

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d) of the
Securities Exchange Act of 1934

Date of report (Date of earliest event reported): **December 3, 2018**

Enzo Biochem, Inc.
(Exact Name of Registrant as Specified in Its Charter)

New York
(State or Other Jurisdiction of Incorporation)

001-09974
(Commission File Number)

13-2866202
(IRS Employer Identification No.)

527 Madison Avenue
New York, New York
(Address of Principal Executive Offices)

10022
(Zip Code)

(212) 583-0100
(Registrant's Telephone Number, Including Area Code)

(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (*see* General Instruction A.2. below):

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 450 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-1 of this chapter).

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 complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. []

Item 8.01 Other events

On December 3, 2018, Enzo Biochem, Inc. issued a press release titled “Enzo Biochem Reports Publication of Study on Therapeutic Candidate SK1-I Detailing Promising Results in a Model of Treatment Resistant Breast Cancer.”

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits.

99.1 [Press Release of Enzo Biochem, Inc., dated December 3, 2018.](#)

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

ENZO BIOCHEM, INC.

Date: December 3, 2018

By: /s/ Barry W. Weiner
Barry W. Weiner
President



*news
release*

Enzo Biochem, Inc.
527 Madison Avenue
New York, NY 10022

FOR IMMEDIATE RELEASE

**ENZO BIOCHEM REPORTS PUBLICATION OF STUDY ON THERAPEUTIC CANDIDATE SK1-I
DETAILING PROMISING RESULTS IN A MODEL OF TREATMENT-RESISTANT BREAST CANCER**

**Drug Candidate SK1-I Shown to Reverse Tamoxifen Resistance in Human Breast Cancer
Preclinical Study**

NEW YORK, NY, December 3, 2018 – Enzo Biochem, Inc. (NYSE:ENZ), an integrated diagnostics and therapeutics company, today reported the publication of a study in the *Journal of Lipid Research* by researchers at a collaborating institution that shows SK1-I, the company's proprietary Sphingosine Kinase 1 inhibitor drug candidate, was effective in reversing resistance to the breast cancer drug tamoxifen in a tamoxifen-resistant human breast cancer cell line. As pointed out in the publication, endocrine therapy, such as tamoxifen, is a first line treatment for estrogen receptor-positive breast cancer patients. However, more than 50% of patients who initially respond to tamoxifen ultimately fail therapy due to the development of resistance. These results suggest that SK1-I may have potential in the treatment of tamoxifen-resistant breast cancers.

Elazar Rabbani, Ph.D., CEO of Enzo Biochem, Inc. commented: "Regulation of the Sphingosine pathway for the potential treatment of a variety of cancers has become an area of pioneering interest in the field of oncology. Our research results, as well as those of our collaborators, show that SK1-I, Enzo's proprietary Sphingosine Kinase 1 inhibitor, may address significant unmet medical needs in the treatment of particular oncology indications and immune-related disorders, and warrants further development. We look forward to advancing this therapeutics program in the coming year."

Sphingosine Kinase 1 is a key enzyme in the Sphingosine pathway that has been implicated in tumor cell growth and pathological inflammation. The enzyme acts by phosphorylating the cellular lipid Sphingosine to Sphingosine 1-Phosphate (S1P), an important biological mediator of tumor cell proliferation and drug resistance in various cancers, and of immune function. SK1-I is a small molecule that specifically inhibits Sphingosine Kinase 1 and

has shown anti-cancer activity in various models of hematological cancers, such as Acute Lymphoblastic Leukemia (ALL), and solid tumors, such as glioblastoma.

As a result of Enzo's research, a novel solid tumor indication for SK1-I has also recently been validated in multiple *in vitro* human tumor cell line models and is undergoing further development. In further support of this program, Enzo has established in-house GMP manufacturing of SK1-I and is planning to initiate *in vivo* tumor xenograft studies for the lead solid tumor indication using the GMP-manufactured compound in the near term. The company is also exploring various partnership approaches for the continued development of the compound.

Apart from oncology, in the immunoregulation area, another of Enzo's research collaborators has shown that SK1-I prevents the induction of Interferon Gamma (IFN γ), a major inflammatory biomarker, in a well-established Concanavalin A (ConA) induced animal model of autoimmune hepatitis.

The compound SK1-I and related compounds, as well as their use in oncology and other therapeutic areas, are covered by a family of issued U.S. patents co-owned by Enzo and Virginia Commonwealth University and exclusively licensed by VCU to Enzo. Foreign patent family members have also issued or been allowed. The basic patent terms of the U.S. patents in this patent family continue into 2029, before possible extensions. On May 22, 2018, the latest patent in this family, U.S. Patent No. 9,974,758, which is directed to methods for treating cancer using SK1-I, was issued.

More recently, the company filed a new family of patent applications, both in the U.S. and internationally, that are directed to novel oncology indications for SK1-I, including the company's lead solid tumor indication. The basic patent terms for any U.S. patents that may issue from this patent family will continue into 2038, before possible extensions.

About Enzo Biochem

Enzo Biochem is a pioneer in molecular diagnostics, leading the convergence of clinical laboratories, life sciences and intellectual property through the development of unique diagnostic platform technologies that provide numerous advantages over previous standards. A global company, Enzo Biochem utilizes cross-functional teams to develop and deploy products, systems and services that meet the ever-changing and rapidly growing needs of health care today and into the future. Underpinning Enzo Biochem's products and technologies is a broad and deep intellectual property portfolio, with patent coverage across a number of key enabling technologies.

Except for historical information, the matters discussed in this news release may be considered "forward-looking" statements within the meaning of Section 27A of the Securities Act of 1933, as amended and Section 21E of the Securities Exchange Act of 1934, as amended. Such statements include declarations regarding the intent, belief or current expectations of the

Company and its management, including those related to cash flow, gross margins, revenues, and expenses which are dependent on a number of factors outside of the control of the Company including, inter alia, the markets for the Company's products and services, costs of goods and services, other expenses, government regulations, litigation, and general business conditions. See Risk Factors in the Company's Form 10-K for the fiscal year ended July 31, 2018. Investors are cautioned that any such forward-looking statements are not guarantees of future performance and involve a number of risks and uncertainties that could materially affect actual results. The Company disclaims any obligations to update any forward-looking statement as a result of developments occurring after the date of this press release.

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