

March 4, 2019



Xenetic Biosciences, Inc. (NASDAQ: XBIO) Announces Agreement to Acquire Innovative CAR T Technology Platform

Innovative XCART platform with demonstrated proof of mechanism and preclinical evidence of target specificity positions Xenetic to address high value oncology market with differentiated CAR T technology

XCART technology platform designed to target personalized, patient-specific tumor neoantigens

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

LEXINGTON, MA / ACCESSWIRE / March 4, 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 agreement to acquire the novel CAR T ("Chimeric Antigen Receptor T Cell") platform technology, called "XCART," 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 ("Scripps") 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.

"This acquisition is a transformative step in the strategic evolution of Xenetic," commented [Jeffrey Eisenberg, Chief Executive Officer](#) of Xenetic. "With this novel and differentiated CAR T technology, we are now positioned in a field that is at the forefront in the development of new oncology therapeutics, which we believe will drive significant value for shareholders. The XCART platform was designed to target personalized, patient-specific tumor neoantigens and has demonstrated promising preclinical data in an area of significant unmet medical need. Our R&D efforts will focus 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."*

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.

Matthew John Frigault, M.D., a member of Xenetic's Scientific Advisory Board and medical oncologist in the Hematologic Malignancy Program at the Massachusetts General Hospital Cancer Center, Assistant Director of the Cellular Therapy Service, and Instructor at Harvard Medical School commented, "Adoptive cell therapy, and CAR T in particular, has been an area of great interest in recent years, and an area that I have built my career around. There are a number of CAR T products in development and the existing therapies can be highly efficacious, but not all patients respond, and the side effects can be frequent and serious, even life threatening."

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.

Under the terms of the transaction, Xenetic will acquire all outstanding shares of Hesperix S.A., a newly-formed Swiss entity to which all XCART owners and inventors other than Scripps have assigned their rights to XCART, and will exclusively license Scripps' rights in the technology, in exchange for an aggregate 7,500,000 shares of Xenetic common stock.

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 will file with the Securities and Exchange Commission (the "SEC"), a registration statement on Form S-4 that will include a combined proxy statement/prospectus. This communication is not a substitute for any proxy statement, registration statement, proxy statement/prospectus 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, 2017, which was filed with the SEC on March 30, 2018, its Quarterly Reports on Form 10-Q for the quarters ended March 31, 2018, June 30, 2018, and September 30, 2018 which were filed with the SEC on May 15, 2018, August 10, 2018, and November 9, 2018, respectively, and certain of its Current Reports filed on Form 8-K. 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.

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, 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. The foregoing list of important factors is not exclusive. 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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*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.