report on Form 10-K, together with the other information contained in this prospectus, the documents incorporated by reference and in any free writing prospectus we have authorized for use in connection with this offering. Each of these risk factors, either alone or taken together, could adversely affect our business, operating results and financial condition, as well as adversely affect the value of an investment in our common stock. There may be additional risks that we do not presently know of or that we currently believe are immaterial which could also impair our business and financial position. If any of the events described below were to occur, our financial condition, our ability to access capital resources, our results of operations and/or our future growth prospects could be materially and adversely affected and the market price of our common stock could decline. As a result you could lose some or all of any investment you may have made or may make in our common stock.

#### **Risks Related to the Company and its Recently Announced Asset Purchase Agreement**

##### ***The Company may not be able to continue as a going concern.***

During the six months ended January 31, 2023, the Company incurred a net loss of \$21,955,000 and used cash in operating activities of \$14,891,000. The Company believes that based on its fiscal 2023 forecast, its current cash and cash equivalents level is not sufficient for its foreseeable liquidity and capital resource needs over at least the next twelve (12) months, which conditions raise substantial doubt about the Company’s ability to continue as a going concern for one year after the date that the unaudited interim financial statements are issued.

In response to these conditions, the Company is evaluating various financing strategies to obtain sufficient additional liquidity to meet its operating and capital requirements for the next twelve months following the date of issuance of the unaudited interim consolidated financial statements. Specifically, on March 10, 2023, the Company signed a commitment letter providing for up to \$8,000,000 of a revolving line of credit subject to closing, and as previously disclosed, is exploring various strategic alternatives including the sale of segment operating assets. On March 16, 2023, the Company entered into an Asset Purchase Agreement with respect to the sale to Labcorp of substantially all the operating assets and assignment of certain liabilities which are necessary for Labcorp to operate the business of the Clinical Labs division. See “Prospectus Summary – Recent Developments”. However, there can be no assurance that either of these capital raising strategies will be successful, and the Company may need to raise additional capital during the current fiscal year. The Company also believes it has the ability to raise additional funds, either through additional debt secured by real property owned, private debt, selling preferred stock, utilizing at-the-market sales agreement facility, or through other sources, but there can be no assurances that the Company will be able to raise capital pursuant to the foregoing on favorable terms or at all. Our liquidity plans are subject to a number of risks and uncertainties, some of which are outside our control. Macroeconomic conditions could limit our ability to successfully execute our business plans and therefore adversely affect our liquidity plans. Our most recent unaudited interim financial statements incorporated by reference into this prospectus do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or the amounts and classifications of liabilities that may result should the Company be unable to continue as a going concern.

##### ***There can be no guarantee that the asset sale will be completed and, if not completed, we may have to file for bankruptcy and liquidation.***

The consummation of the asset sale is subject to the satisfaction or waiver of various conditions, including the approval of the asset sale by our stockholders. We cannot guarantee that the closing conditions set forth in the Asset Purchase Agreement will be satisfied. If we are unable to satisfy the closing conditions in Buyer’s favor or if other mutual closing conditions are not satisfied, Buyer will not be obligated to complete the asset sale. If the asset sale is not completed, our board of directors, in discharging its fiduciary obligations to our stockholders, will evaluate other strategic alternatives that may be available, which alternatives may not be as favorable to our stockholders as the asset sale and may include a bankruptcy and liquidation of the Company.

##### ***The Company has incurred and will continue to incur substantial expenses, including transaction-related costs, pending the asset sale.***

Claims, liabilities and expenses from operations, such as operating costs, salaries, directors’ and officers’ insurance, payroll and local taxes, legal, accounting and consulting fees and office expenses will continue to be incurred by us during the pendency of the asset sale. Further, Enzo has incurred, and expects to continue to incur, a number of non-recurring transaction-related costs in initiating and completing the asset sale. Non-recurring transaction costs include, but are not limited to, fees paid to Enzo’s financial, legal and accounting advisors, filing fees and printing costs. These fees and costs have been, and will continue to be, substantial. We cannot estimate what the aggregate of these expenses will be and these costs may be higher than expected. There can be no assurance of the exact amount of net cash proceeds Enzo will receive from the asset sale or the exact timing at which it will receive such proceeds. Therefore, it is uncertain the extent to which our financial condition and operations will benefit from or improve as a result of or after the asset sale.

The Purchase Agreement also includes customary termination provisions for both the Company and Buyer and provides that, in connection with the termination of the Purchase Agreement under specified circumstances, including termination by the Company to accept and enter into a definitive agreement with respect to an unsolicited Superior Proposal, the Company will be required to pay Buyer a termination fee of \$5,000,000, or reimbursement of Buyer’s expenses of up to \$5,000,000.

Subject to the terms and conditions stated in the Purchase Agreement, after shareholder approval of the Transaction, Buyer will be obligated to pay a fee to the Company for each day after the date of such approval until the closing of the Transaction. At the closing of the Transaction, such fee will be wholly or partially credited against the purchase price.

There can be no assurance that the Purchase Agreement will close and that if it does close, the exact proceeds to be received by the Company.

#### **Risks Related to this Offering and our Common Stock**

##### ***Our stock price has been volatile, which could result in substantial losses for investors.***

Our common stock is quoted on the New York Stock Exchange, and there has been historical volatility in the market price of our common stock. The trading price of our common stock has been, and is likely to continue to be, subject to significant fluctuations due to a variety of factors, including:

- fluctuations in our quarterly operating and earnings per share results;
- the gain or loss of significant contracts;
- the carrying value of our goodwill and intangible assets;
- announcements of technological innovations or new commercial products by our competitors or us;
- loss of key personnel;
- delays in the development and introduction of new products;
- legislative or regulatory changes;

- general trends in the industries we operate;
- recommendations and/or changes in estimates by equity and market research analysts;
- biological or medical discoveries;
- disputes and/or developments concerning intellectual property, including patents and litigation matters;
- public concern as to the safety of new technologies;
- sales of common stock of existing holders;
- securities class action or other litigation;
- developments in our relationships with current or future customers and suppliers; and
- general economic conditions, both in the United States and worldwide.

In addition, the stock market in general has experienced extreme price and volume fluctuations that have affected the market price of our common stock, as well as the stock of many companies in our industries. Often, price fluctuations are unrelated to operating performance of the specific companies whose stock is affected.

In the past, following periods of volatility in the market price of a company's stock, securities class action litigation has occurred against the issuing company. If we were subject to this type of litigation in the future, we could incur substantial costs and a diversion of our management's attention and resources, each of which could have a material adverse effect on our revenue and earnings. Any adverse determination in this type of litigation could also subject us to significant liabilities.

***Because we do not intend to pay cash dividends on our common stock, an investor in our common stock will benefit only if it appreciates in value.***

We currently intend to retain our retained earnings and future earnings, if any, to finance the expansion of our business and do not expect to pay any cash dividends on our common stock in the foreseeable future. As a result, the success of an investment in our common stock will depend entirely upon any future appreciation. There is no guarantee that our common stock will appreciate in value or even maintain the price at which investors purchased their shares.

***The actual number of shares we will issue under the sales agreement, and the amount of proceeds that we will receive, at any one time or in total, is uncertain.***

Subject to certain limitations in the sales agreement and compliance with applicable law, we have the discretion to deliver sales notices to B. Riley Securities, Inc. at any time throughout the term of the sales agreement. The number of shares that are sold by the sales agent after delivery of a sales notice will fluctuate based on the market price of our common stock during the sales period and limits we set with B. Riley Securities, Inc. In addition, we are not obligated to issue any shares under the sales agreement. Accordingly, and because the price per share of each share of our common stock that is sold will fluctuate based on the market price of our common stock during the sales period, it is not possible at this stage to predict the number of shares, if any, that will ultimately be issued, or the resulting proceeds to us.

***Our common stock offered hereby will be sold in "at-the-market" offerings, and investors who buy shares at different times will likely pay different prices.***

Investors who purchase shares of common stock in this offering at different times will likely pay different prices, and so may experience different outcomes in their investment results. We will have discretion, subject to market demand, to vary the timing, prices, and numbers of shares sold. Investors may experience a decline in the value of their shares as a result of share sales made at prices lower than the prices they paid.

***Investors in this offering will experience immediate and substantial dilution in the net tangible book value per share of the common stock they purchase.***

Since the price per share of our common stock being offered is higher than the net tangible book value per share of our common stock, you will suffer substantial dilution in the net tangible book value of the common stock you purchase in this offering. See the section entitled "Dilution" in this prospectus for a more detailed discussion of the dilution you will incur if you purchase common stock in this offering. In addition, we have a significant number of options outstanding. As of May 11, 2023, approximately 3,704,000 shares of common stock were reserved for future issuance under our stock incentive plan. As of that date, there were also 4,126,500 options to purchase shares of our common stock, 682,488 shares of unvested restricted stock unit awards outstanding, and 58,300 shares of unvested performance stock unit awards outstanding. The exercise of outstanding options and warrants having an exercise price per share that is less than the offering price per share in this offering will increase dilution to investors in this offering.

***Future sales of shares of our common stock or the issuance of securities senior to our common stock could adversely affect the trading price of our common stock and our ability to raise funds in new equity offerings.***

We are not restricted from issuing additional common stock, preferred stock or securities convertible into or exchangeable for common stock. Future sales of a substantial number of our shares of common stock or equity-related securities in the public market or privately, or the perception that such sales could occur, could adversely affect prevailing trading prices of our common stock, and could impair our ability to raise capital through future offerings of equity or equity-related securities. No prediction can be made as to the effect, if any, that future sales of shares of common stock or the availability of shares of common stock for future sale will have on the trading price of our common stock. You may experience significant dilution as a result of future equity offerings.

***We have broad discretion in the use of the net proceeds from this offering.***

Our management will have broad discretion in the application of the net proceeds from this offering and could spend the proceeds in ways with which you may not agree. Accordingly, you will be relying on the judgment of our management with regard to the use of the net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. It is possible that the net proceeds will be invested or otherwise used in a way that does not yield a favorable, or any, return for the Company.

***Adverse capital and credit market conditions could affect our liquidity.***

Adverse capital and credit market conditions could affect our ability to meet liquidity needs, as well as our access to capital and cost of capital. The capital and credit markets have experienced extreme volatility and disruption in recent years. Our results of operations, financial condition, cash flows and capital position could be materially

adversely affected by continued disruptions in the capital and credit markets.

*It may be difficult for a third party to acquire us, which could inhibit stockholders from realizing a premium on their stock price.*

We are subject to the New York anti-takeover laws regulating corporate takeovers. These anti-takeover laws prohibit certain business combinations between a New York corporation and any “interested shareholder” (generally, the beneficial owner of 20% or more of the corporation’s voting shares) for five years following the time that the shareholder became an interested shareholder, unless the corporation’s board of directors approved the transaction prior to the interested shareholder becoming interested.

Our certificate of incorporation, as amended, and by-laws contain provisions that could have the effect of delaying, deferring or preventing a change in control of us that stockholders may consider favorable or beneficial. These provisions could discourage proxy contests and make it more difficult for stockholders to elect directors and take other corporate actions. These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock. These provisions include advance notice requirements for the submission by stockholders of nominations for election to the board of directors and for proposing matters that can be acted upon by stockholders at a meeting.

## SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, the documents we have filed with the SEC that are incorporated herein and therein by reference and any related free writing prospectus may contain forward-looking statements within the meaning of Section 27A of the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended. These statements are based on our current expectations, assumptions, estimates and projections about our business and our industry, and involve known and unknown risks, uncertainties and other factors that may cause our results, levels of activity, performance or achievement to be materially different from any future results, levels of activity, performance or achievements expressed or implied by the forward- looking statements.

In some cases, you can identify forward-looking statements by terms such as “anticipate,” “believe,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “potential,” “predict,” “project,” “should,” “will,” “would” and similar expressions intended to identify forward-looking statements. Forward-looking statements include information concerning possible or assumed future results of operations of our business, the expected completion and timing of the Transaction and other information relating to the Transaction, including pro forma information regarding the Company assuming the Transaction is consummated, including our pro forma results of operations and financial condition as reflected in our unaudited pro forma condensed consolidated financial information incorporated by reference in this prospectus, and may involve known and unknown risks over which we have no control, including, without limitation: (i) the satisfaction of the conditions to consummate the Transaction, including the approval of the Transaction by our shareholders; (ii) the occurrence of any event, change or other circumstance that could give rise to the termination of the Purchase Agreement; (iii) the outcome of any legal proceedings that may be instituted against us and others following the announcement of the Purchase Agreement; (iv) the amount of the costs, fees, expenses and charges related to the Transaction; (v) the effect of the announcement of the Transaction on our customer relationships, operating results and business generally, including the ability to retain key employees; and (vi) the amount of cash we will hold after the Transaction or our net proceeds from the Transaction. While we believe that we have a reasonable basis for each forward-looking statement, we caution you that these statements are based on a combination of facts and factors currently known by us and our projections of the future, about which we cannot be certain. We discuss many of these risks, uncertainties and other factors in greater detail under the heading “Risk Factors” contained in this prospectus and the accompanying base prospectus. Given these risks, uncertainties and other factors, you should not place undue reliance on these forward-looking statements. Also, these forward-looking statements represent our estimates and assumptions only as of the date such forward-looking statements are made. You should read carefully this prospectus and the accompanying base prospectus, together with the documents we have filed with the SEC that are incorporated by reference herein and therein and any related free writing prospectus, completely and with the understanding that our actual future results may be materially different from what we expect. We hereby qualify all of our forward- looking statements by these cautionary statements.

Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future.

## USE OF PROCEEDS

We may issue and sell shares of our common stock having aggregate gross sales proceeds of up to \$30,000,000 from time to time. Because there is no minimum offering amount required as a condition to close this offering, the actual total public offering amount, commissions, and proceeds to us, if any, are not determinable at this time.

We currently intend to use the net proceeds from this offering, if any, for general corporate purposes, including without limitation, the funding of capital expenditures and working capital needs.

As of the date of this prospectus, we cannot specify with certainty all of the particular uses for the net proceeds to us from this offering, if any. As a result, our management will have broad discretion regarding the timing and application of the net proceeds from this offering, if any. Additionally, the amounts and timing of our actual expenditures will depend on numerous factors, including the factors described under “Risk Factors” in this prospectus and in the documents incorporated by reference herein, as well as the amount of cash used in our operations.

## DILUTION

If you invest in our common stock, you will experience dilution to the extent of the difference between the price per share you pay in this offering and the net tangible book value per share of our common stock immediately after this offering. Our net tangible book value as of January 31, 2023 was approximately \$25,378,000, or \$0.52 per share of our common stock. Net tangible book value per share as of January 31, 2023 is equal to our total tangible assets minus total liabilities, all divided by the number of shares of common stock outstanding as of January 31, 2023.

After giving effect to the sale of our common stock in the aggregate amount of \$30,000,000 in this offering at an assumed offering price of \$2.54 per share, representing the last reported sale price of our common stock on The New York Stock Exchange on May 11, 2023, and after deducting estimated offering commissions and expenses payable by us, our as adjusted net tangible book value would have been approximately \$54,393,000, or approximately \$0.90 per share of common stock, as of January 31, 2023. This represents an immediate increase in net tangible book value of approximately \$0.38 per share to existing stockholders and an immediate dilution of approximately \$1.64 per share to investors in this offering. The following table illustrates this calculation on a per share basis to investors participating in this offering:

Assumed public offering price per share	\$	2.54
Net tangible book value per share as of January 31, 2023	\$	0.52
Increase in net tangible book value per share attributable to this offering	\$	0.38



As adjusted net tangible book value per share as of January 31, 2023, after giving effect to this offering \$ 0.90

Dilution per share to new investors purchasing shares in this offering \$ 1.64

The table above assumes for illustrative purposes that an aggregate of 11,811,024 shares of our common stock are sold at a price of \$2.54 per share, representing the last reported sale price of our common stock on The New York Stock Exchange on May 11, 2023, for aggregate gross proceeds of \$30,000,000. The shares sold in this offering, if any, will be sold from time to time at various prices. An increase of \$0.25 per share in the price at which the shares are sold from the assumed offering price of \$2.54 per share shown in the table above, assuming all of our common stock in the aggregate amount of \$30,000,000 is sold at that price, would increase our adjusted net tangible book value per share after the offering to \$0.91 per share and would increase the dilution in net tangible book value per share to new investors in this offering to \$1.88 per share, after deducting commissions and estimated aggregate offering expenses payable by us. A decrease of \$0.25 per share in the price at which the shares are sold from the assumed offering price of \$2.54 per share shown in the table above, assuming all of our common stock in the aggregate amount of \$30,000,000 is sold at that price, would decrease our adjusted net tangible book value per share after the offering to \$0.88 per share and would decrease the dilution in net tangible book value per share to new investors in this offering to \$1.41 per share, after deducting commissions and estimated aggregate offering expenses payable by us. This information is supplied for illustrative purposes only.

The above illustration of dilution per share to investors participating in this offering assumes no exercise of outstanding options to purchase our common stock. The exercise of outstanding options having an exercise price per share that is less than the offering price per share in this offering will increase dilution to investors in this offering.

## PLAN OF DISTRIBUTION

We have entered into a sales agreement with B. Riley Securities, Inc. under which we may issue and sell shares of our common stock having an aggregate gross sales price of up to \$30,000,000 from time to time through B. Riley Securities, Inc., acting as agent. Under the terms of the sales agreement, we may also sell shares to B. Riley Securities, Inc. as principal for its own account. The sales agreement has been filed as an exhibit to the Registration Statement on Form S-3 of which this prospectus forms a part and is incorporated by reference in this prospectus. See the “Where You Can Find More Information” section of this prospectus.

Upon delivery of a placement notice and subject to the terms and conditions of the sales agreement, B. Riley Securities, Inc. may offer and sell our common stock by any method permitted by law deemed to be an “at the market offering” as defined in Rule 415(a)(4) promulgated under the Securities Act. We may instruct B. Riley Securities, Inc. not to sell common stock if the sales cannot be effected at or above the price designated by us from time to time. We or B. Riley Securities, Inc. may suspend the offering of common stock upon notice and subject to other conditions.

We will pay B. Riley Securities, Inc. commissions, in cash, for its services in acting as sales agent in the sale of our common stock. B. Riley Securities, Inc. will be entitled to compensation at a fixed commission rate of 3.0% of the gross sales price per share sold. In addition, we have agreed to reimburse B. Riley Securities, Inc. for the fees and disbursements of its counsel, payable upon execution of the sales agreement, in an amount not to exceed \$75,000, plus up to \$5,000 quarterly for ongoing diligence requirements, including legal fees, following the execution date. We have also agreed to indemnify B. Riley Securities, Inc. against certain civil liabilities, including liabilities under the Securities Act. We have also agreed to contribute to payments B. Riley Securities, Inc. may be required to make in respect of such liabilities. Because there is no minimum offering amount required as a condition to close this offering, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time. We estimate that the total expenses for the offering, excluding the aforementioned compensation payable to B. Riley Securities, Inc. under the terms of the sales agreement will be approximately \$85,000. The remaining sale proceeds, after deducting any other transaction fees, will equal our net proceeds from the sale of such shares.

Settlement for sales of common stock will occur on the second trading day following the date on which any sales are made, or on some other date that is agreed upon by us and B. Riley Securities, Inc. in connection with a particular transaction, in return for payment of the net proceeds to us. Sales of our common stock as contemplated in this prospectus will be settled through the facilities of The Depository Trust Company or by such other means as we and B. Riley Securities, Inc. may agree upon. There is no arrangement for funds to be received in an escrow, trust or similar arrangement.

B. Riley Securities, Inc. will use its commercially reasonable efforts, consistent with its normal trading and sales practices, to solicit offers to purchase the common stock shares under the terms and subject to the conditions set forth in the sales agreement. In connection with the sale of the common stock on our behalf, B. Riley Securities, Inc. will be deemed to be an “underwriter” within the meaning of the Securities Act and the compensation of B. Riley Securities, Inc. will be deemed to be underwriting commissions or discounts. We have agreed to provide indemnification and contribution to B. Riley Securities, Inc. against certain civil liabilities, including liabilities under the Securities Act.

The offering of our common stock pursuant to the sales agreement will terminate upon the earlier of (1) the sale of all shares of our common stock subject to the sales agreement or (2) termination of the sales agreement as permitted therein. We and B. Riley Securities, Inc. may each terminate the sales agreement at any time upon five days prior notice.

B. Riley Securities, Inc. and its affiliates may in the future provide various investment banking, commercial banking and other financial services for us and our affiliates, for which services they may in the future receive customary fees. To the extent required by Regulation M, B. Riley Securities, Inc. will not engage in any market making activities involving our common stock while the offering is ongoing under this prospectus.

This prospectus in electronic format may be made available on a website maintained by B. Riley Securities, Inc. and B. Riley Securities, Inc. may distribute this prospectus and the accompanying base prospectus electronically.

## LEGAL MATTERS

Certain legal matters in connection with the securities offered hereby will be passed upon for us by McDermott Will & Emery LLP, New York, New York. B. Riley Securities, Inc. is being represented in connection with this offering by Morrison & Foerster LLP, Washington, D.C.

## EXPERTS

The consolidated balance sheets of Enzo Biochem, Inc. and subsidiaries as of July 31, 2022 and 2021 and the related consolidated statements of operations, comprehensive income (loss), stockholders’ equity, and cash flows for each of the years in the three-year period ended July 31, 2022, and financial statement schedule for each of the years in the three-year period ended July 31, 2022 have been audited by EisnerAmper LLP, independent registered public accounting firm, as stated in their reports, which are incorporated herein by reference, which reports (1) express an unqualified opinion on the financial statements and financial statement schedule, and (2) express an unqualified opinion on the effectiveness of internal control over financial reporting as of July 31, 2022. Such financial statements and financial statement schedule have been incorporated herein by reference in reliance on the reports of such firm given upon their authority as experts in accounting and auditing.

## WHERE YOU CAN FIND MORE INFORMATION



We have filed with the SEC a registration statement on Form S-3, of which this prospectus is a part, under the Securities Act, to register the sale of shares of common stock offered by this prospectus. However, this prospectus does not contain all of the information contained in the registration statement and the exhibits and schedules to the registration statement. Statements in this prospectus concerning any document we filed as an exhibit to the registration statement or that we otherwise filed with the SEC are not intended to be comprehensive and are qualified in their entirety by reference to those filings. We encourage you to carefully read the registration statement and the exhibits and schedules to the registration statement.

We are subject to the information and periodic reporting requirements of the Exchange Act, and we file annual, quarterly and current reports, proxy statements and other information with the SEC. Our filings with the SEC are also available to the public at the SEC's website at <http://www.sec.gov>. Our website is located at [www.enzo.com](http://www.enzo.com). The contents of our website are not part of this prospectus and should not be relied upon with respect thereto.

## INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

SEC rules allow us to "incorporate by reference" into this prospectus much of the information we file with the SEC, which means that we can disclose important information to you by referring you to those publicly available documents. The information that we incorporate by reference into this prospectus is considered to be part of this prospectus.

This prospectus incorporates by reference the documents listed below and any future filings we make with the SEC under Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act (in each case, other than those documents or the portions of those documents deemed to be furnished and not filed in accordance with SEC rules) until the offering of the securities contemplated by this prospectus is terminated or completed:

- our Annual Report on Form 10-K for the fiscal year ended July 31, 2022 (including the information specifically incorporated by reference into our Annual Report on Form 10-K from our revised definitive proxy statement on Schedule 14A filed with the SEC on December 12, 2022) filed with the SEC on [October 14, 2022](#) and as amended on [November 25, 2022](#);
- our Quarterly Reports on Form 10-Q for the fiscal quarters ended October 31, 2022 and January 31, 2023 filed with the SEC on [December 12, 2022](#) and [March 20, 2023](#), respectively;
- our Current Reports on Form 8-K (other than the information furnished pursuant to Item 2.02 or 7.01 thereof or related exhibits furnished pursuant to Item 9.01 thereof) filed with the SEC on [October 20, 2022](#), [November 4, 2022](#), [February 3, 2023](#), [March 16, 2023](#), [April 5, 2023](#), [April 13, 2023](#) and [May 8, 2023](#);
- the description of our common stock contained in our registration statement on Form 8-A filed with the SEC on December 8, 1999, including any amendment or report filed for the purpose of updating such description; and
- the Company's unaudited pro forma condensed consolidated financial information as of and for the six months ended January 31, 2023 and for the years ended July 31, 2022 and July 31, 2021 and the notes thereto included in our Definitive Proxy Statement on [Schedule 14A](#) filed with the SEC on April 24, 2023.

Because we are incorporating by reference future filings with the SEC, this prospectus is continually updated and later information filed with the SEC may update and supersede some of the information included or incorporated by reference in this prospectus. This means that you must look at all of the SEC filings that we incorporate by reference to determine if any of the statements in this prospectus or in any document previously incorporated by reference have been modified or superseded.

We will provide without charge to each person, including any beneficial owners, to whom this prospectus is delivered, upon his or her written or oral request, a copy of any or all documents referred to above which have been or may be incorporated by reference into this prospectus but not delivered with this prospectus. You may request a copy of these documents by writing or telephoning us at the following address:

Enzo Biochem, Inc.  
81 Executive Blvd., Suite 3  
Farmingdale, New York 11735  
(631) 755-5500



ENZO BIOCHEM, INC.

Up to \$30,000,000

Common Stock

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PROSPECTUS

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B. Riley Securities

**PART II**  
**INFORMATION NOT REQUIRED IN PROSPECTUS**

**Item 14. Other Expenses of Distribution**

The following table lists the costs and expenses payable by the registrant in connection with the sale of the common stock covered by this prospectus other than any sales commissions or discounts, which expenses will be paid by us. All amounts shown are estimates except the SEC registration fee.

SEC registration fee	\$ 16,530
Legal fees and expenses	\$ *
Accounting fees and expenses	\$ *
Printing fees and miscellaneous expenses	\$ *
Total	\$ *

\* These fees are calculated on the securities offered and the number of issuances and accordingly cannot be estimated at this time.

**Item 15. Indemnification of Directors and Officers**

Enzo Biochem, Inc. is incorporated under the laws of the State of New York. Reference is made to Section 721 of the NYBCL, which enables a corporation in its original certificate of incorporation or an amendment thereto to eliminate or limit the personal liability of a director for violations of the director's fiduciary duty, except if (1) his or her acts or omissions were in bad faith or involved intentional misconduct or a knowing violation of law or (2) such director personally gained in fact a financial profit or other advantage to which or she was not legally entitled.

Reference is also made to Section 722 of the NYBCL, which provides that a corporation may indemnify any person, including an officer or director, who is, or is threatened to be made, party to any threatened, pending or completed legal action or proceeding, whether civil or criminal, other than an action by or in the right of such corporation, by reason of the fact that such person was an officer, director, employee or agent of such corporation or is or was serving at the request of such corporation as a director, officer, employee or agent of another corporation or enterprise. The indemnity may include expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding, provided such officer, director, employee or agent acted in good faith and in a manner he reasonably believed to be in, or not opposed to, the corporation's best interest and, for criminal proceedings, had no reasonable cause to believe that his conduct was unlawful. A New York corporation may indemnify any officer or director in an action by or in the right of the corporation under the same conditions, except that no indemnification is permitted without judicial approval if the officer or director is adjudged to be liable to the corporation. Where an officer or director is successful on the merits or otherwise in the defense of any action referred to above, the corporation must indemnify him against the expenses that such officer or director actually and reasonably incurred.

Article 8 of the Company's Certificate of Incorporation, as amended, provides that the Company shall, to the fullest extent permitted by the provisions of Article 7 of the NYBCL, as the same may be amended and supplemented, indemnify any and all persons whom it shall have power to indemnify under said section from and against any and all of the expenses, liabilities or other matters referred to in or covered by said section, and the indemnification provided for therein shall not be deemed exclusive of any other rights to which those indemnified may be entitled under any bylaw, agreement, vote of stockholders or disinterested 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, officer, employee or agent and shall inure to the benefit of the heirs, executors and administrators of such person.

**Liability Insurance**

We have also obtained directors' and officers' liability insurance, which insures against liabilities that our directors or officers may incur in such capacities.

**Item 16. Exhibits and Financial Statement Schedules.**

(a) *Exhibits.* The following exhibits are included herein or incorporated herein by reference.

Exhibit Number	
1.1*	Form of Underwriting Agreement
1.2	<a href="#">Sales Agreement, dated May 12, 2023, between Enzo Biochem, Inc. and B. Riley Securities, Inc.</a>
4.1	<a href="#">Common Stock Specimen Certificate (incorporated by reference to Exhibit 4.6 to the registration statement on Form S-8 of Enzo Biochem, Inc. (No. 333-123712))</a>
4.2*	Form of Certificate of Designations of Preferred Stock
4.3	<a href="#">Form of Indenture between Enzo Biochem, Inc. and one or more trustees to be named (incorporated by reference to Exhibit 4.3 to the registration statement on Form S-3 of Enzo Biochem, Inc. (No. 333-190321))</a>
4.4*	Form of Note
4.5*	Form of Common Stock Warrant Agreement and Warrant Certificate

4.6*	Form of Preferred Stock Warrant Agreement and Warrant Certificate
4.7*	Form of Debt Securities Warrant Agreement and Warrant Certificate
4.8*	Form of Deposit Agreement
4.9*	Form of Unit Agreement
5.1	<a href="#">Opinion of McDermott Will &amp; Emery LLP, counsel to the registrant</a>
23.1	<a href="#">Consent of Independent Registered Public Accounting Firm</a>
23.2	<a href="#">Consent of McDermott Will &amp; Emery LLP (contained in Exhibit 5.1)</a>
24.1	<a href="#">Power of Attorney (contained on page II-5)</a>
25.1 <sup>†</sup>	Form T-1 Statement of Eligibility of Trustee
107	<a href="#">Filing Fee Table</a>

\* To be filed by amendment or by a report filed under the Securities Exchange Act of 1934, as amended, and incorporated herein by reference, if applicable.

<sup>†</sup> To be filed separately under electronic form type 305B2, if applicable.

(b) *Financial Statement Schedules*. None.

#### 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 prospectus required by Section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

#### II-2

(iii) 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.

*Provided, however,* that paragraphs (i), (ii) and (iii) above do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of 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.

(4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:

(A) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(B) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by section 10(a) of the Securities Act of 1933, shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof. *Provided, however,* that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date; or

(5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(6) 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.

(7) To file an application for the purpose of determining the eligibility of the trustee to act under subsection (a) of section 310 of the Trust Indenture Act ("Act") in accordance with the rules and regulations prescribed by the Commission under section 305(b)(2) of the Act.

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 SEC such indemnification is against public policy as expressed in the Securities Act of 1933 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 Securities Act of 1933 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 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of New York, State of New York, on this 12th day of May, 2023.

#### ENZO BIOCHEM, INC.

By: /s/ Hamid Erfanian  
Name: Hamid Erfanian  
Title: Chief Executive Officer  
(Principal Executive Officer)

By: /s/ Patricia Eckert  
Name: Patricia Eckert  
Title: Interim Chief Financial Officer,  
(Principal Accounting Officer)

### POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENT, that each person whose signature appears below constitutes and appoints Hamid Erfanian and Patricia Eckert, and each or either of them, his true and lawful attorney-in-fact and agent, 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 or any abbreviated registration statement and any amendments thereto filed pursuant to Rule 462(b) increasing the number of securities for which registration is sought) to this Registration Statement, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the SEC, granting unto 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 connection therewith, 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 or substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated:

<u>/s/ Hamid Erfanian</u> Hamid Erfanian	Chief Executive Officer (Principal Executive Officer)	May 12, 2023
<u>/s/ Patricia Eckert</u> Patricia Eckert	Interim Chief Financial Officer (Principal Accounting Officer)	May 12, 2023
<u>Elazar Rabbani, Ph.D.</u>	Director	May 12, 2023
<u>/s/ Bradley Radoff</u> Bradley Radoff	Director	May 12, 2023
<u>/s/ Ian Walters</u> Ian Walters	Director	May 12, 2023
<u>/s/ Mary Tagliaferri, M.D.</u> Mary Tagliaferri, M.D.	Chair of the Board	May 12, 2023

## ENZO BIOCHEM, INC.

Common Stock  
(par value \$0.01 per share)

## At Market Issuance Sales Agreement

May 12, 2023

B. Riley Securities, Inc.  
299 Park Avenue, 21<sup>st</sup> Floor  
New York, NY 10171

Ladies and Gentlemen:

Enzo Biochem, Inc., a New York corporation (the “Company”), confirms its agreement (this “Agreement”) with B. Riley Securities, Inc. (the “Agent”) as follows:

1. Issuance and Sale of Shares. The Company agrees that, from time to time during the term of this Agreement, on the terms and subject to the conditions set forth herein, it may issue and sell through or to the Agent, as sales agent or principal, shares (the “Placement Shares”) of the Company’s common stock, par value \$0.01 per share (the “Common Stock”); *provided however*, that in no event shall the Company issue or sell through the Agent such number of Placement Shares that (a) exceeds the number of shares or dollar amount of Common Stock registered on the effective Registration Statement (as defined below) pursuant to which the offering is being made or (b) exceeds the number of shares or dollar amount of Common Stock registered on the Prospectus Supplement (as defined below) (the lesser of (a) or (b) the “Maximum Amount”); and *provided further, however*, that in no event shall the aggregate number of Placement Shares sold pursuant to this Agreement exceed the number of authorized but unissued shares of Common Stock. Notwithstanding anything to the contrary contained herein, the parties hereto agree that compliance with the limitations set forth in this Section 1 on the number of Placement Shares issued and sold under this Agreement shall be the sole responsibility of the Company and that the Agent shall have no obligation in connection with such compliance. The issuance and sale of Placement Shares through the Agent will be effected pursuant to the Registration Statement, although nothing in this Agreement shall be construed as requiring the Company to use the Registration Statement to issue any Placement Shares.

The Company shall file, in accordance with the provisions of the Securities Act of 1933, as amended, and the rules and regulations thereunder (the “Securities Act”), with the Securities and Exchange Commission (the “Commission”), a registration statement on Form S-3, including a base prospectus relating to certain securities, including the Placement Shares, to be issued from time to time by the Company, and which incorporates by reference documents that the Company has filed or will file in accordance with the provisions of the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder (the “Exchange Act”). The Company has prepared a prospectus supplement to the base prospectus included as part of such registration statement specifically relating to the Placement Shares (the “Prospectus Supplement”). The Company will furnish to the Agent, for use by the Agent, copies of the base prospectus included as part of such registration statement, as supplemented by the Prospectus Supplement. Except where the context otherwise requires, such registration statement, and any post-effective amendment thereto, including all documents filed as part thereof or incorporated by reference therein, and including any information contained in a Prospectus (as defined below) subsequently filed with the Commission pursuant to Rule 424(b) under the Securities Act or deemed to be a part of such registration statement pursuant to Rule 430B of the Securities Act, or any subsequent registration statement on Form S-3 filed pursuant to Rule 415(a)(6) under the Securities Act by the Company to cover any Placement Shares, is herein called the “Registration Statement.” The base prospectus, including all documents incorporated or deemed incorporated therein by reference to the extent such information has not been superseded or modified in accordance with Rule 412 under the Securities Act (as qualified by Rule 430B(g) of the Securities Act), included in the Registration Statement, as it may be supplemented by the Prospectus Supplement, in the form in which such base prospectus and/or Prospectus Supplement have most recently been filed by the Company with the Commission pursuant to Rule 424(b) under the Securities Act is herein called the “Prospectus.” Any reference herein to the Registration Statement, the Prospectus or any amendment or supplement thereto shall be deemed to refer to and include the documents incorporated by reference therein, and any reference herein to the terms “amend,” “amendment” or “supplement” with respect to the Registration Statement or the Prospectus shall be deemed to refer to and include the filing after the execution hereof of any document with the Commission incorporated by reference therein (the “Incorporated Documents”).

For purposes of this Agreement, all references to the Registration Statement, the Prospectus or to any amendment or supplement thereto shall be deemed to include the most recent copy filed with the Commission pursuant to its Electronic Data Gathering Analysis and Retrieval System, or if applicable, the Interactive Data Electronic Application system when used by the Commission (collectively, “EDGAR”).

2. Placements. Each time that the Company wishes to issue and sell Placement Shares hereunder (each, a “Placement”), it will notify the Agent by electronic mail (or other method mutually agreed to in writing by the parties) of the number of Placement Shares, the time period during which sales are requested to be made, any limitation on the number of Placement Shares that may be sold in any one day and any minimum price below which sales may not be made (a “Placement Notice”), the form of which is attached hereto as Schedule 1. The Placement Notice shall originate from any of the individuals from the Company set forth on Schedule 3 (with a copy to each of the other individuals from the Company listed on such schedule), and shall be addressed to each of the individuals from the Agent set forth on Schedule 3, as such Schedule 3 may be amended from time to time. The Placement Notice shall be effective immediately upon receipt by the Agent unless and until (i) the Agent declines to accept the terms contained therein for any reason, in its sole discretion, in which case the Agent shall promptly notify the Company within two Business Days, (ii) the entire amount of the Placement Shares thereunder has been sold, (iii) the Company suspends or terminates the Placement Notice, which suspension and termination rights may be exercised by the Company in its sole discretion, (iv) the Company issues a subsequent Placement Notice with parameters superseding those on the earlier dated Placement Notice, except to the extent of any action occurring pursuant to the prior Placement Notice and prior to the delivery of the subsequent Placement Notice, or (v) this Agreement has been terminated under the provisions of Section 13. The amount of any discount, commission or other compensation to be paid by the Company to the Agent in connection with the sale of the Placement Shares shall be calculated in accordance with the terms set forth in Schedule 2. It is expressly acknowledged and agreed that neither the Company nor the Agent will have any obligation whatsoever with respect to a Placement or any Placement Shares unless and until the Company delivers a Placement Notice to the Agent and the Agent does not decline such Placement Notice pursuant to the terms set forth above, and then only upon the terms specified therein and herein. In the event of a conflict between the terms of Sections 2 or 3 of this Agreement and the terms of a Placement Notice, the terms of the Placement Notice will control.

3. Sale of Placement Shares by the Agent. Subject to the terms and conditions of this Agreement, for the period specified in a Placement Notice, the Agent will use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of the New York Stock Exchange (the “Exchange”), to sell the Placement Shares up to the amount specified in, and otherwise in accordance with the terms of, such Placement Notice. The Agent will provide written confirmation via email to the Company no later than the opening of the Trading Day (as defined below) immediately following the Trading Day on which it has made sales of Placement Shares hereunder setting forth the number of Placement Shares sold on such day, the compensation payable by the Company to the Agent pursuant

to Section 2 with respect to such sales, and the Net Proceeds (as defined below) payable to the Company, with an itemization of the deductions made by the Agent (as set forth in Section 5(b)) from the gross proceeds that it receives from such sales. Subject to the terms and limitations set forth in a Placement Notice, the Agent may sell Placement Shares by any method permitted by law deemed to be an “at the market offering” as defined in Rule 415 of the Securities Act. “Trading Day” means any day on which shares of Common Stock are purchased and sold on the Exchange.

4. Suspension of Sales. The Company or the Agent may, upon notice to the other party in writing (including by email correspondence to each of the individuals of the other party set forth on Schedule 3, if receipt of such correspondence is actually acknowledged by any of the individuals to whom the notice is sent, other than via auto-reply) or by telephone (confirmed immediately by verifiable facsimile transmission or email correspondence to each of the individuals of the other party set forth on Schedule 3), suspend any sale of Placement Shares (a “Suspension”); *provided, however*, that such suspension shall not affect or impair any party’s obligations with respect to any Placement Shares sold hereunder prior to the receipt of such notice. While a Suspension is in effect, any obligation under Sections 7(l), 7(m), and 7(n) with respect to the delivery of certificates, opinions, or comfort letters to the Agent, shall be waived. Each of the parties agrees that no such notice under this Section 4 shall be effective against any other party unless it is made to one of the individuals named on Schedule 3 hereto, as such Schedule may be amended from time to time.

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#### 5. Sale and Delivery to the Agent; Settlement

a. Sale of Placement Shares. On the basis of the representations and warranties herein contained and subject to the terms and conditions herein set forth, upon the Agent’s acceptance of the terms of a Placement Notice, and unless the sale of the Placement Shares described therein has been declined, suspended, or otherwise terminated in accordance with the terms of this Agreement, the Agent, for the period specified in the Placement Notice, will use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of the Exchange to sell such Placement Shares up to the amount specified in, and otherwise in accordance with the terms of, such Placement Notice. The Company acknowledges and agrees that (i) there can be no assurance that the Agent will be successful in selling Placement Shares, (ii) the Agent will incur no liability or obligation to the Company or any other person or entity if it does not sell Placement Shares for any reason other than a failure by the Agent to use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of the Exchange to sell such Placement Shares as required under this Agreement and (iii) the Agent shall be under no obligation to purchase Placement Shares on a principal basis pursuant to this Agreement, except as otherwise agreed by the Agent and the Company, the terms of which, including any discount, commission or other compensation to be paid by the Company to the Agent in connection with such purchase of Placement Shares by the Agent on a principal basis, shall be set forth in a separate written term sheet.

b. Settlement of Placement Shares. Unless otherwise specified in the applicable Placement Notice, settlement for sales of Placement Shares will occur on the second (2<sup>nd</sup>) Trading Day (or such earlier day as is industry practice for regular-way trading) following the date on which such sales are made (each, a “Settlement Date”). The Agent shall notify the Company of each sale of Placement Shares no later than the opening of the Trading Day following the Trading Day that the Agent sold Placement Shares. Unless otherwise specified in the applicable Placement Notice, the amount of proceeds to be delivered to the Company on a Settlement Date against receipt of the Placement Shares sold (the “Net Proceeds”) will be equal to the aggregate sales price received by the Agent, after deduction for (i) the Agent’s commission, discount or other compensation for such sales payable by the Company pursuant to Section 2 hereof, and (ii) any transaction fees imposed by any governmental or self-regulatory organization in respect of such sales.

c. Delivery of Placement Shares. Unless otherwise specified in the applicable Placement Notice, on or before each Settlement Date, the Company will, or will cause its transfer agent to, electronically transfer the Placement Shares being sold by crediting the Agent’s or its designee’s account (*provided that* the Agent shall have given the Company written notice of such designee and such designee’s account information at least one Trading Day prior to the Settlement Date) at The Depository Trust Company through its Deposit and Withdrawal at Custodian System or by such other means of delivery as may be mutually agreed upon by the parties hereto which in all cases shall be freely tradable, transferable, registered shares in good deliverable form. Unless otherwise specified in the applicable Placement Notice, on each Settlement Date, the Agent will deliver the related Net Proceeds in same day funds to an account designated by the Company on, or prior to, the Settlement Date. The Company agrees that if the Company, or its transfer agent (if applicable), defaults in its obligation to deliver Placement Shares on a Settlement Date through no fault of the Agent, then in addition to and in no way limiting the rights and obligations set forth in Section 11(a) hereto, it will (i) hold the Agent harmless against any loss, claim, damage, or reasonable, documented expense (including reasonable and documented legal fees and expenses), as incurred, arising out of or in connection with such default by the Company or its transfer agent (if applicable) and (ii) pay to the Agent (without duplication) any commission, discount, or other compensation to which it would otherwise have been entitled absent such default.

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d. Limitations on Offering Size. Under no circumstances shall the Company cause or request the offer or sale of any Placement Shares if, after giving effect to the sale of such Placement Shares, the aggregate number of Placement Shares sold pursuant to this Agreement would exceed the lesser of (A) together with all sales of Placement Shares under this Agreement, the Maximum Amount, (B) the amount available for offer and sale under the currently effective Registration Statement and (C) the amount authorized from time to time to be issued and sold under this Agreement by the Company’s board of directors, a duly authorized committee thereof or a duly authorized executive committee, and notified to the Agent in writing. Under no circumstances shall the Company cause or request the offer or sale of any Placement Shares pursuant to this Agreement at a price lower than the minimum price authorized from time to time by the Company’s board of directors, a duly authorized committee thereof or a duly authorized executive committee, and notified to the Agent in writing.

6. Representations and Warranties of the Company. The Company represents and warrants to, and agrees with the Agent that as of the date of this Agreement and as of each Applicable Time (as defined below), unless such representation, warranty or agreement specifies a different date or time:

a. Registration Statement and Prospectus. The transactions contemplated by this Agreement meet the requirements for and comply with the conditions for the use of Form S-3 under the Securities Act. The Registration Statement shall be filed with the Commission and, before the Company delivers any Placement Notice hereunder, will have been declared effective under the Securities Act. The Prospectus Supplement will name the Agent as the agent in the section entitled “Plan of Distribution.” The Company has not received, and has no notice of, any order of the Commission preventing or suspending the use of the Registration Statement, or threatening or instituting proceedings for that purpose. The Registration Statement and the offer and sale of Placement Shares as contemplated hereby meet the requirements of Rule 415 under the Securities Act and comply in all material respects with said Rule. Any statutes, regulations, contracts or other documents that are required to be described in the Registration Statement or the Prospectus or to be filed as exhibits to the Registration Statement have been so described or filed, as applicable. Copies of the Registration Statement, the Prospectus, and any such amendments or supplements and all documents incorporated by reference therein that were filed with the Commission on or prior to the date of this Agreement have been delivered, or are available through EDGAR, to the Agent and its counsel. The Company has not distributed and, prior to the later to occur of each Settlement Date and completion of the distribution of the Placement Shares, will not distribute any offering material in connection with the offering or sale of the Placement Shares other than the Registration Statement and the Prospectus and any Issuer Free Writing Prospectus (as defined below) to which the Agent has consented, which consent will not be unreasonably withheld or delayed, or that is required by applicable law or the listing maintenance requirements of the Exchange. The Common Stock is currently quoted on the Exchange under the trading symbol “ENZ.” The Company has not, in the 12 months preceding the date hereof, received notice from the Exchange to the effect that the Company is not in compliance with the listing or maintenance requirements of the Exchange. To the Company’s knowledge, it is in compliance with all such listing and maintenance requirements.

b. No Misstatement or Omission. At each Settlement Date, the Registration Statement and the Prospectus, as of such date, will conform in all material respects with the requirements of the Securities Act. The Registration Statement, when it became or becomes effective, did not, and will not, contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. The Prospectus and any amendment and supplement thereto, on the date thereof and at each Applicable Time, did not or will not include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in light of the circumstances under which they were made, not misleading. The documents incorporated by reference in the Prospectus or any Prospectus Supplement did not, and any further documents filed and incorporated by reference therein will not, when filed with the Commission, contain an untrue statement of a material fact or omit to state a material fact required to be stated in such document or necessary to make the statements in such document, in light of the circumstances under which they were made, not misleading. The foregoing shall not apply to statements in, or omissions from, any such document made in reliance upon, and in conformity with, information furnished to the Company by the Agent specifically for use in the preparation thereof; *provided that*, for purposes of this Agreement, the only information so furnished shall be (i) the name of the Agent and (ii) such other statements as may have been furnished, by notice given by the Agent to the Company in writing after the date of this Agreement, specifically for inclusion in the Registration Statement (or any amendment thereto), the Prospectus (or any amendment or supplement thereto) or any Issuer Free Writing Prospectus (collectively, the “Agent Information”).

c. Conformity with Securities Act and Exchange Act. The Registration Statement, the Prospectus, any Issuer Free Writing Prospectus or any amendment or supplement thereto, and the Incorporated Documents, when such documents were or are filed with the Commission under the Securities Act or the Exchange Act or became or become effective under the Securities Act, as the case may be, conformed or will conform in all material respects with the requirements of the Securities Act and the Exchange Act, as applicable.

d. Financial Information. The consolidated financial statements of the Company included or incorporated by reference in the Registration Statement and the Prospectus, together with the related notes and schedules, present fairly, in all material respects, the consolidated financial position of the Company and the Subsidiaries (as defined below) as of the dates indicated and the consolidated results of operations, cash flows and changes in stockholders’ equity of the Company and the Subsidiaries for the periods specified (subject, in the case of unaudited statements, to normal year-end audit adjustments which will not be material, either individually or in the aggregate) and have been prepared in compliance with the published requirements of the Securities Act and Exchange Act, as applicable, and in conformity with generally accepted accounting principles in the United States (“GAAP”) applied on a consistent basis (except (i) for such adjustments to accounting standards and practices as are noted therein and (ii) in the case of unaudited interim statements, to the extent they may exclude footnotes or may be condensed or summary statements) during the periods involved; the other financial and statistical data with respect to the Company and the Subsidiaries contained or incorporated by reference in the Registration Statement and the Prospectus, are accurately and fairly presented in all material respects and prepared on a basis consistent with the financial statements and books and records of the Company; there are no financial statements (historical or pro forma) that are required to be included or incorporated by reference in the Registration Statement, or the Prospectus that are not included or incorporated by reference as required; the Company and the Subsidiaries do not have any material liabilities or obligations, direct or contingent (including any off balance sheet obligations), not described in the Registration Statement, and the Prospectus which are required to be described in the Registration Statement or Prospectus; and all disclosures contained or incorporated by reference in the Registration Statement and the Prospectus, if any, regarding “non-GAAP financial measures” (as such term is defined by the rules and regulations of the Commission) comply in all material respects with Regulation G of the Exchange Act and Item 10 of Regulation S-K under the Securities Act, to the extent applicable.

e. Conformity with EDGAR Filing. The Prospectus delivered to the Agent for use in connection with the sale of the Placement Shares pursuant to this Agreement will be identical to the version of the Prospectus created to be transmitted to the Commission for filing via EDGAR, except to the extent permitted by Regulation S-T.

f. Organization. The Company and any subsidiary that is a significant subsidiary (as such term is defined in Rule 1-02 of Regulation S-X promulgated by the Commission) (each, a “Subsidiary,” collectively, the “Subsidiaries”), are, and will be, duly organized, validly existing as a corporation or limited liability company, as applicable, and in good standing under the laws of their respective jurisdictions of organization. The Company and the Subsidiaries are duly licensed or qualified as a foreign corporation for transaction of business and in good standing under the laws of each other jurisdiction in which their respective ownership or lease of property or the conduct of their respective businesses requires such license or qualification, and have all corporate power and authority necessary to own or hold their respective properties and to conduct their respective businesses as described in the Registration Statement and the Prospectus, except where the failure to be so qualified or in good standing or have such power or authority would not, individually or in the aggregate, have a material adverse effect or would reasonably be expected to have a material adverse effect on or affecting the assets, business, operations, earnings, properties, condition (financial or otherwise), stockholders’ equity or results of operations of the Company and the Subsidiaries (as defined below) taken as a whole, or prevent or materially interfere with consummation of the transactions contemplated hereby (a “Material Adverse Effect”).

g. Subsidiaries. The Company owns directly or indirectly, all of the equity interests of the Subsidiaries free and clear of any lien, charge, security interest, encumbrance, right of first refusal or other restriction, and all the equity interests of the Subsidiaries are validly issued and are fully paid, nonassessable and free of preemptive and similar rights. The Company does not own or control, directly or indirectly, any corporation, association or other entity other than the subsidiaries listed in Exhibit 21.1 to the Company’s Annual Report on Form 10-K for the most recently ended fiscal year and other than (i) those subsidiaries not required to be listed on Exhibit 21.1 by Item 601 of Regulation S-K under the Exchange Act and (ii) those subsidiaries formed since the last day of the most recently ended fiscal year.

h. No Violation or Default. Neither the Company nor any Subsidiary is (i) in violation of its charter or by-laws or similar organizational documents; (ii) in default, and no event has occurred that, with notice or lapse of time or both, would constitute such a default, in the due performance or observance of any term, covenant or condition contained in any indenture, mortgage, deed of trust, loan agreement or other similar agreement or instrument to which the Company or any Subsidiary is a party or by which the Company or any Subsidiary is bound or to which any of the property or assets of the Company or any Subsidiary is subject; or (iii) in violation of any law or statute or any judgment, order, rule or regulation of any court or arbitrator or governmental or regulatory authority, except, in the case of each of clauses (ii) and (iii) above, for any such violation or default that would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. To the Company’s knowledge, no other party under any material contract or other agreement to which it or any Subsidiary is a party is in default in any respect thereunder where such default would reasonably be expected to have a Material Adverse Effect.

i. No Material Adverse Change. Since the date of the most recent financial statements of the Company included or incorporated by reference in the Registration Statement and Prospectus, there has not been (i) any Material Adverse Effect, or any development that the Company reasonably expects would result in a Material Adverse Effect, (ii) any transaction which is material to the Company and the Subsidiaries taken as a whole, (iii) any obligation or liability, direct or contingent (including any off-balance sheet obligations), incurred by the Company or the Subsidiaries, which is material to the Company and the Subsidiaries taken as a whole, (iv) any material change in the capital stock (other than (A) the grant of additional options under the Company’s existing stock option plans, (B) changes in the number of outstanding Common Stock of

the Company due to the issuance of shares upon the exercise or conversion of securities exercisable for, or convertible into, Common Stock outstanding on the date hereof, (C) as a result of the issuance of Placement Shares, (D) any repurchases of capital stock of the Company, (E) as described in a proxy statement filed on Schedule 14A or a Registration Statement on Form S-4, or (F) otherwise publicly announced) or outstanding long-term indebtedness of the Company or the Subsidiaries or (v) any dividend or distribution of any kind declared, paid or made on the capital stock of the Company or any Subsidiary, other than in each case above in the ordinary course of business or as otherwise disclosed in the Registration Statement or Prospectus (including any document incorporated by reference therein).

j. Capitalization. The issued and outstanding shares of capital stock of the Company have been validly issued, are fully paid and non-assessable and, other than as disclosed in the Registration Statement or the Prospectus, are not subject to any preemptive rights, rights of first refusal or similar rights. The Company has an authorized, issued and outstanding capitalization as set forth in the Registration Statement and the Prospectus as of the dates referred to therein (other than (i) the grant of additional options under the Company's existing stock option plans, (ii) changes in the number of outstanding Common Stock of the Company due to the issuance of shares upon the exercise or conversion of securities exercisable for, or convertible into, Common Stock outstanding on the date hereof, (iii) as a result of the issuance of Placement Shares, or (iv) any repurchases of capital stock of the Company) and such authorized capital stock conforms to the description thereof set forth in the Registration Statement and the Prospectus. The description of the Common Stock in the Registration Statement and the Prospectus is complete and accurate in all material respects. Except as disclosed in or contemplated by the Registration Statement or the Prospectus, the Company did not have outstanding any options to purchase, or any rights or warrants to subscribe for, or any securities or obligations convertible into, or exchangeable for, or any contracts or commitments to issue or sell, any shares of capital stock or other securities.

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k. S-3 Eligibility. (i) At the time of filing the Registration Statement and (ii) at the time of the most recent amendment thereto for the purposes of complying with Section 10(a)(3) of the Securities Act (whether such amendment was by post-effective amendment, incorporated report filed pursuant to Section 13 or 15(d) of the Exchange Act or form of prospectus), the Company met the then applicable requirements for use of Form S-3 under the Securities Act, including compliance with General Instruction I.B.1 of Form S-3, as applicable. The Company is not a shell company (as defined in Rule 405 under the Securities Act) and has not been a shell company for at least 12 calendar months previously and if it has been a shell company at any time previously, has filed current Form 10 information (as defined in General Instruction I.B.6 of Form S-3) with the Commission at least 12 calendar months previously reflecting its status as an entity that is not a shell company.

l. Authorization; Enforceability. The Company has full legal right, power and authority to enter into this Agreement and perform the transactions contemplated hereby. This Agreement has been duly authorized, executed and delivered by the Company and is a legal, valid and binding agreement of the Company enforceable against the Company in accordance with its terms, except to the extent that (i) enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' rights generally and by general equitable principles and (ii) the indemnification and contribution provisions of Section 11 hereof may be limited by federal or state securities laws and public policy considerations in respect thereof.

m. Authorization of Placement Shares. The Placement Shares, when issued and delivered pursuant to the terms approved by the board of directors of the Company or a duly authorized committee thereof, or a duly authorized executive committee, against payment therefor as provided herein, will be duly and validly authorized and issued and fully paid and nonassessable, free and clear of any pledge, lien, encumbrance, security interest or other claim (other than any pledge, lien, encumbrance, security interest or other claim arising from an act or omission of the Agent or a purchaser), including any statutory or contractual preemptive rights, resale rights, rights of first refusal or other similar rights, and will be registered pursuant to Section 12 of the Exchange Act. The Placement Shares, when issued, will conform in all material respects to the description thereof set forth in or incorporated into the Prospectus.

n. No Consents Required. No consent, approval, authorization, order, registration or qualification of or with any court or arbitrator or any governmental or regulatory authority is required for the execution, delivery and performance by the Company of this Agreement, and the issuance and sale by the Company of the Placement Shares as contemplated hereby, except for such consents, approvals, authorizations, orders and registrations or qualifications (i) as may be required under applicable state securities laws or by the by-laws and rules of the Financial Industry Regulatory Authority ("FINRA") or the Exchange, including any notices that may be required by the Exchange, in connection with the sale of the Placement Shares by the Agent, (ii) as may be required under the Securities Act and (iii) as have been previously obtained by the Company.

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o. No Preferential Rights. Except as set forth in the Registration Statement and the Prospectus, (i) no person, as such term is defined in Rule 1-02 of Regulation S-X promulgated under the Securities Act (each, a "Person"), has the right, contractual or otherwise, to cause the Company to issue or sell to such Person any Common Stock or shares of any other capital stock or other securities of the Company (other than upon the exercise of options or warrants to purchase Common Stock or upon the exercise of options that may be granted from time to time under the Company's stock option plan), (ii) no Person has any preemptive rights, rights of first refusal, or any other rights (whether pursuant to a "poison pill" provision or otherwise) to purchase any Common Stock or shares of any other capital stock or other securities of the Company from the Company which have not been duly waived with respect to the offering contemplated hereby, (iii) no Person has the right to act as an underwriter or as a financial advisor to the Company in connection with the offer and sale of the Common Stock, and (iv) no Person has the right, contractual or otherwise, to require the Company to register under the Securities Act any Common Stock or shares of any other capital stock or other securities of the Company, or to include any such shares or other securities in the Registration Statement or the offering contemplated thereby, whether as a result of the filing or effectiveness of the Registration Statement or the sale of the Placement Shares as contemplated thereby or otherwise, except in each case for such rights as have been waived on or prior to the date hereof.

p. Independent Public Accountant. EisnerAmper LLP (the "Accountant"), whose report on the consolidated financial statements of the Company is filed with the Commission as part of the Company's most recent Annual Report on Form 10-K filed with the Commission and incorporated into the Registration Statement, are and, during the periods covered by their report, were independent public accountants within the meaning of the Securities Act and the Public Company Accounting Oversight Board (United States). To the Company's knowledge, the Accountant is not in violation of the auditor independence requirements of the Sarbanes-Oxley Act of 2002 (the "Sarbanes-Oxley Act") with respect to the Company.

q. Enforceability of Agreements. All agreements between the Company and third parties expressly referenced in the Prospectus, other than such agreements that have expired by their terms or whose termination is disclosed in documents filed by the Company on EDGAR, are legal, valid and binding obligations of the Company and, to the Company's knowledge, enforceable in accordance with their respective terms, except to the extent that (i) enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' rights generally and by general equitable principles and (ii) the indemnification provisions of certain agreements may be limited by federal or state securities laws or public policy considerations in respect thereof, and except for any unenforceability that, individually or in the aggregate, would not have a Material Adverse Effect.

r. No Litigation. There are no legal or governmental proceedings pending or threatened to which the Company or any Subsidiary is a party or to which any of the properties of the Company or any Subsidiary is subject (i) other than proceedings accurately described in all material respects in the Prospectus or (ii) that are required to be described in the Registration Statement or the Prospectus and are not so described; and there are no statutes, regulations, contracts or other documents that are required to be described in the Registration Statement or the Prospectus or to be filed as exhibits to the Registration Statement that are not described or filed as required.



s. Licenses and Permits. The Company and the Subsidiaries possess or have obtained, all licenses, certificates, consents, orders, approvals, permits and other authorizations issued by, and have made all declarations and filings with, the appropriate federal, state, local or foreign governmental or regulatory authorities that are necessary for the ownership or lease of their respective properties or the conduct of their respective businesses as currently conducted, as described in the Registration Statement and the Prospectus (the “Permits”), except where the failure to possess, obtain or make the same would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. Neither the Company nor any Subsidiary has received written notice of any proceeding relating to revocation or modification of any such Permit which, singly or in the aggregate, would reasonably be expected to have a Material Adverse Effect or has any reason to believe that such Permit will not be renewed in the ordinary course, except where the failure to obtain any such renewal would not, individually or in the aggregate, have a Material Adverse Effect.

t. No Material Defaults. Neither the Company nor any Subsidiary has defaulted on any installment on indebtedness for borrowed money or on any rental on one or more long-term leases, which defaults, individually or in the aggregate, would reasonably be expected to have a Material Adverse Effect. The Company has not filed a report pursuant to Section 13(a) or 15(d) of the Exchange Act since the filing of its last Annual Report on Form 10-K, indicating that it (i) has failed to pay any dividend or sinking fund installment on preferred stock or (ii) has defaulted on any installment on indebtedness for borrowed money or on any rental on one or more long-term leases, which defaults, individually or in the aggregate, would reasonably be expected to have a Material Adverse Effect.

u. Certain Market Activities. Neither the Company, nor any Subsidiary, nor, to the knowledge of the Company, any of their respective directors, officers or controlling persons has taken, directly or indirectly, any action designed, or that has constituted or would reasonably be expected to cause or result in, under the Exchange Act or otherwise, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Placement Shares.

v. Broker/Dealer Relationships. Neither the Company nor any Subsidiary or any related entities (i) is required to register as a “broker” or “dealer” in accordance with the provisions of the Exchange Act or (ii) directly or indirectly through one or more intermediaries, controls or is a “person associated with a member” or “associated person of a member” (within the meaning set forth in the FINRA Manual).

w. No Reliance. The Company has not relied upon the Agent or legal counsel for the Agent for any legal, tax or accounting advice in connection with the offering and sale of the Placement Shares.

x. Taxes. The Company and the Subsidiaries have filed all federal, state, local and foreign tax returns which have been required to be filed and paid all taxes shown thereon through the date hereof, to the extent that such taxes have become due and are not being contested in good faith, except where the failure to do so would not reasonably be expected to have a Material Adverse Effect. Except as otherwise disclosed in or contemplated by the Registration Statement or the Prospectus, no tax deficiency has been determined adversely to the Company or any Subsidiary which has had, or would reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect. The Company has no knowledge of any federal, state or other governmental tax deficiency, penalty or assessment which has been or might be asserted or threatened against it which would reasonably be expected to have a Material Adverse Effect.

y. Title to Real and Personal Property. Except as set forth in the Registration Statement or the Prospectus, the Company and the Subsidiaries have good and valid title in fee simple to all items of real property and good and valid title to all personal property described in the Registration Statement or Prospectus as being owned by them that are material to the businesses of the Company or such Subsidiary, in each case free and clear of all liens, encumbrances and claims, except those that (i) do not materially interfere with the use made and proposed to be made of such property by the Company and the Subsidiaries or (ii) would not reasonably be expected to, individually or in the aggregate, have a Material Adverse Effect. Any real property described in the Registration Statement or Prospectus as being leased by the Company and the Subsidiaries is held by them under valid, existing and enforceable leases, except those that (A) do not materially interfere with the use made or proposed to be made of such property by the Company or the Subsidiaries or (B) would not, individually or in the aggregate, have a Material Adverse Effect.

z. Intellectual Property. Except as disclosed in the Registration and the Prospectus, the Company and its Subsidiaries own or possess adequate enforceable rights to use all patents, patent applications, trademarks (both registered and unregistered), trade names, trademark registrations, service marks, service mark registrations, Internet domain name registrations, copyrights, copyright registrations, licenses and know-how (including trade secrets and other unpatented and/or unpatentable proprietary or confidential information, systems or procedures) (collectively, the “Intellectual Property”), necessary for the conduct of their respective businesses as conducted as of the date hereof, except to the extent that the failure to own or possess adequate rights to use such Intellectual Property would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. Except as disclosed in the Registration and the Prospectus, the Company and the Subsidiaries have not received any written notice of any claim of infringement or conflict which asserted Intellectual Property rights of others, which infringement or conflict, if the subject of an unfavorable decision, that the Company reasonably expects would result in a Material Adverse Effect. Except as disclosed in the Registration and the Prospectus, there are no pending, or to the Company’s knowledge, threatened judicial proceedings or interference proceedings challenging the Company’s or any Subsidiary’s rights in or to or the validity of the scope of any of the Company’s or its Subsidiaries’ patents, patent applications or proprietary information. Except as disclosed in the Registration and the Prospectus, no other entity or individual has any right or claim in any of the Company’s or any of its Subsidiary’s patents, patent applications or any patent to be issued therefrom by virtue of any contract, license or other agreement entered into between such entity or individual and the Company or any Subsidiary or by any non-contractual obligation, other than by written licenses granted by the Company or any Subsidiary. Except as disclosed in the Registration and the Prospectus, the Company has not received any written notice of any claim challenging the rights of the Company or its Subsidiaries in or to any Intellectual Property owned, licensed or optioned by the Company or any Subsidiary which claim, if the subject of an unfavorable decision, that the Company reasonably expects would result in a Material Adverse Effect.

aa. Compliance with Applicable Laws. The Company has not been advised, and has no reason to believe, that it and each of its Subsidiaries are not conducting business in compliance with all applicable laws, rules and regulations of the jurisdictions in which it is conducting business, except where failure to be so in compliance would not result in a Material Adverse Effect.

bb. Environmental Laws. Except as set forth in the Registration Statement or the Prospectus, the Company and the Subsidiaries (i) are in compliance with any and all applicable federal, state, local and foreign laws, rules, regulations, decisions and orders relating to the protection of human health and safety, the environment or hazardous or toxic substances or wastes, pollutants or contaminants (collectively, “Environmental Laws”); (ii) have received and are in compliance with all permits, licenses or other approvals required of them under applicable Environmental Laws to conduct their respective businesses as described in the Registration Statement and the Prospectus; and (iii) have not received notice of any actual or potential liability for the investigation or remediation of any disposal or release of hazardous or toxic substances or wastes, pollutants or contaminants, except, in the case of any of clauses (i), (ii) or (iii) above, for any such failure to comply or failure to receive required permits, licenses, other approvals or liability as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

cc. Disclosure Controls. The Company maintains a system of internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in accordance with management's general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain asset accountability; (iii) access to assets is permitted only in accordance with management's general or specific authorization; and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. The Company is not aware of any material weaknesses in its internal control over financial reporting (other than as set forth in the Registration Statement or the Prospectus). Since the date of the latest audited financial statements of the Company included in the Prospectus, there has been no change in the Company's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting (other than as set forth in the Registration Statement or the Prospectus). The Company has established disclosure controls and procedures (as defined in Exchange Act Rules 13a-15 and 15d-15) that comply with the requirements of the Exchange Act. The Company's certifying officers have evaluated the effectiveness of the Company's controls and procedures as of a date within 90 days prior to the filing date of the Form 10-K for the fiscal year most recently ended (such date, the "Evaluation Date"). The Company presented in its Form 10-K for the fiscal year most recently ended the conclusions of the certifying officers about the effectiveness of the disclosure controls and procedures based on their evaluations as of the most recent Evaluation Date, and the "disclosure controls and procedures" are effective.

dd. Sarbanes-Oxley Act. There is and has been no failure on the part of the Company or, to the knowledge of the Company, any of the Company's directors or officers, in their capacities as such, to comply in all material respects with any applicable provisions of the Sarbanes-Oxley Act and the rules and regulations promulgated thereunder. Each of the principal executive officer and the principal financial officer of the Company (or each former principal executive officer of the Company and each former principal financial officer of the Company as applicable) has made all certifications required by Sections 302 and 906 of the Sarbanes-Oxley Act with respect to all reports, schedules, forms, statements and other documents required to be filed by it or furnished by it to the Commission during the past 12 months. For purposes of all preceding sentence, "principal executive officer" and "principal financial officer" shall have the meanings given to such terms in the Exchange Act Rules 13a-15 and 15d-15.

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ee. Finder's Fees. Neither the Company nor any Subsidiary has incurred any liability for any finder's fees, brokerage commissions or similar payments in connection with the transactions herein contemplated, except as may otherwise exist with respect to the Agent pursuant to this Agreement.

ff. Labor Disputes. No labor disturbance by or dispute with employees of the Company or any Subsidiary exists or, to the knowledge of the Company, is threatened which would reasonably be expected to result in a Material Adverse Effect.

gg. Investment Company Act. Neither the Company nor any Subsidiary is or, after giving effect to the offering and sale of the Placement Shares, will be required to register as an "investment company" or an entity "controlled" by an "investment company," as such terms are defined in the Investment Company Act of 1940, as amended (the "Investment Company Act").

hh. Operations. The operations of the Company and the Subsidiaries are and have been conducted at all times in compliance with applicable financial record keeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all jurisdictions to which the Company or the Subsidiaries are subject, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency having jurisdiction over the Company (collectively, the "Money Laundering Laws"), except where the failure to be in such compliance would not reasonably be expected to result in a Material Adverse Effect; and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any Subsidiary with respect to the Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

ii. Off-Balance Sheet Arrangements. There are no transactions, arrangements and other relationships between and/or among the Company, and/or, to the knowledge of the Company, any of its affiliates and any unconsolidated entity, including, but not limited to, any structured finance, special purpose or limited purpose entity (each, an "Off Balance Sheet Transaction") that could reasonably be expected to affect materially the Company's liquidity or the availability of or requirements for its capital resources, including those Off Balance Sheet Transactions described in the Commission's Statement about Management's Discussion and Analysis of Financial Conditions and Results of Operations (Release Nos. 33-8056; 34-45321; FR-61), required to be described in the Registration Statement or the Prospectus which have not been described as required.

jj. Underwriter Agreements. Other than with respect to this Agreement, the Company is not a party to any agreement with an agent or underwriter for any other "at the market" or continuous equity transaction.

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kk. ERISA. To the knowledge of the Company, (i) each material employee benefit plan, within the meaning of Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended ("ERISA") that is maintained, administered or contributed to by the Company or any of its affiliates for employees or former employees of the Company and the Subsidiaries has been maintained in material compliance with its terms and the requirements of any applicable statutes, orders, rules and regulations, including but not limited to ERISA and the Internal Revenue Code of 1986, as amended (the "Code"); (ii) no prohibited transaction, within the meaning of Section 406 of ERISA or Section 4975 of the Code, has occurred which would result in a material liability to the Company with respect to any such plan excluding transactions effected pursuant to a statutory or administrative exemption; and (iii) for each such plan that is subject to the funding rules of Section 412 of the Code or Section 302 of ERISA, no "accumulated funding deficiency" as defined in Section 412 of the Code has been incurred, whether or not waived, and the fair market value of the assets of each such plan (excluding for these purposes accrued but unpaid contributions) equals or exceeds the present value of all benefits accrued under such plan determined using reasonable actuarial assumptions, other than, in the case of (i), (ii) and (iii) above, as would not have a Material Adverse Effect.

ll. Forward-Looking Statements. No forward-looking statement (within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act) (a "Forward-Looking Statement") contained in the Registration Statement and the Prospectus has been made or reaffirmed without a reasonable basis or has been disclosed other than in good faith.

mm. Margin Rules. Neither the issuance, sale and delivery of the Placement Shares nor the application of the proceeds thereof by the Company as described in the Registration Statement and the Prospectus will violate Regulation T, U or X of the Board of Governors of the Federal Reserve System.

nn. Insurance. The Company and the Subsidiaries carry, or are covered by, insurance in such amounts and covering such risks as the Company and the Subsidiaries reasonably believe is prudent and customary for companies engaged in similar businesses in similar industries.

oo. No Improper Practices. (i) Neither the Company nor, to the Company's knowledge, the Subsidiaries, nor to the Company's knowledge, any of their respective executive officers has, in the past five years, made any unlawful contributions to any candidate for any political office (or failed fully to disclose any contribution in violation of law) or made any contribution or other payment to any official of, or candidate for, any federal, state, municipal, or foreign office or other person charged with similar public or quasi-public duty in violation of any law or of the character required to be disclosed in the Prospectus; (ii) no relationship, direct or indirect, exists between or among the Company or, to the Company's knowledge, the Subsidiaries or any affiliate of any of them, on the one hand, and the directors, officers and stockholders of the Company or, to the Company's knowledge, the Subsidiaries, on the other hand, that is required by the Securities Act to be described in the Registration Statement and the

Prospectus that is not so described; (iii) no relationship, direct or indirect, exists between or among the Company or the Subsidiaries or any affiliate of them, on the one hand, and the directors, officers, stockholders or directors of the Company or, to the Company's knowledge, the Subsidiaries, on the other hand, that is required by the rules of FINRA to be described in the Registration Statement and the Prospectus that is not so described; (iv) there are no material outstanding loans or advances or material guarantees of indebtedness by the Company or, to the Company's knowledge, the Subsidiaries to or for the benefit of any of their respective officers or directors or any of the members of the families of any of them; and (v) the Company has not offered, or caused any placement agent to offer, Common Stock to any person with the intent to influence unlawfully (A) a customer or supplier of the Company or the Subsidiaries to alter the customer's or supplier's level or type of business with the Company or the Subsidiaries or (B) a trade journalist or publication to write or publish favorable information about the Company or the Subsidiaries or any of their respective products or services, and, (vi) neither the Company nor the Subsidiaries nor, to the Company's knowledge, any employee or agent of the Company or the Subsidiaries has made any payment of funds of the Company or the Subsidiaries or received or retained any funds in violation of any law, rule or regulation (including, without limitation, the Foreign Corrupt Practices Act of 1977), which payment, receipt or retention of funds is of a character required to be disclosed in the Registration Statement or the Prospectus.

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pp. Status Under the Securities Act. The Company was not and is not an ineligible issuer as defined in Rule 405 under the Securities Act at the times specified in Rules 164 and 433 under the Securities Act in connection with the offering of the Placement Shares.

qq. No Misstatement or Omission in an Issuer Free Writing Prospectus. Each Issuer Free Writing Prospectus, as of its issue date and as of each Applicable Time (as defined in Section 25 below), did not, does not and will not, through the completion of the Placement or Placements for which such Issuer Free Writing Prospectus is issued, include any information that conflicted, conflicts or will conflict with the information contained in the Registration Statement or the Prospectus, including any incorporated document deemed to be a part thereof that has not been superseded or modified. The foregoing sentence does not apply to Agent Information.

rr. No Conflicts. Neither the execution of this Agreement, nor the issuance, offering or sale of the Placement Shares, nor the consummation of any of the transactions contemplated herein, nor the compliance by the Company with the terms and provisions hereof will conflict with, or will result in a breach of, any of the terms and provisions of, or has constituted or will constitute a default under, or has resulted in or will result in the creation or imposition of any lien, charge or encumbrance upon any property or assets of the Company pursuant to the terms of any contract or other agreement to which the Company may be bound or to which any of the property or assets of the Company is subject, except (i) such conflicts, breaches or defaults as may have been waived and (ii) such conflicts, breaches and defaults that would not reasonably be expected to have a Material Adverse Effect; nor will such action result (x) in any violation of the provisions of the organizational or governing documents of the Company, or (y) in any material violation of the provisions of any statute or any order, rule or regulation applicable to the Company or of any court or of any federal, state or other regulatory authority or other government body having jurisdiction over the Company, except where such violation would not reasonably be expected to have a Material Adverse Effect.

ss. OFAC.

(i) Neither the Company nor any Subsidiary (collectively, the "Entity") nor any director, officer, nor, to the Company's knowledge, employee, agent, affiliate or representative of the Entity, is a government, individual, or entity (in this paragraph (uu), "Person") that is, or is owned or controlled by a Person that is:

(a) the subject of any sanctions administered or enforced by the U.S. Department of Treasury's Office of Foreign Assets Control ("OFAC"), the United Nations Security Council ("UNSC"), the European Union ("EU"), Her Majesty's Treasury ("HMT"), or other relevant sanctions authority (collectively, "Sanctions"), nor

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(b) located, organized or resident in a country or territory that is the subject of Sanctions.

(ii) The Entity will not, directly or indirectly, knowingly use the proceeds of the offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other Person:

(a) to fund or facilitate any activities or business of or with any Person or in any country or territory that, at the time of such funding or facilitation, is the subject of Sanctions; or

(b) in any other manner that will result in a violation of Sanctions by any Person (including any Person participating in the offering, whether as underwriter, advisor, investor or otherwise).

(iii) The Entity represents and covenants that, except as detailed in the Registration Statement and the Prospectus, for the past 5 years, it has not knowingly engaged in and is not now knowingly engaged in any dealing or transactions with any Person, or in any country or territory, that at the time of the dealing or transaction is or was the subject of Sanctions.

tt. Stock Transfer Taxes. On each Settlement Date, all material stock transfer or other taxes (other than income taxes) which are required to be paid in connection with the sale and transfer of the Placement Shares to be sold hereunder will be, or will have been, fully paid or provided for by the Company and all laws imposing such taxes will be or will have been fully complied with by the Company in all material respects.

uu. IT Systems. Except as otherwise disclosed in the Registration Statement or the Prospectus, (i)(x) to the knowledge of the Company, there has been no material security breach or other compromise of any of the Company's information technology and computer systems, networks, hardware, software, data (including the data of its customers, employees, suppliers, vendors and any third party data maintained by or on behalf of the Company), equipment or technology (collectively, "IT Systems and Data") and (y) the Company has not been notified of, and has no knowledge of any event or condition that would reasonably be expected to result in, any security breach or other compromise to the Company's IT Systems and Data; (ii) the Company is presently in material compliance with all applicable laws or statutes and all judgments, orders, rules and regulations of any court or arbitrator or governmental or regulatory authority, internal policies and contractual obligations relating to the privacy and security of IT Systems and Data and to the protection of such IT Systems and Data from unauthorized use, access, misappropriation or modification, except as would not, in the case of this clause (ii), individually or in the aggregate, have a Material Adverse Effect; and (iii) the Company has implemented backup and disaster recovery technology consistent with industry standards and practices.

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vv. No Unlawful Contributions or Other Payments. None of the Company, any of its Subsidiaries nor any director, officer, nor, to the knowledge of the

Company, agent, employee, affiliate or other person acting on behalf of the Company or any of its Subsidiaries has (i) used any corporate funds for any unlawful contribution, gift, entertainment or other unlawful expense relating to political activity; (ii) made or taken an act in furtherance of an offer, promise or authorization of any direct or indirect unlawful payment or benefit to any foreign or domestic government official or employee, including of any government-owned or controlled entity or of a public international organization, or any person acting in an official capacity for or on behalf of any of the foregoing, or any political party or party official or candidate for political office; (iii) violated or is in violation of any provision of the Foreign Corrupt Practices Act of 1977, as amended, or any applicable law or regulation implementing the OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions, or committed an offence under the Bribery Act 2010 of the United Kingdom or any other applicable anti-bribery or anti-corruption law; or (iv) made, offered, agreed, requested or taken an act in furtherance of any unlawful bribe or other unlawful benefit, including, without limitation, any rebate, payoff, influence payment, kickback or other unlawful or improper payment or benefit, in each case in connection with or related to the Company or any of its Subsidiaries or businesses; and the Company, its Subsidiaries and, to the knowledge of the Company, its affiliates have conducted their businesses in material compliance with all applicable anti-bribery and anti-corruption laws and have instituted and maintain policies and procedures designed to ensure, and which are reasonably expected to continue to ensure, continued compliance therewith.

ww. Money Laundering Laws. The operations of each of the Company and its Subsidiaries are and have been conducted at all times in compliance with applicable financial recordkeeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all jurisdictions, the rules and regulations thereunder and any related or similar rules, regulations or guidelines issued, administered or enforced by any Governmental Entity (collectively, the “Money Laundering Laws”). No action, suit or proceeding or, to the actual knowledge of the Company after due inquiry, inquiry or investigation by or before any Governmental Entity involving the Company or any of its Subsidiaries with respect to the Money Laundering Laws is pending and, to the actual knowledge of the Company after due inquiry, no such action, suit, proceeding, inquiry or investigation is threatened.

Any certificate signed by an officer of the Company and delivered to the Agent or to counsel for the Agent pursuant to or in connection with this Agreement shall be deemed to be a representation and warranty by the Company, as applicable, to the Agent as to the matters set forth therein.

7. Covenants of the Company. The Company covenants and agrees with the Agent that:

a. Registration Statement Amendments. After the date of this Agreement and during any period in which a prospectus relating to any Placement Shares is required to be delivered by the Agent under the Securities Act (including in circumstances where such requirement may be satisfied pursuant to Rule 172 under the Securities Act) (the “Prospectus Delivery Period”) (i) the Company will notify the Agent promptly of the time when any subsequent amendment to the Registration Statement, other than documents incorporated by reference or amendments not related to any Placement, has been filed with the Commission and/or has become effective or any subsequent supplement to the Prospectus has been filed and of any request by the Commission for any amendment or supplement to the Registration Statement or Prospectus related to the Placement or for additional information related to the Placement, (ii) the Company will prepare and file with the Commission, promptly upon the Agent’s request, any amendments or supplements to the Registration Statement or Prospectus that, upon the advice of the Company’s legal counsel, may be necessary or advisable in connection with the distribution of the Placement Shares by the Agent (*provided, however*, that the failure of the Agent to make such request shall not relieve the Company of any obligation or liability hereunder, or affect the Agent’s right to rely on the representations and warranties made by the Company in this Agreement and provided, further, that the only remedy the Agent shall have with respect to the failure to make such filing shall be to cease making sales under this Agreement until such amendment or supplement is filed); (iii) the Company will not file any amendment or supplement to the Registration Statement or Prospectus relating to the Placement Shares or a security convertible into the Placement Shares (other than an Incorporated Document) unless a copy thereof has been submitted to the Agent within a reasonable period of time before the filing and the Agent has not reasonably objected thereto (*provided, however*, that (A) the failure of the Agent to make such objection shall not relieve the Company of any obligation or liability hereunder, or affect the Agent’s right to rely on the representations and warranties made by the Company in this Agreement and (B) the Company has no obligation to provide the Agent any advance copy of such filing or to provide the Agent an opportunity to object to such filing if the filing does not name the Agent or does not relate to the transaction herein provided; and provided, further, that the only remedy the Agent shall have with respect to the failure by the Company to obtain such consent shall be to cease making sales under this Agreement) and the Company will furnish to the Agent at the time of filing thereof a copy of any document that upon filing is deemed to be incorporated by reference into the Registration Statement or Prospectus, except for those documents available via EDGAR; and (iv) the Company will cause each amendment or supplement to the Prospectus to be filed with the Commission as required pursuant to the applicable paragraph of Rule 424(b) of the Securities Act or, in the case of any document to be incorporated therein by reference, to be filed with the Commission as required pursuant to the Exchange Act, within the time period prescribed (the determination to file or not file any amendment or supplement with the Commission under this Section 7(a), based on the Company’s reasonable opinion or reasonable objections, shall be made exclusively by the Company).

b. Notice of Commission Stop Orders. The Company will advise the Agent, promptly after it receives notice or obtains knowledge thereof, of the issuance or threatened issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement, of the suspension of the qualification of the Placement Shares for offering or sale in any jurisdiction, or of the initiation or threatening of any proceeding for any such purpose; and it will use its commercially reasonable efforts to prevent the issuance of any stop order or to obtain its withdrawal if such a stop order should be issued. The Company will advise the Agent promptly after it receives any request by the Commission for any amendments to the Registration Statement or any amendment or supplements to the Prospectus or any Issuer Free Writing Prospectus or for additional information related to the offering of the Placement Shares or for additional information related to the Registration Statement, the Prospectus or any Issuer Free Writing Prospectus.

c. Delivery of Prospectus: Subsequent Changes. During the Prospectus Delivery Period, the Company will comply with all requirements imposed upon it by the Securities Act, as from time to time in force, and to file on or before their respective due dates all reports and any definitive proxy or information statements required to be filed by the Company with the Commission pursuant to Sections 13(a), 13(c), 14, 15(d) or any other provision of or under the Exchange Act. If the Company has omitted any information from the Registration Statement pursuant to Rule 430A under the Securities Act, it will use its commercially reasonable efforts to comply with the provisions of and make all requisite filings with the Commission pursuant to said Rule 430A and to notify the Agent promptly of all such filings. If during the Prospectus Delivery Period any event occurs as a result of which the Prospectus as then amended or supplemented would include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances then existing, not misleading, or if during such Prospectus Delivery Period it is necessary to amend or supplement the Registration Statement or Prospectus to comply with the Securities Act, the Company will promptly notify the Agent to suspend the offering of Placement Shares during such period and the Company will promptly amend or supplement the Registration Statement or Prospectus (at the expense of the Company) so as to correct such statement or omission or effect such compliance; *provided, however*, that the Company may delay the filing of any amendment or supplement, if in the judgment of the Company, it is in the best interest of the Company.

d. Listing of Placement Shares. During the Prospectus Delivery Period, the Company will use its commercially reasonable efforts to cause the Placement Shares to be listed on the Exchange and to qualify the Placement Shares for sale under the securities laws of such jurisdictions in the United States as the Agent reasonably designates and to continue such qualifications in effect so long as required for the distribution of the Placement Shares; *provided, however*, that the Company shall not be required in connection therewith to qualify as a foreign corporation or dealer in securities, file a general consent to service of process, or subject itself to taxation in any jurisdiction if it is not otherwise so subject.

e. Delivery of Registration Statement and Prospectus. The Company will furnish to the Agent and its counsel (at the reasonable expense of the Company) copies of the Registration Statement, the Prospectus (including all documents incorporated by reference therein) and all amendments and supplements to the Registration Statement or Prospectus that are filed with the Commission during the Prospectus Delivery Period (including all documents filed with the Commission during such period that are deemed to be incorporated by reference therein), in each case as soon as reasonably practicable and in such quantities as the Agent may from time to time reasonably request and, at the Agent's request, will also furnish copies of the Prospectus to each exchange or market on which sales of the Placement Shares may be made; *provided, however*, that the Company shall not be required to furnish any document (other than the Prospectus) to the Agent to the extent such document is available on EDGAR.

f. Earnings Statement. The Company will make generally available to its security holders as soon as practicable, but in any event not later than 15 months after the end of the Company's current fiscal quarter, an earnings statement covering a 12-month period that satisfies the provisions of Section 11(a) and Rule 158 of the Securities Act.

g. Use of Proceeds. The Company will use the Net Proceeds as described in the Prospectus in the section entitled "Use of Proceeds."

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h. Notice of Other Sales. Without the prior written consent of the Agent, the Company will not, directly or indirectly, offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any Common Stock (other than the Placement Shares offered pursuant to this Agreement) or securities convertible into or exchangeable for Common Stock, warrants or any rights to purchase or acquire, Common Stock during the period beginning on the date on which any Placement Notice is delivered to the Agent hereunder and ending on the third (3rd) Trading Day immediately following the final Settlement Date with respect to Placement Shares sold pursuant to such Placement Notice (or, if the Placement Notice has been terminated or suspended prior to the sale of all Placement Shares covered by a Placement Notice, the date of such suspension or termination); and will not directly or indirectly in any other "at the market" or continuous equity transaction offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any Common Stock (other than the Placement Shares offered pursuant to this Agreement) or securities convertible into or exchangeable for Common Stock, warrants or any rights to purchase or acquire, Common Stock prior to the termination of this Agreement; *provided, however*, that such restrictions will not apply in connection with the Company's issuance or sale of (i) Common Stock, options to purchase Common Stock or Common Stock issuable upon the exercise of options, pursuant to any stock option, or benefits plan, stock ownership plan or dividend reinvestment plan (but not Common Stock subject to a waiver to exceed plan limits in its dividend reinvestment plan) of the Company whether now in effect or hereafter implemented, (ii) Common Stock issuable upon conversion of securities or the exercise of warrants, options or other rights in effect or outstanding, and disclosed in filings by the Company available on EDGAR or otherwise in writing to the Agent, (iii) Common Stock, or securities convertible into or exercisable for Common Stock, offered and sold in a privately negotiated transaction to vendors, customers, strategic partners or potential strategic partners or other investors conducted in a manner so as not to be integrated with the offering of Common Stock hereby and (iv) Common Stock in connection with any acquisition, strategic investment or other similar transaction (including any joint venture, strategic alliance or partnership).

i. Change of Circumstances. The Company will, at any time during the pendency of a Placement Notice advise the Agent promptly after it shall have received notice or obtained knowledge thereof, of any information or fact that would alter or affect in any material respect any opinion, certificate, letter or other document required to be provided to the Agent pursuant to this Agreement.

j. Due Diligence Cooperation. During the term of this Agreement, the Company will cooperate with any reasonable due diligence review conducted by the Agent or its representatives in connection with the transactions contemplated hereby, including, without limitation, providing information and making available documents and senior corporate officers, during regular business hours and at the Company's principal offices, as the Agent may reasonably request.

k. Required Filings Relating to Placement of Placement Shares. The Company agrees that on such dates as the Securities Act shall require, the Company will (i) file a prospectus supplement with the Commission under the applicable paragraph of Rule 424(b) under the Securities Act (each and every date a filing under Rule 424(b) is made, a "Filing Date"), which prospectus supplement will set forth, within the relevant period, the amount of Placement Shares sold through the Agent, the Net Proceeds to the Company and the compensation payable by the Company to the Agent with respect to such Placement Shares, and (ii) deliver such number of copies of each such prospectus supplement to each exchange or market on which such sales were effected as may be required by the rules or regulations of such exchange or market.

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l. Representation Dates: Certificate. Each time during the term of this Agreement that the Company:

(i) amends or supplements (other than a prospectus supplement relating solely to an offering of securities other than the Placement Shares) the Registration Statement or the Prospectus relating to the Placement Shares by means of a post-effective amendment, sticker, or supplement but not by means of incorporation of documents by reference into the Registration Statement or the Prospectus relating to the Placement Shares;

(ii) files an annual report on Form 10-K under the Exchange Act (including any Form 10-K/A containing amended audited financial information or a material amendment to the previously filed Form 10-K);

(iii) files its quarterly reports on Form 10-Q under the Exchange Act; or

(iv) files a current report on Form 8-K containing amended financial information (other than information "furnished" pursuant to Items 2.02 or 7.01 of Form 8-K or to provide disclosure pursuant to Item 8.01 of Form 8-K relating to the reclassification of certain properties as discontinued operations in accordance with Statement of Financial Accounting Standards No. 144) under the Exchange Act; (Each date of filing of one or more of the documents referred to in clauses (i) through (iv) shall be a "Representation Date.") the Company shall furnish the Agent (but in the case of clause (iv) above only if the Agent reasonably determines that the information contained in such Form 8-K is material) with a certificate, in the form attached hereto as Exhibit 7(1). The requirement to provide a certificate under this Section 7(1) shall be waived for any Representation Date occurring at a time at which no Placement Notice is pending, which waiver shall continue until the earlier to occur of the date the Company delivers a Placement Notice hereunder (which for such calendar quarter shall be considered a Representation Date) and the next occurring Representation Date on which the Company files its annual report on Form 10-K. Notwithstanding the foregoing, (i) upon the delivery of the first Placement Notice hereunder and (ii) if the Company subsequently decides to sell Placement Shares following a Representation Date when the Company relied on such waiver and did not provide the Agent with a certificate under this Section 7(1), then before the Agent sells any Placement Shares, the Company shall provide the Agent with a certificate, in the form attached hereto as Exhibit 7(1), dated the date of the Placement Notice.

m. Legal Opinion. On or prior to the date of the first Placement Notice given hereunder the Company shall cause to be furnished to the Agent a written opinion and a negative assurance letter of McDermott Will & Emery LLP ("Company Counsel"), or other counsel reasonably satisfactory to the Agent, each in form and substance reasonably satisfactory to the Agent. Thereafter, within five (5) Trading Days of each Representation Date with respect to which the Company is obligated to deliver a certificate in the form attached hereto as Exhibit 7(1) for which no waiver is applicable, the Company shall cause to be furnished to the Agent a negative assurance letter of Company Counsel in form and substance reasonably satisfactory to the Agent; provided that, in lieu of such negative assurance for subsequent periodic filings under the Exchange Act, counsel may furnish the Agent with a letter (a "Reliance Letter") to the effect that the Agent may rely on the negative assurance letter previously delivered under this Section 7(m) to the same extent as if it were dated the date of such letter (except that statements in such prior letter shall be deemed to relate to the Registration Statement

n. Comfort Letter. On or prior to the date of the first Placement Notice given hereunder and within five (5) Trading Days of each Representation Date other than pursuant to Section 7(l)(iii) with respect to which the Company is obligated to deliver a certificate in the form attached hereto as Exhibit 7(l) for which no waiver is applicable, the Company shall cause its independent accountants to furnish the Agent letters (the “Comfort Letters”), dated the date the Comfort Letter is delivered, which shall meet the requirements set forth in this Section 7(n). The Comfort Letter from the Company’s independent accountants shall be in a form and substance reasonably satisfactory to the Agent, (i) confirming that they are an independent public accounting firm within the meaning of the Securities Act and the Public Company Accounting Oversight Board (the “PCAOB”), (ii) stating, as of such date, the conclusions and findings of such firm with respect to the financial information and other matters ordinarily covered by accountants’ “comfort letters” to underwriters in connection with registered public offerings (the first such letter, the “Initial Comfort Letter”) and (iii) updating the Initial Comfort Letter with any information that would have been included in the Initial Comfort Letter had it been given on such date and modified as necessary to relate to the Registration Statement and the Prospectus, as amended and supplemented to the date of such letter.

o. Market Activities. The Company will not, directly or indirectly, (i) take any action designed to cause or result in, or that constitutes or would reasonably be expected to constitute, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of Common Stock or (ii) sell, bid for, or purchase Common Stock in violation of Regulation M, or pay anyone any compensation for soliciting purchases of the Placement Shares other than the Agent.

p. Investment Company Act. The Company will conduct its affairs in such a manner so as to reasonably ensure that neither it nor the Subsidiaries will be or become, at any time prior to the termination of this Agreement, an “investment company,” as such term is defined in the Investment Company Act.

q. No Offer to Sell. Other than an Issuer Free Writing Prospectus approved in advance by the Company and the Agent in its capacity as agent hereunder pursuant to Section 23, neither of the Agent nor the Company (including its agents and representatives, other than the Agent in its capacity as such) will make, use, prepare, authorize, approve or refer to any written communication (as defined in Rule 405), required to be filed with the Commission, that constitutes an offer to sell or solicitation of an offer to buy Placement Shares hereunder.

r. Sarbanes-Oxley Act. The Company will maintain and keep accurate books and records reflecting its assets and maintain internal accounting controls in a manner designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP and including those policies and procedures that (i) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the Company, (ii) provide reasonable assurance that transactions are recorded as necessary to permit the preparation of the Company’s consolidated financial statements in accordance with GAAP, (iii) that receipts and expenditures of the Company are being made only in accordance with management’s and the Company’s directors’ authorization, and (iv) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company’s assets that could have a material effect on its financial statements. The Company will maintain disclosure controls and procedures that comply with the requirements of the Exchange Act.

8. Representations and Covenants of the Agent. The Agent represents and warrants that it is duly registered as a broker-dealer under FINRA, the Exchange Act and the applicable statutes and regulations of each state in which the Placement Shares will be offered and sold, except such states in which the Agent is exempt from registration or such registration is not otherwise required. The Agent shall continue, for the term of this Agreement, to be duly registered as a broker-dealer under FINRA, the Exchange Act and the applicable statutes and regulations of each state in which the Placement Shares will be offered and sold, except such states in which it is exempt from registration or such registration is not otherwise required, during the term of this Agreement. The Agent shall comply with all applicable law and regulations in connection with the transactions contemplated by this Agreement, including the issuance and sale through the Agent of the Placement Shares.

9. Payment of Expenses. The Company will pay all expenses incident to the performance of its obligations under this Agreement, including (i) the preparation, filing, including any fees required by the Commission, and printing of the Registration Statement (including financial statements and exhibits) as originally filed and of each amendment and supplement thereto and each Free Writing Prospectus, in such number as the Agent shall deem reasonably necessary, (ii) the printing and delivery to the Agent of this Agreement and such other documents as may be required in connection with the offering, purchase, sale, issuance or delivery of the Placement Shares, (iii) the preparation, issuance and delivery of the certificates, if any, for the Placement Shares to the Agent, including any stock or other transfer taxes and any capital duties, stamp duties or other duties or taxes payable upon the sale, issuance or delivery of the Placement Shares to the Agent, (iv) the fees and disbursements of the counsel, accountants and other advisors to the Company, (v) the reasonable and documented out-of-pocket fees and disbursements of counsel to the Agent (x) not to exceed \$75,000 in connection with the execution of this Agreement and (y) an additional \$5,000 per fiscal quarter as reimbursement for the reasonable fees and disbursements of the Agent’s legal counsel incurred by the Agent in connection with the Agent’s ongoing due diligence and review of deliverables in connection with updates at the time of Representation Dates, (vi) the fees and expenses of the transfer agent and registrar for the Common Stock, (vii) the filing fees incident to any review by FINRA of the terms of the sale of the Placement Shares, and (viii) the fees and expenses incurred in connection with the listing of the Placement Shares on the Exchange.

10. Conditions to the Agent’s Obligations. The obligations of the Agent hereunder with respect to a Placement will be subject to the continuing accuracy and completeness of the representations and warranties made by the Company herein (other than those representations and warranties made as of a specified date or time), to the due performance in all material respects by the Company of its obligations hereunder, to the completion by the Agent of a due diligence review satisfactory to it in its reasonable judgment, and to the continuing reasonable satisfaction (or waiver by the Agent in its sole discretion) of the following additional conditions:

a. Registration Statement Effective. The Registration Statement shall remain effective and shall be available for the sale of all Placement Shares contemplated to be issued by any Placement Notice.

b. No Material Notices. None of the following events shall have occurred and be continuing: (i) receipt by the Company of any request for additional information from the Commission or any other federal or state governmental authority during the period of effectiveness of the Registration Statement, the response to which would require any post-effective amendments or supplements to the Registration Statement or the Prospectus; (ii) the issuance by the Commission or any other federal or state governmental authority of any stop order suspending the effectiveness of the Registration Statement or receipt by the Company of notification of the initiation of any proceedings for that purpose; (iii) receipt by the Company of any notification with respect to the suspension of the qualification or exemption from qualification of any of the Placement Shares for sale in any jurisdiction or receipt by the Company of notification of the initiation of, or a threat to initiate, any proceeding for such purpose; or (iv) the occurrence of any event that makes any material statement made in the Registration Statement or the Prospectus or any material Incorporated Document untrue in any material

respect or that requires the making of any changes in the Registration Statement, the Prospectus or any material Incorporated Document so that, in the case of the Registration Statement, it will not contain any materially untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein not misleading and, that in the case of the Prospectus or any material Incorporated Document, it will not contain any materially untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

c. No Misstatement or Material Omission. The Agent shall not have advised the Company that the Registration Statement or Prospectus, or any amendment or supplement thereto, contains an untrue statement of fact that in the Agent's reasonable opinion is material, or omits to state a fact that in the Agent's reasonable opinion is material and is required to be stated therein or is necessary to make the statements therein not misleading.

d. Material Changes. Except as contemplated in the Prospectus, or disclosed in the Company's reports filed with the Commission, there shall not have been any Material Adverse Effect, or any development that would reasonably be expected to cause a Material Adverse Effect, or a downgrading in or withdrawal of the rating assigned to any of the Company's securities (other than asset backed securities) by any "nationally recognized statistical rating organization," as such term is defined by the Commission for purposes of Rule 436(g)(2) under the Securities Act (a "Rating Organization"), or a public announcement by any Rating Organization that it has under surveillance or review its rating of any of the Company's securities (other than asset backed securities), the effect of which, in the case of any such action by a Rating Organization described above, in the reasonable judgment of the Agent (without relieving the Company of any obligation or liability it may otherwise have), is so material as to make it impracticable or inadvisable to proceed with the offering of the Placement Shares on the terms and in the manner contemplated in the Prospectus.

e. Company Counsel Legal Opinion. The Agent shall have received the opinion and negative assurance letter of Company Counsel required to be delivered pursuant to Section 7(m) on or before the date on which such delivery of such opinion and negative assurance letter are required pursuant to Section 7(m).

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f. Agent Counsel Legal Opinion. Agent shall have received from Morrison & Foerster LLP, counsel for the Agent, such opinion or opinions and negative assurance letter, on or before the date on which the delivery of the Company Counsel legal opinion and negative assurance letter are required pursuant to Section 7(m), with respect to such matters as the Agent may reasonably require, and the Company shall have furnished to such counsel such documents as they request for enabling them to pass upon such matters.

g. Comfort Letter. The Agent shall have received the Comfort Letter required to be delivered pursuant Section 7(n) on or before the date on which such delivery of such letter is required pursuant to Section 7(n).

h. Representation Certificate. The Agent shall have received the certificate required to be delivered pursuant to Section 7(1) on or before the date on which delivery of such certificate is required pursuant to Section 7(1).

i. Secretary's Certificate. On or prior to the first Representation Date, the Agent shall have received a certificate, signed on behalf of the Company by its corporate Secretary, in form and substance satisfactory to the Agent and its counsel.

j. No Suspension. Trading in the Common Stock shall not have been suspended on the Exchange and the Common Stock shall not have been delisted from the Exchange.

k. Other Materials. On each date on which the Company is required to deliver a certificate pursuant to Section 7(1), the Company shall have furnished to the Agent such appropriate further information, certificates and documents as the Agent may reasonably request and which are usually and customarily furnished by an issuer of securities in connection with a securities offering of the type contemplated hereby. All such opinions, certificates, letters and other documents will be in compliance with the provisions hereof.

l. Securities Act Filings Made. All filings with the Commission required by Rule 424 under the Securities Act to have been filed prior to the issuance of any Placement Notice hereunder shall have been made within the applicable time period prescribed for such filing by Rule 424.

m. Approval for Listing. The Placement Shares shall either have been approved for listing on the Exchange, subject only to notice of issuance, or the Company shall have filed an application for listing of the Placement Shares on the Exchange at, or prior to, the issuance of any Placement Notice.

n. No Termination Event. There shall not have occurred any event that would permit the Agent to terminate this Agreement pursuant to Section 13(a).

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## 11. Indemnification and Contribution

(a) Company Indemnification. The Company agrees to indemnify and hold harmless the Agent, its partners, members, directors, officers, employees and agents and each person, if any, who controls the Agent within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act as follows:

(i) against any and all loss, liability, claim, damage and expense whatsoever, as incurred, joint or several, arising out of or based upon any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement (or any amendment thereto), or the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein not misleading, or arising out of any untrue statement or alleged untrue statement of a material fact included in any related Issuer Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto), or the omission or alleged omission therefrom of a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading;

(ii) against any and all loss, liability, claim, damage and expense whatsoever, as incurred, joint or several, to the extent of the aggregate amount paid in settlement of any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or of any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission; provided that (subject to Section 11(d) below) any such settlement is effected with the written consent of the Company, which consent shall not unreasonably be delayed or withheld; and

(iii) against any and all expense whatsoever, as incurred (including the reasonable and documented out-of-pocket fees and disbursements of counsel), reasonably incurred in investigating, preparing or defending against any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission, to the extent that any such expense is not paid under (i) or (ii) above,

*provided, however*, that this indemnity agreement shall not apply to any loss, liability, claim, damage or expense to the extent arising out of any untrue statement or omission or

alleged untrue statement or omission made solely in reliance upon and in conformity with the Agent Information.

(b) Indemnification by the Agent. The Agent agrees to indemnify and hold harmless the Company and its directors and officers, and each person, if any, who (i) controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act or (ii) is controlled by or is under common control with the Company against any and all loss, liability, claim, damage and expense described in the indemnity contained in Section 11(a), as incurred, but only with respect to untrue statements or omissions, or alleged untrue statements or omissions, made in the Registration Statement (or any amendments thereto) or in any related Issuer Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto) in reliance upon and in conformity with the Agent Information.

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(c) Procedure. Any party that proposes to assert the right to be indemnified under this Section 11 will, promptly after receipt of notice of commencement of any action against such party in respect of which a claim is to be made against an indemnifying party or parties under this Section 11, notify each such indemnifying party of the commencement of such action, enclosing a copy of all papers served, but the omission so to notify such indemnifying party will not relieve the indemnifying party from (i) any liability that it might have to any indemnified party otherwise than under this Section 11 and (ii) any liability that it may have to any indemnified party under the foregoing provisions of this Section 11 unless, and only to the extent that, such omission results in the forfeiture of substantive rights or defenses by the indemnifying party. If any such action is brought against any indemnified party and it notifies the indemnifying party of its commencement, the indemnifying party will be entitled to participate in and, to the extent that it elects by delivering written notice to the indemnified party promptly after receiving notice of the commencement of the action from the indemnified party, jointly with any other indemnifying party similarly notified, to assume the defense of the action, with counsel reasonably satisfactory to the indemnified party, and after notice from the indemnifying party to the indemnified party of its election to assume the defense, the indemnifying party will not be liable to the indemnified party for any legal or other expenses except as provided below and except for the reasonable costs of investigation subsequently incurred by the indemnified party in connection with the defense. The indemnified party will have the right to employ its own counsel in any such action, but the fees, expenses and other charges of such counsel will be at the expense of such indemnified party unless (1) the employment of counsel by the indemnified party has been authorized in writing by the indemnifying party, (2) the indemnified party has reasonably concluded (based on advice of counsel) that there may be legal defenses available to it or other indemnified parties that are different from or in addition to those available to the indemnifying party, (3) a conflict or potential conflict of interest exists (based on advice of counsel to the indemnified party) between the indemnified party and the indemnifying party (in which case the indemnifying party will not have the right to direct the defense of such action on behalf of the indemnified party) or (4) the indemnifying party has not in fact employed counsel to assume the defense of such action within a reasonable time after receiving notice of the commencement of the action, in each of which cases the reasonable and documented out-of-pocket fees, disbursements and other charges of counsel will be at the expense of the indemnifying party or parties. It is understood that the indemnifying party or parties shall not, in connection with any proceeding or related proceedings in the same jurisdiction, be liable for the reasonable and documented out-of-pocket fees, disbursements and other charges of more than one separate firm admitted to practice in such jurisdiction at any one time for all such indemnified party or parties. All such reasonable and documented out-of-pocket fees, disbursements and other charges will be reimbursed by the indemnifying party promptly after the indemnifying party receives a written invoice relating to fees, disbursements and other charges in reasonable detail. An indemnifying party will not, in any event, be liable for any settlement of any action or claim effected without its written consent. No indemnifying party shall, without the prior written consent of each indemnified party, settle or compromise or consent to the entry of any judgment in any pending or threatened claim, action or proceeding relating to the matters contemplated by this Section 11 (whether or not any indemnified party is a party thereto), unless such settlement, compromise or consent (1) includes an unconditional release of each indemnified party from all liability arising out of such litigation, investigation, proceeding or claim and (2) does not include a statement as to or an admission of fault, culpability or a failure to act by or on behalf of any indemnified party.

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(d) Contribution. In order to provide for just and equitable contribution in circumstances in which the indemnification provided for in the foregoing paragraphs of this Section 11 is applicable in accordance with its terms but for any reason is held to be unavailable from the Company or the Agent, the Company and the Agent will contribute to the total losses, claims, liabilities, expenses and damages (including any investigative, legal and other expenses reasonably incurred in connection with, and any amount paid in settlement of, any action, suit or proceeding or any claim asserted, but after deducting any contribution received by the Company from persons other than the Agent, such as persons who control the Company within the meaning of the Securities Act or the Exchange Act, officers of the Company who signed the Registration Statement and directors of the Company, who also may be liable for contribution) to which the Company and the Agent may be subject in such proportion as shall be appropriate to reflect the relative benefits received by the Company on the one hand and the Agent on the other hand. The relative benefits received by the Company on the one hand and the Agent on the other hand shall be deemed to be in the same proportion as the total Net Proceeds from the sale of the Placement Shares (before deducting expenses) received by the Company bear to the total compensation received by the Agent (before deducting expenses) from the sale of Placement Shares on behalf of the Company. If, but only if, the allocation provided by the foregoing sentence is not permitted by applicable law, the allocation of contribution shall be made in such proportion as is appropriate to reflect not only the relative benefits referred to in the foregoing sentence but also the relative fault of the Company, on the one hand, and the Agent, on the other hand, with respect to the statements or omission that resulted in such loss, claim, liability, expense or damage, or action in respect thereof, as well as any other relevant equitable considerations with respect to such offering. Such relative fault shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact relates to information supplied by the Company or the Agent, the intent of the parties and their relative knowledge, access to information and opportunity to correct or prevent such statement or omission. The Company and the Agent agree that it would not be just and equitable if contributions pursuant to this Section 11(d) were to be determined by pro rata allocation or by any other method of allocation that does not take into account the equitable considerations referred to herein. The amount paid or payable by an indemnified party as a result of the loss, claim, liability, expense, or damage, or action in respect thereof, referred to above in this Section 11(d) shall be deemed to include, for the purpose of this Section 11(d), any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending any such action or claim to the extent consistent with Section 11(c) hereof. Notwithstanding the foregoing provisions of this Section 11(d), the Agent shall not be required to contribute any amount in excess of the commissions received by it under this Agreement and no person found guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) will be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. For purposes of this Section 11(d), any person who controls a party to this Agreement within the meaning of the Securities Act or the Exchange Act, and any officers, directors, partners, employees or agents of the Agent, will have the same rights to contribution as that party, and each officer who signed the Registration Statement and director of the Company will have the same rights to contribution as the Company, subject in each case to the provisions hereof. Any party entitled to contribution, promptly after receipt of notice of commencement of any action against such party in respect of which a claim for contribution may be made under this Section 11(d), will notify any such party or parties from whom contribution may be sought, but the omission to so notify will not relieve that party or parties from whom contribution may be sought from any other obligation it or they may have under this Section 11(d) except to the extent that the failure to so notify such other party materially prejudiced the substantive rights or defenses of the party from whom contribution is sought. Except for a settlement entered into pursuant to the last sentence of Section 11(c) hereof, no party will be liable for contribution with respect to any action or claim settled without its written consent if such consent is required pursuant to Section 11(c) hereof.

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12. Representations and Agreements to Survive Delivery. The indemnity and contribution agreements contained in Section 11 of this Agreement and all representations and warranties of the Company herein or in certificates delivered pursuant hereto shall survive, as of their respective dates, regardless of (i) any investigation made by or on



behalf of the Agent, any controlling persons, or the Company (or any of their respective officers, directors or controlling persons), (ii) delivery and acceptance of the Placement Shares and payment therefor or (iii) any termination of this Agreement.

### 13. Termination.

a. The Agent may terminate this Agreement, by notice to the Company, as hereinafter specified at any time in its sole discretion (1) if there has been, since the time of execution of this Agreement or since the date as of which information is given in the Prospectus, any Material Adverse Effect, or any development that would have a Material Adverse Effect that, in the sole judgment of the Agent, is material and adverse and makes it impractical or inadvisable to market the Placement Shares or to enforce contracts for the sale of the Placement Shares, (2) if there has occurred any material adverse change in the financial markets in the United States or the international financial markets, any outbreak of hostilities or escalation thereof or other calamity or crisis or any change or development involving a prospective change in national or international political, financial or economic conditions, in each case the effect of which is such as to make it, in the judgment of the Agent, impracticable or inadvisable to market the Placement Shares or to enforce contracts for the sale of the Placement Shares, (3) if trading in the Common Stock has been suspended or limited by the Commission or the Exchange, or if trading generally on the Exchange has been suspended or limited, or minimum prices for trading have been fixed on the Exchange, (4) if any suspension of trading of any securities of the Company on any exchange or in the over-the-counter market shall have occurred and be continuing, (5) if a major disruption of securities settlements or clearance services in the United States shall have occurred and be continuing, or (6) if a banking moratorium has been declared by either U.S. Federal or New York authorities. Any such termination shall be without liability of any party to any other party except that the provisions of Section 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination. If the Agent elects to terminate this Agreement as provided in this Section 13(a), the Agent shall provide the required notice as specified in Section 14 (Notices).

b. The Company shall have the right, by giving five (5) days' notice as hereinafter specified to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination.

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c. The Agent shall have the right, by giving five (5) days' notice as hereinafter specified to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination.

d. Unless earlier terminated pursuant to this Section 13, this Agreement shall automatically terminate upon the issuance and sale of all of the Placement Shares through the Agent on the terms and subject to the conditions set forth herein except that the provisions of Section 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination.

e. This Agreement shall remain in full force and effect unless terminated pursuant to Sections 13(a), (b), (c), or (d) above or otherwise by mutual agreement of the parties; *provided, however*, that any such termination by mutual agreement shall in all cases be deemed to provide that Section 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) shall remain in full force and effect. Upon termination of this Agreement, the Company shall not have any liability to the Agent for any discount, commission or other compensation with respect to any Placement Shares not otherwise sold by the Agent under this Agreement.

f. Any termination of this Agreement shall be effective on the date specified in such notice of termination; *provided, however*, that such termination shall not be effective until the close of business on the date of receipt of such notice by the Agent or the Company, as the case may be. If such termination shall occur prior to the Settlement Date for any sale of Placement Shares, such Placement Shares shall settle in accordance with the provisions of this Agreement.

14. Notices. All notices or other communications required or permitted to be given by any party to any other party pursuant to the terms of this Agreement shall be in writing, unless otherwise specified, and if sent to the Agent, shall be delivered to:

B. Riley Securities, Inc.  
299 Park Avenue, 7<sup>th</sup> Floor  
New York, NY 10171  
Attention: General Counsel  
Telephone: (212) 457-9947  
Email: atmdesk@brileyfin.com

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with a copy to:

Morrison & Foerster LLP  
2100 L Street, NW, Suite 900  
Washington, DC 20037  
Attention: Andrew P. Campbell  
Telephone: (202) 887-1584  
Email: andycampbell@mof.com

and if to the Company, shall be delivered to:

Enzo Biochem Inc.  
81 Executive Boulevard, Suite 3  
Farmingdale, New York 11735  
Attention: Hamid Erfanian  
Telephone: 631.938.1458  
Email: HERfanian@enzo.com

with a copy to:

Enzo Biochem Inc.  
81 Executive Boulevard, Suite 3  
Farmingdale, New York 11735  
Attention: Matthew I. Kupferberg  
Telephone: (631) 760-7579  
Email: mkupferberg@enzo.com

and

McDermott Will & Emery LLP  
Attention: Robert H. Cohen, Esq.  
Telephone: +1 212 547 5885  
Email: rcohen@mwe.com

Each party to this Agreement may change such address for notices by sending to the parties to this Agreement written notice of a new address for such purpose. Each such notice or other communication shall be deemed given (i) when delivered personally, by email, or by verifiable facsimile transmission on or before 4:30 p.m., New York City time, on a Business Day or, if such day is not a Business Day, on the next succeeding Business Day, (ii) on the next Business Day after timely delivery to a nationally-recognized overnight courier and (iii) on the Business Day actually received if deposited in the U.S. mail (certified or registered mail, return receipt requested, postage prepaid). For purposes of this Agreement, "Business Day" shall mean any day on which the Exchange and commercial banks in the City of New York are open for business.

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15. Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the Company and the Agent and their respective successors and the affiliates, controlling persons, officers and directors referred to in Section 11 hereof. References to any of the parties contained in this Agreement shall be deemed to include the successors and permitted assigns of such party. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and permitted assigns any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement. Neither the Company nor the Agent may assign its rights or obligations under this Agreement without the prior written consent of the other party.

16. Adjustments for Stock Splits. The parties acknowledge and agree that all share-related numbers contained in this Agreement shall be adjusted to take into account any share consolidation, stock split, stock dividend, corporate domestication or similar event effected with respect to the Placement Shares.

17. Entire Agreement; Amendment; Severability. This Agreement (including all schedules and exhibits attached hereto and Placement Notices issued pursuant hereto) constitutes the entire agreement and supersedes all other prior and contemporaneous agreements and undertakings, both written and oral, among the parties hereto with regard to the subject matter hereof. Neither this Agreement nor any term hereof may be amended except pursuant to a written instrument executed by the Company and the Agent. In the event that any one or more of the provisions contained herein, or the application thereof in any circumstance, is held invalid, illegal or unenforceable as written by a court of competent jurisdiction, then such provision shall be given full force and effect to the fullest possible extent that it is valid, legal and enforceable, and the remainder of the terms and provisions herein shall be construed as if such invalid, illegal or unenforceable term or provision was not contained herein, but only to the extent that giving effect to such provision and the remainder of the terms and provisions hereof shall be in accordance with the intent of the parties as reflected in this Agreement.

18. GOVERNING LAW AND TIME; WAIVER OF JURY TRIAL. THIS AGREEMENT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK WITHOUT REGARD TO THE PRINCIPLES OF CONFLICTS OF LAWS. SPECIFIED TIMES OF DAY REFER TO NEW YORK CITY TIME. THE COMPANY AND THE AGENT EACH HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY.

19. CONSENT TO JURISDICTION. EACH PARTY HEREBY IRREVOCABLY SUBMITS TO THE NON-EXCLUSIVE JURISDICTION OF THE STATE AND FEDERAL COURTS SITTING IN THE CITY OF NEW YORK, BOROUGH OF MANHATTAN, FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION WITH ANY TRANSACTION CONTEMPLATED HEREBY, AND HEREBY IRREVOCABLY WAIVES, AND AGREES NOT TO ASSERT IN ANY SUIT, ACTION OR PROCEEDING, ANY CLAIM THAT IT IS NOT PERSONALLY SUBJECT TO THE JURISDICTION OF ANY SUCH COURT, THAT SUCH SUIT, ACTION OR PROCEEDING IS BROUGHT IN AN INCONVENIENT FORUM OR THAT THE VENUE OF SUCH SUIT, ACTION OR PROCEEDING IS IMPROPER. EACH PARTY HEREBY IRREVOCABLY WAIVES PERSONAL SERVICE OF PROCESS AND CONSENTS TO PROCESS BEING SERVED IN ANY SUCH SUIT, ACTION OR PROCEEDING BY MAILING A COPY THEREOF (CERTIFIED OR REGISTERED MAIL, RETURN RECEIPT REQUESTED) TO SUCH PARTY AT THE ADDRESS IN EFFECT FOR NOTICES TO IT UNDER THIS AGREEMENT AND AGREES THAT SUCH SERVICE SHALL CONSTITUTE GOOD AND SUFFICIENT SERVICE OF PROCESS AND NOTICE THEREOF. NOTHING CONTAINED HEREIN SHALL BE DEEMED TO LIMIT IN ANY WAY ANY RIGHT TO SERVE PROCESS IN ANY MANNER PERMITTED BY LAW.

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20. Use of Information. The Agent may not use any information gained in connection with this Agreement and the transactions contemplated by this Agreement, including due diligence, to advise any party with respect to transactions not expressly approved by the Company.

21. Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Delivery of an executed Agreement by one party to the other may be made by facsimile transmission or email of a .pdf attachment.

22. Effect of Headings. The section, Schedule and Exhibit headings herein are for convenience only and shall not affect the construction hereof.

23. Permitted Free Writing Prospectuses. The Company represents, warrants and agrees that, unless it obtains the prior consent of the Agent, and the Agent represents, warrants and agrees that, unless it obtains the prior consent of the Company, it has not made and will not make any offer relating to the Placement Shares that would constitute an Issuer Free Writing Prospectus, or that would otherwise constitute a "free writing prospectus," as defined in Rule 405, required to be filed with the Commission. Any such free writing prospectus consented to by the Agent or by the Company, as the case may be, is hereinafter referred to as a "Permitted Free Writing Prospectus." The Company represents and warrants that it has treated and agrees that it will treat each Permitted Free Writing Prospectus as an "issuer free writing prospectus," as defined in Rule 433, and has complied and will comply with the requirements of Rule 433 applicable to any Permitted Free Writing Prospectus, including timely filing with the Commission where required, legending and record keeping. For the purposes of clarity, the parties hereto agree that all free writing prospectuses, if any, listed in Exhibit 23 hereto are Permitted Free Writing Prospectuses.

24. Absence of Fiduciary Relationship. The Company acknowledges and agrees that:

a. The Agent is acting solely as agent in connection with the public offering of the Placement Shares and in connection with each transaction contemplated by this Agreement and the process leading to such transactions, and no fiduciary or advisory relationship between the Company or any of its respective affiliates, stockholders (or other equity holders), creditors or employees or any other party, on the one hand, and the Agent, on the other hand, has been or will be created in respect of any of the transactions contemplated by this Agreement, irrespective of whether or not the Agent has advised or is advising the Company on other matters, and the Agent has no obligation to the Company with respect to the transactions contemplated by this Agreement except the obligations expressly set forth in this Agreement;

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b. it is capable of evaluating and understanding, and understands and accepts, the terms, risks and conditions of the transactions contemplated by this Agreement;

c. the Agent has not provided any legal, accounting, regulatory or tax advice with respect to the transactions contemplated by this Agreement and it has consulted its own legal, accounting, regulatory and tax advisors to the extent it has deemed appropriate;

d. it is aware that the Agent and its affiliates are engaged in a broad range of transactions which may involve interests that differ from those of the Company and the Agent has no obligation to disclose such interests and transactions to the Company by virtue of any fiduciary, advisory or agency relationship or otherwise; and

e. it waives, to the fullest extent permitted by law, any claims it may have against the Agent for breach of fiduciary duty or alleged breach of fiduciary duty in connection with the sale of Placement Shares under this Agreement and agrees that the Agent shall not have any liability (whether direct or indirect, in contract, tort or otherwise) to it in respect of such a fiduciary duty claim or to any person asserting a fiduciary duty claim on its behalf or in right of it or the Company, employees or creditors of the Company, other than in respect of the Agent's obligations under this Agreement and to keep information provided by the Company to the Agent and its counsel confidential to the extent not otherwise publicly-available.

25. Definitions. As used in this Agreement, the following terms have the respective meanings set forth below:

"Applicable Time" means (i) each Representation Date and (ii) the time of each sale of any Placement Shares pursuant to this Agreement.

"Issuer Free Writing Prospectus" means any "issuer free writing prospectus," as defined in Rule 433, relating to the Placement Shares that (1) is required to be filed with the Commission by the Company, (2) is a "road show" that is a "written communication" within the meaning of Rule 433(d)(8)(i) whether or not required to be filed with the Commission, or (3) is exempt from filing pursuant to Rule 433(d)(5)(i) because it contains a description of the Placement Shares or of the offering that does not reflect the final terms, in each case in the form filed or required to be filed with the Commission or, if not required to be filed, in the form retained in the Company's records pursuant to Rule 433(g) under the Securities Act.

"Rule 172," "Rule 405," "Rule 415," "Rule 424," "Rule 424(b)," "Rule 430B," and "Rule 433" refer to such rules under the Securities Act.

All references in this Agreement to financial statements and schedules and other information that is "contained," "included" or "stated" in the Registration Statement or the Prospectus (and all other references of like import) shall be deemed to mean and include all such financial statements and schedules and other information that is incorporated by reference in the Registration Statement or the Prospectus, as the case may be.

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All references in this Agreement to the Registration Statement, the Prospectus or any amendment or supplement to any of the foregoing shall be deemed to include the copy filed with the Commission pursuant to EDGAR; all references in this Agreement to any Issuer Free Writing Prospectus (other than any Issuer Free Writing Prospectuses that, pursuant to Rule 433, are not required to be filed with the Commission) shall be deemed to include the copy thereof filed with the Commission pursuant to EDGAR; and all references in this Agreement to "supplements" to the Prospectus shall include, without limitation, any supplements, "wrappers" or similar materials prepared in connection with any offering, sale or private placement of any Placement Shares by the Agent outside of the United States.

## 26. Recognition of the U.S. Special Resolutions Regimes

(a) In the event that the Agent is a Covered Entity (as defined below) and becomes subject to a proceeding under a U.S. Special Resolution Regime (as defined below), the transfer from the Agent of this Agreement, and any interest and obligation in or under this Agreement, will be effective to the same extent as the transfer would be effective under the U.S. Special Resolution Regime if this Agreement, and any such interest and obligation, were governed by the laws of the United States or a state of the United States.

(b) In the event that the Agent is a Covered Entity or a BHC Act Affiliate (as defined below) of the Agent becomes subject to a proceeding under a U.S. Special Resolution Regime, Default Rights (as defined below) under this Agreement that may be exercised against the Agent are permitted to be exercised to no greater extent than such Default Rights could be exercised under the U.S. Special Resolution Regime if this Agreement were governed by the laws of the United States or a state of the United States.

(c) For purposes of this Section a "BHC Act Affiliate" has the meaning assigned to the term "affiliate" in, and shall be interpreted in accordance with, 12 U.S.C. § 1841(k). "Covered Entity" means any of the following: (i) a "covered entity" as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 252.82(b); (ii) a "covered bank" as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 47.3(b); or (iii) a "covered FSI" as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 382.2(b). "Default Right" has the meaning assigned to that term in, and shall be interpreted in accordance with, 12 C.F.R. §§ 252.81, 47.2 or 382.1, as applicable. "U.S. Special Resolution Regime" means each of (i) the Federal Deposit Insurance Act and the regulations promulgated thereunder, and (ii) Title II of the Dodd-Frank Wall Street Reform and Consumer Protection Act and the regulations promulgated thereunder.

[Remainder of the page intentionally left blank]

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If the foregoing correctly sets forth the understanding between the Company and the Agent, please so indicate in the space provided below for that purpose, whereupon this letter shall constitute a binding agreement between the Company and the Agent.

Very truly yours,

**ENZO BIOCHEM, INC.**

By: /s/ Hamid Erfanian  
Name: Hamid Erfanian  
Title: Chief Executive Officer

**ACCEPTED as of the date first-above written:**

**B. RILEY SECURITIES, INC.**

By: /s/ Patrice McNicoll  
Name: Patrice McNicoll  
Title: Co-Head of Investment Banking

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**SCHEDULE 1**

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**FORM OF PLACEMENT NOTICE**

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From: Enzo Biochem, Inc.  
To: B. Riley Securities, Inc.  
Attention: [●]  
Subject: At Market Issuance--Placement Notice

Ladies and Gentlemen:

Pursuant to the terms and subject to the conditions contained in the At Market Issuance Sales Agreement between Enzo Biochem, Inc., a New York corporation (the “Company”), and B. Riley Securities, Inc. (the “Agent”), dated May 12, 2023, the Company hereby requests that the Agent sell up to [ ] of the Company’s Common Stock, par value \$0.01 per share, at a minimum market price of \$ per share, during the time period beginning [month, day, time] and ending [month, day, time].

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**SCHEDULE 2**

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**Compensation**

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The Company shall pay to the Agent in cash, upon each sale of Placement Shares pursuant to this Agreement, an amount equal to 3.0% of the gross proceeds from each sale of Placement Shares.

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**SCHEDULE 3**

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**Notice Parties**

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The Company

Hamid Erfanian	HErfanian@enzo.com
Patricia Eckert	PEckert@enzo.com
Matthew I. Kupferberg	mkupferberg@enzo.com

B. Riley Securities

Patrice McNicoll	pmcnicoll@brileyfin.com
Matt Feinberg	mfeinberg@brileyfin.com
Jon Merriman	jmerriman@brileyfin.com with a copy to <a href="mailto:atmdesk@brileyfin.com">atmdesk@brileyfin.com</a>

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Enzo Biochem Inc.  
81 Executive Boulevard, Suite 3  
Farmingdale, New York 11735  
Attention: Hamid Erfanian  
Telephone: 631.938.1458  
Email: HErfanian@enzo.com

with a copy to:

Enzo Biochem Inc.  
81 Executive Boulevard, Suite 3  
Farmingdale, New York 11735  
Attention: Matthew I. Kupferberg  
Telephone: (631) 760-7579  
Email: mkupferberg@enzo.com

**EXHIBIT 7(1)**  
**Form of Representation Date Certificate**  
**\_\_\_\_\_, 20\_\_**

This Representation Date Certificate (this “Certificate”) is executed and delivered in connection with Section 7(1) of the At Market Issuance Sales Agreement (the “Agreement”), dated May 12, 2023, and entered into between Enzo Biochem, Inc. (the “Company”) and B. Riley Securities, Inc. All capitalized terms used but not defined herein shall have the meanings given to such terms in the Agreement.

The Company hereby certifies as follows:

1. As of the date of this Certificate (i) the Registration Statement does not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein not misleading and (ii) neither the Registration Statement nor the Prospectus contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading and (iii) no event has occurred as a result of which it is necessary to amend or supplement the Prospectus in order to make the statements therein not untrue or misleading for this paragraph 1 to be true.

2. Each of the representations and warranties of the Company contained in the Agreement were, when originally made, and are, as of the date of this Certificate, true and correct in all material respects.

3. Except as waived by the Agent in writing, each of the covenants required to be performed by the Company in the Agreement on or prior to the date of the Agreement, this Representation Date, and each such other date prior to the date hereof as set forth in the Agreement, has been duly, timely and fully performed in all material respects and each condition required to be complied with by the Company on or prior to the date of the Agreement, this Representation Date, and each such other date prior to the date hereof as set forth in the Agreement has been duly, timely and fully complied with in all material respects.

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4. Subsequent to the date of the most recent financial statements in the Prospectus, and except as described in the Prospectus, including Incorporated Documents, there has been no Material Adverse Effect.

5. No stop order suspending the effectiveness of the Registration Statement or of any part thereof has been issued, and no proceedings for that purpose have been instituted or are pending or threatened by any securities or other governmental authority (including, without limitation, the Commission).

6. No order suspending the effectiveness of the Registration Statement or the qualification or registration of the Placement Shares under the securities or Blue Sky laws of any jurisdiction are in effect and no proceeding for such purpose is pending before, or threatened, to the Company’s knowledge or in writing by, any securities or other governmental authority (including, without limitation, the Commission).

The undersigned has executed this Representation Date Certificate as of the date first written above.

**ENZO BIOCHEM, INC.**

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

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**EXHIBIT 23**

**Permitted Issuer Free Writing Prospectuses**

None.

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May 12, 2023

Enzo Biochem, Inc.  
81 Executive Blvd., Suite 3  
Farmingdale, NY 11735

Re: Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as counsel to Enzo Biochem, Inc., a New York corporation (the “Company”), in connection with the Registration Statement on Form S-3 (the “Registration Statement”) filed with the Securities and Exchange Commission (the “SEC”) under the Securities Act of 1933, as amended (the “Act”), relating to the proposed public offering on a delayed or continuous basis pursuant to Rule 415 under the Act by the Company of up to a total of \$150,000 of securities consisting of (i) shares of the Company’s common stock, par value \$0.01 per share (“Common Stock”), (ii) secured or unsecured debt securities, in one or more series, which may be either senior debt securities or subordinated debt securities (“Debt Securities”), to be issued pursuant to an indenture between the Company and a trustee or bank to be named, which may be supplemented for any series of Debt Securities and which is filed as an exhibit to the Registration Statement (the “Indenture”), (iii) shares of the Company’s preferred stock, par value \$0.01 per share (“Preferred Stock”), (iv) warrants to purchase Common Stock, Preferred Stock or Debt Securities, (v) depositary shares and (vi) units composed of the foregoing (“Units” and with Common Stock, Debt Securities and Preferred Stock, the “Securities”). The Securities may be sold by the Company from time to time as set forth in the Registration Statement, the prospectus that forms a part of the Registration Statement (the “Prospectus”) and as will be set forth in one or more supplements to the Prospectus (each, a “Prospectus Supplement”).

We have also acted as counsel to the Company in connection with the sale from time to time by the Company, pursuant to the Sales Agreement, dated May 12, 2023, between the Company and B. Riley Securities, Inc., of shares of Common Stock having an aggregate offering price of up to \$30,000,000 that are available for issuance as of May 11, 2023 (the “ATM Shares”). Sales of the ATM Shares will be made pursuant to the Registration Statement and the related prospectus covering the ATM Shares included in the Registration Statement.

In arriving at the opinion expressed below, we have assumed that (i) the issuance, sale, amount and terms of the Securities to be offered from time to time will be duly authorized and determined by proper action of the Board of Directors of the Company (the “Board”) consistent with the procedures and terms described in the Registration Statement and the applicable Prospectus Supplement (each, a “Board Action”) and in accordance with the Company’s Certificate of Incorporation, as amended (the “Certificate”), the Company’s By-laws, as amended, the Indenture and applicable New York law, (ii) the Registration Statement and any amendments thereto (including post-effective amendments) are effective under the Act, (iii) a Prospectus Supplement will have been filed with the SEC describing the Securities offered thereby, (iv) all Securities will be issued and sold in compliance with applicable federal and state securities laws and in the manner stated in the Registration Statement and the applicable Prospectus Supplement and (v) any underwriting or purchase agreement with respect to any Securities offered will have been duly authorized and validly executed and delivered by each of the parties thereto (other than the Company).

**McDermott  
Will & Emery**

One Vanderbilt Avenue New York NY 10017-3852 Tel +1 212 547 5400 Fax +1 212 547 5444

US practice conducted through McDermott Will & Emery LLP.

Enzo Biochem, Inc.  
May 12, 2023  
Page 2

We have also assumed that the laws of the State of New York will be chosen to govern the Indenture, any warrant agreements and any deposit agreement, and that such choice is a valid and legal provision. In addition, we have examined and relied, to the extent we deemed proper, on certificates of officers of the Company as to factual matters, and on originals or copies certified or otherwise identified to our satisfaction, of all such corporate records of the Company and such other instruments and certificates of public officials and other persons as we have deemed appropriate. In our examination, we have assumed the authenticity of all documents submitted to us as originals, the conformity to the original documents of all documents submitted to us as copies, the genuineness of all signatures on documents reviewed by us and the legal capacity of natural persons.

Based upon, subject to and limited by the foregoing, we are of the opinion that, as of the date hereof:

1. Upon due authorization by Board Action of an issuance of Common Stock (other than the ATM Shares as to which our opinion is expressed in paragraph 7 below), and upon issuance and delivery of the Common Stock against payment of valid consideration therefor in accordance with the terms of such Board Action and any applicable underwriting or purchase agreement, and as contemplated by the Registration Statement and/or the applicable Prospectus Supplement, the shares of Common Stock will be validly issued, fully paid and non-assessable.
2. When the Indenture has been duly executed on behalf of the Company and the trustee thereunder (the “Trustee”), the Trustee has been qualified to act as trustee under the Indenture and when the Debt Securities have been (i) duly established by the Indenture or any supplemental indenture thereto, (ii) duly authorized and established by applicable Board Action and duly authenticated by the Trustee and (iii) duly executed and delivered on behalf of the Company against payment therefor in accordance with the terms of such Board Action, any applicable underwriting or purchase agreement, the Indenture and any applicable supplemental indenture thereto, and as contemplated by the Registration Statement and/or the applicable Prospectus Supplement, the Debt Securities will constitute valid and binding obligations of the Company, enforceable in accordance with their terms, except that the enforceability thereof may be limited by or subject to bankruptcy, reorganization, insolvency, fraudulent conveyance, moratorium or other similar laws now or hereafter existing which affect the rights and remedies of creditors generally and equitable principles of general applicability.
3. When the Preferred Stock has been duly authorized and established by applicable Board Action, in accordance with the terms of the Certificate and applicable law, upon issuance and delivery of the Preferred Stock against payment of valid consideration therefor in accordance with the terms of such Board Action and any applicable underwriting or purchase agreement, and as contemplated by the Registration Statement and/or the applicable Prospectus Supplement, such shares of Preferred Stock will be validly issued, fully paid and non-assessable.

4. When the warrants to purchase Common Stock, Preferred Stock or Debt Securities have been (i) duly authorized and established by applicable Board Action, and (ii) duly executed and delivered on behalf of the Company against payment therefor in accordance with the terms of such Board Action, any applicable underwriting or purchase agreement, and as contemplated by the Registration Statement and/or the applicable Prospectus Supplement, the warrants to purchase Common Stock, Preferred Stock or Debt Securities will constitute binding obligations of the Company, enforceable in accordance with their terms, except that the enforceability thereof may be limited by or subject to bankruptcy, reorganization, insolvency, fraudulent conveyance, moratorium or other similar laws now or hereafter existing which affect the rights and remedies of creditors generally and equitable principles of general applicability.
5. When the depositary shares, the underlying Preferred Stock and a deposit agreement in connection therewith have been duly authorized and established by applicable Board Action, in accordance with the terms of the Certificate and applicable law, and when (i) a deposit agreement substantially as described in the Registration Statement has been duly executed and delivered by the Company and a depositary, and (ii) the depositary receipts representing the depositary shares in the form contemplated and authorized by such deposit agreement have been duly executed and delivered by such depositary and delivered to and paid for by the purchasers thereof in the manner contemplated by the Registration Statement and/or the applicable Prospectus Supplement, upon issuance and delivery of the Preferred Stock against payment of valid consideration therefor in accordance with the terms of such Board Action and any applicable underwriting or purchase agreement, and as contemplated by the Registration Statement and/or the applicable Prospectus Supplement, such depositary shares will be validly issued and will entitle the holders thereof to the rights specified in the depositary receipts and the deposit agreement relating to such depositary shares.
6. With respect to the Units, when (i) the Board has taken the appropriate Board Action to approve and establish the terms of the Units and to authorize and approve the issuance thereof, the terms of the offering and related matters, and (ii) the Units have been duly executed and delivered in accordance with the applicable underwriting or purchase agreement approved by or on behalf of the Board, upon payment of the consideration therefor provided therein and as contemplated by the Registration Statement and/or the applicable Prospectus Supplement, the Units will constitute binding obligations of the Company, enforceable against the Company in accordance with their terms, except that the enforceability thereof may be limited by or subject to bankruptcy, reorganization, insolvency, fraudulent conveyance, moratorium or other similar laws now or hereafter existing which affect the rights and remedies of creditors generally and equitable principles of general applicability.
7. With respect to the ATM Shares, all corporate proceedings necessary for the authorization, issuance and delivery of the ATM Shares have been taken and, upon issuance pursuant to the terms of the Sales Agreement and in accordance with the board resolutions related to the offering of the ATM Shares, the ATM Shares will be validly issued, fully paid and non-assessable by the Company.

To the extent that the obligations of the Company under a deposit agreement or the obligations of the Company under the Indenture may be dependent upon such matters, we have assumed for purposes of this opinion (i) that the applicable depositary or trustee, as the case may be, is duly organized, validly existing and in good standing under the laws of its jurisdiction of organization and is duly qualified to engage in the activities contemplated by the applicable deposit agreement or the Indenture, as the case may be, (ii) that such deposit agreement or Indenture, as the case may be, has been duly authorized, executed and delivered by and constitutes the legal, valid and binding obligation of such depositary or trustee, as the case may be, enforceable against the depositary or the trustee, as the case may be, in accordance with its respective terms, except that the enforceability thereof may be limited by or subject to bankruptcy, reorganization, insolvency, fraudulent conveyance, moratorium or other similar laws now or hereafter existing which affect the rights and remedies of creditors generally and equitable principles of general applicability, (iii) that such depositary or trustee, as the case may be, is in compliance, generally and with respect to acting as a depositary or trustee, respectively, under the applicable deposit agreement or the Indenture, with all applicable laws and regulations, and (iv) that such depositary or trustee, as the case may be, has the requisite organizational and legal power and authority to perform its obligations under the applicable deposit agreement or the Indenture, as the case may be.

We express no opinion as to the applicability of, compliance with or effect of, the law of any jurisdiction other than the laws of the State of New York.

This opinion speaks only as of the date hereof. We expressly disclaim any responsibility to advise you of any development or circumstance of any kind, including any change of law or fact, that may occur after the date of this opinion that might affect the opinions expressed therein.

We hereby consent to the reference to our firm under the caption "Legal Matters" in the Registration Statement and to the use of this opinion as an exhibit to the Registration Statement. In giving this consent, we do not hereby admit that we come within the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the SEC thereunder.

Very respectfully yours,

/s/ MCDERMOTT WILL & EMERY LLP



**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We consent to the incorporation by reference in this Registration Statement of Enzo Biochem, Inc. on Form S-3 to be filed on or about May 12, 2023 of our reports dated October 14, 2022 on our audits of the financial statements and financial statement schedule as of July 31, 2022 and 2021 and for each of the years in the three-year period ended July 31, 2022, and the effectiveness of Enzo Biochem Inc.'s internal control over financial reporting as of July 31, 2022, which reports were included in the Annual Report on Form 10-K filed October 14, 2022. We also consent to the reference to our firm under the caption "Experts" in this Registration Statement on Form S-3.

*/s/ EisnerAmper LLP*

EISNERAMPER LLP  
Iselin, New Jersey  
May 12, 2023

## Calculation of Filing Fee Tables

Form S-3  
(Form Type)Enzo Biochem, Inc.  
(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered and Carry Forward Securities

	Security Type	Security Class Title	Fee Calculation or Carry Forward Rule	Amount Registered (1)	Proposed Maximum Offering Price Per Unit (2)	Maximum Aggregate Offering Price (1)(3)	Fee Rate	Amount of Registration Fee
Primary Offering of Securities:								
Fees to Be Paid	Equity	Common Stock, par value \$0.01 per share <sup>(3)</sup>	457(o)	\$ —	\$ —	\$ —	—	\$ —
Fees to Be Paid	Equity	Preferred Stock, par value \$0.01 per share <sup>(4)</sup>	457(o)	—	—	—	—	—
Fees to Be Paid	Equity	Depository Shares <sup>(5)</sup>	457(o)	—	—	—	—	—
Fees to Be Paid	Debt	Debt Securities <sup>(6)</sup>	457(o)	—	—	—	—	—
Fees to Be Paid	Other	Warrants <sup>(7)</sup>	457(o)	—	—	—	—	—
Fees to Be Paid	Other	Units <sup>(8)</sup>	457(o)	—	—	—	—	—
Fees to Be Paid	Unallocated (Universal) Shelf <sup>(1)</sup>	(1)	457(o)	—	—	\$150,000,000	0.00011020	\$ 16,530
<b>Total Offering Amounts</b>						\$150,000,000		\$ 16,530
<b>Total Fees Previously Paid</b>								—
<b>Total Fee Offsets</b>								16,530
<b>Net Fee Due</b>								\$ 0 <sup>(9)</sup>

- (1) The amount to be registered consists of up to \$150,000,000 of an indeterminate amount of common stock, preferred stock, depository shares, debt securities, warrants and/or units. There is also being registered hereunder such currently indeterminate number of (i) shares of common stock or other securities of the registrant as may be issued upon conversion of, or in exchange for, convertible or exchangeable debt securities and/or preferred stock registered hereby, or (ii) shares of preferred stock, common stock, depository shares, debt securities or units as may be issued upon exercise of warrants registered hereby, as the case may be, including under any applicable antidilution provisions. Any securities registered hereunder may be sold separately or together with other securities registered hereunder.
- (2) The proposed maximum offering price per security will be determined from time to time by the registrant in connection with the issuance by the registrant of the securities registered hereunder and is not specified as to each class of security pursuant to Instruction 2.A.iii.b of the Instructions to the Calculation of Filing Fee Tables and Related Disclosure of Form S-3.
- 
- (3) Including such indeterminate amount of common stock as may be issued from time to time at indeterminate prices or upon conversion of debt securities and/or preferred stock registered hereby, or upon exercise of warrants registered hereby, as the case may be.
- (4) Including such indeterminate amount of preferred stock as may be issued from time to time at indeterminate prices or upon conversion of debt securities and/or preferred stock registered hereby, or upon exercise of warrants registered hereby, as the case may be.
- (5) Represents depository shares, evidenced by depository receipts, issued pursuant to a deposit agreement. In the event the registrant issues fractional interests in shares of the preferred stock registered hereunder, depository receipts will be distributed to purchasers of such fractional interests, and such shares of preferred stock will be issued to a depository under the terms of a deposit agreement.
- (6) Including such indeterminate principal amount of debt securities as may be issued from time to time at indeterminate prices or upon exercise of warrants registered hereby, as the case may be.
- (7) Warrants may be sold separately or together with any of the securities registered hereby and may be exercisable for shares of common stock or preferred stock registered hereby. Because the warrants will provide a right only to purchase such securities offered hereunder, no additional registration fee is required.
- (8) Each unit will be issued under a unit agreement and will represent an interest in two or more securities registered pursuant to this registration statement, which may or may not be separable from one another. Because the units will provide a right only to purchase such securities offered hereunder, no additional registration fee is required.
- (9) Pursuant to Rule 415(a)(6) and Rule 457(p) under the Securities Act, the registrant hereby offsets the total registration fee due under this registration statement by the amount of the filing fee associated with the unsold securities from the registrant's (i) Form S-3 Registration Statement, filed with the Commission on September 1, 2017 (SEC File No. 333-220312), registering securities for a maximum aggregate offering price of \$150,000,000 (the "2017 Registration Statement") and (ii) Form S-3 Registration Statement, filed with the Commission on September 1, 2016 (SEC File No. 333-313440), registering securities for a maximum aggregate offering price of \$50,000,000 (the "2016 Registration Statement" and together with the 2017 Registration Statement, the "Prior Registration Statement"). The associated filing fee for the securities remaining under the Prior Registration Statement is hereby used to offset the current registration fee due. Pursuant to Rule 415(a)(6), the offering of such securities registered under the Prior Registration Statement will be deemed terminated as of the date of effectiveness of this registration statement.