

April 1, 2019



Xenetic Biosciences, Inc. Reports 2018 Year End Results and Provides Corporate Update

- Recent transformative agreement to acquire innovative XCART platform technology positions Company to drive significant momentum

- XCART expected to initially target B-cell lymphomas and has the potential to address multiple tumor types with an initial global market opportunity in Non-Hodgkin Lymphoma of over \$5 billion annually

FRAMINGHAM, MA / ACCESSWIRE / April 1, 2019 [Xenetic Biosciences, Inc.](#) (NASDAQ: XBIO) ("Xenetic" or the "Company"), a clinical-stage biopharmaceutical company focused on the discovery, research and development of next-generation biologic drugs and novel orphan oncology therapeutics, announced today its financial results for the year ended December 31, 2018.

Xenetic also provided a corporate update and reviewed plans related to the Company's recently announced agreement to acquire a novel CAR T ("Chimeric Antigen Receptor T Cell") platform technology, called "XCART", as well as its oncology therapeutic XBIO-101 (sodium cridanomod), a small-molecule immunomodulator and interferon inducer which, in preliminary studies has been shown to increase progesterone receptor ("PrR") expression in endometrial tumor tissue.

"Upon closing of our recent transformative agreement to acquire XCART, our differentiated CAR T platform technology, Xenetic will be positioned at the forefront of innovation in the development of new oncology therapeutics where there remains significant unmet need," commented [Jeffrey Eisenberg, Chief Executive Officer](#) of Xenetic. "Over the course of 2019, we plan to focus our R&D efforts initially on leveraging the XCART platform to develop cell-based therapeutics for the treatment of B-cell Non-Hodgkin lymphomas, an initial global market opportunity estimated to exceed \$5 billion per year.¹ I believe we are well positioned to build momentum and evolve Xenetic into a significant player in the oncology space, which will ultimately drive meaningful value for shareholders."

XCART Technology

On March 1, 2019, the Company entered into agreements to acquire the novel XCART platform technology, a proximity-based screening platform capable of identifying CAR constructs that can target patient-specific tumor neoantigens, with a demonstrated proof of mechanism in B-cell Non-Hodgkin lymphomas. The XCART technology, developed by The Scripps Research Institute in collaboration with the Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, is believed to have the potential to significantly enhance the safety

and efficacy of cell therapy for B-cell lymphomas by generating patient- and tumor-specific CAR T cells. The acquisition is subject to conditions typical for a transaction of this kind, including appropriate stockholder approvals, and is expected to close in the first half of 2019.

The XCART technology platform was designed by its originators to utilize an established screening technique to identify peptide ligands that bind specifically to the unique B-cell receptor ("BCR") on the surface of an individual patient's malignant tumor cells. The peptide is then inserted into the antigen-binding domain of a CAR, and a subsequent transduction/transfection process is used to engineer the patient's T cells into a CAR T format which redirects the patient's T cells to attack the tumor. Essentially, the XCART screening platform is the inverse of a typical CAR T screening protocol wherein libraries of highly specific antibody domains are screened against a given target. In the case of XCART screening, the target is itself an antibody domain, and hence highly specific by its nature. The XCART technology creates the possibility of personalized treatment of lymphomas utilizing a CAR with an antigen-binding domain that should only recognize, and only be recognized by, the unique BCR of a particular patient's B-cell lymphoma.

An expected result for XCART is limited off-tumor toxicities, such as B-cell aplasia. Xenetic's clinical development program will seek to confirm the early preclinical results, and to demonstrate a more attractive safety profile than existing therapies.

Once the acquisition is consummated, the Company intends to pursue development efforts of the XCART technology as well as other development efforts in the area of CAR T therapy.

XBIO-101 Program Update

XBIO-101 is the Company's most advanced investigational drug candidate with an Orphan Drug designation from the FDA for the potential treatment of progesterone receptor negative endometrial cancer in conjunction with progesterone therapy. The Company's Phase 2 clinical trial for XBIO-101 commenced patient dosing in October 2017. The trial targets a population of patients who have either failed progestin monotherapy or who have been identified as having progesterone receptor negative ("PrR-") tumors. The Company closed patient enrollment of the trial in March 2019 as a result of slower than expected progress on the trial resulting from patient enrollment and retention challenges.

Xenetic is currently in the process of identifying development paths for XBIO-101, particularly those that can efficiently leverage the existing human data and regulatory status to extend development into immuno-oncology settings.

Summary of Financial Results for Fiscal Year 2018

Net loss for the year ended December 31, 2018, was approximately \$7.3 million. The Company had an accumulated deficit of \$153.2 million at December 31, 2018 as compared to an accumulated deficit of approximately \$145.9 million at December 31, 2017. Working capital (deficit) was approximately \$(0.4) million and \$3.9 million at December 31, 2018 and December 31, 2017, respectively. During the year ended December 31, 2018, the Company's working capital decreased by \$4.3 million due primarily to outflows for general operating costs and costs related to our XBIO-101 Phase 2 clinical trial. These cash outflows were partially offset by approximately \$1.5 million of proceeds received from the exercise of warrants during the year ended December 31, 2018.

The Company ended the year with approximately \$0.6 million of cash. Subsequent to year-end, on March 7, 2019, the Company completed a registered direct offering of common stock with gross proceeds of approximately \$3.1 million before deducting placement agent fees and other offering expenses.

About Xenetic Biosciences

Xenetic Biosciences, Inc. is a clinical-stage biopharmaceutical company focused on the discovery, research and development of next-generation biologic drugs and novel orphan oncology therapeutics. The Company recently announced its plans to acquire the XCART platform, a novel CAR T technology engineered to target personalized, patient-specific tumor neoantigens. The transaction is expected to close in the first half of 2019, and the Company plans to initially apply the XCART technology to develop cell-based therapeutics for the treatment of B-cell lymphomas.

Xenetic's Phase 2 oncology asset, XBIO-101 (sodium cridanimod), is a small-molecule investigational immunomodulator and interferon inducer which, in exploratory clinical studies, has also been shown to increase progesterone receptor (PrR) and estrogen receptor (ER) expression in certain tumor tissues. The Company plans to pursue collaborations with immuno-oncology (I-O) companies in which it would seek to use XBIO-101 in combination with approved or developmental I-O compounds such as checkpoint inhibitors. Additionally, Xenetic's proprietary drug development platform, PolyXen™, enables next-generation biologic drugs by improving their half-life and other pharmacological properties. The Company has ongoing business development activities to explore partnerships utilizing its PolyXen delivery platform.

For more information, please visit the company's website at www.xeneticbio.com and connect on [Twitter](#), [LinkedIn](#), and [Facebook](#).

ADDITIONAL INFORMATION AND WHERE TO FIND IT

In connection with the acquisition, the Company has filed with the Securities and Exchange Commission (the "SEC"), a registration statement on Form S-4 that includes a combined preliminary proxy statement/prospectus. This communication is not a substitute for any proxy statement, prospectus registration statement, or other documents the Company may file with the SEC in connection with the acquisition. INVESTORS AND SECURITY HOLDERS ARE URGED TO READ CAREFULLY AND IN THEIR ENTIRETY THESE DOCUMENTS WHEN THEY BECOME AVAILABLE, ANY AMENDMENTS OR SUPPLEMENTS TO THESE DOCUMENTS, AND OTHER DOCUMENTS FILED BY THE COMPANY WITH THE SEC IN CONNECTION WITH THE ACQUISITION, BECAUSE THESE DOCUMENTS WILL CONTAIN IMPORTANT INFORMATION. Investors and security holders will be able to obtain free copies of these materials and other documents filed with the SEC by the Company through the website maintained by the SEC at www.sec.gov. Investors and security holders will also be able to obtain free copies of the documents filed by the Company with the SEC by directing a written request to Xenetic Biosciences, Inc., 40 Speen Street, Suite 102, Framingham, MA 01701 or by calling 781-778-7720.

PARTICIPANTS IN THE SOLICITATION

This communication is not a solicitation of a proxy from any investor or security holder. The Company, its respective directors, executive officers and other members of its management and employees may be deemed to be participants in the solicitation of proxies from shareholders of the Company in connection with the acquisition. Information regarding the persons who may, under the rules of the SEC, be deemed participants in the solicitation of proxies in connection with the acquisition, including a description of their direct or indirect interests, by security holdings or otherwise, will be set forth in the relevant materials when filed with the SEC. Information regarding the directors and executive officers of the Company is contained in its proxy statement for its 2018 annual meeting of stockholders, filed with the SEC on November 13, 2018, its Annual Report on Form 10-K for the year ended December 31, 2018, which was filed with the SEC on March 29, 2019, and its Preliminary Proxy Statement on Form S-4, which was filed on March 29, 2019. These documents can be obtained free of charge from the sources indicated above.

Forward-Looking Statements

This press release contains forward-looking statements for purposes of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. All statements contained in this press release other than statements of historical facts may constitute forward-looking statements within the meaning of the federal securities laws. These statements can be identified by words such as "expects," "plans," "projects," "will," "may," "anticipates," "believes," "should," "intends," "estimates," and other words of similar meaning. Any forward-looking statements contained herein are based on current expectations, and are subject to a number of risks and uncertainties. These forward-looking statements include, but are not limited to, statements regarding the acquisition and development of the CAR T technology, such as the anticipated effects of the acquisition on the Company's position in the development of new oncology therapeutics, the expected leveraging opportunities resulting from the acquisition, the expected results of the XCART technology, and the Company's future plans for the XCART clinical program and development efforts in the area of CAR T therapy after the acquisition is consummated. Many factors could cause our actual activities or results to differ materially from the activities and results anticipated in forward-looking statements. Important factors that could cause actual results to differ materially from such plans, estimates or expectations include, among others, (1) that one or more closing conditions to the acquisition of the CAR T technology, including certain regulatory approvals, may not be satisfied or waived, on a timely basis or otherwise, or that the required approval by the stockholders of the Company may not be obtained; (2) the condition that the Company have adequate financing to fund its future working capital obligations may not be met; (3) the risk that the acquisition may not be completed on the terms or in the time frame expected by the Company, or at all; (4) unexpected costs, charges or expenses resulting from the acquisition; (5) uncertainty of the expected financial performance of the Company following completion of the acquisition; (6) failure to realize the anticipated benefits of the acquisition; (7) the ability of the Company to implement its business strategy; (8) the occurrence of any event that could give rise to termination of the acquisition; and (9) other risk factors as detailed from time to time in the Company's reports filed with the SEC, including its annual report on Form 10-K, periodic quarterly reports on Form 10-Q, periodic current reports on Form 8-K and other documents filed with the SEC.. In addition, forward-looking statements may also be adversely affected by general market factors, competitive product development, product availability, federal and state regulations and legislation, the regulatory process for new product candidates and indications, manufacturing issues that

may arise, patent positions and litigation, among other factors. The forward-looking statements contained in this press release speak only as of the date the statements were made, and the Company does not undertake any obligation to update forward-looking statements, except as required by law.

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1. Market Reports World GLOBAL NON-HODGKIN LYMPHOMA THERAPEUTICS MARKET - SEGMENTED BY TYPE OF TREATMENT - GROWTH, TRENDS AND FORECASTS (2018 - 2023); BioPharm Insight Surveillance, Epidemiology, and End Results (SEER) 9 registries, National Cancer Institute, 2017

SOURCE: Xenetic Biosciences, Inc.