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Xenetic Biosciences, Inc. Presents Positive Preclinical Data Highlighting the Potential of Co-Administration of DNase I with CAR T Cells in a Murine Model of Melanoma Lung Metastasis

Data presented at the AACR Special Conference in Cancer Research: Tumor-body Interactions: The Roles of Micro- and Macroenvironment in Cancer

Results bolster Company's rationale for incorporating DNase I as an adjunctive treatment to improve therapeutic responses in patients undergoing CAR T cell therapy

FRAMINGHAM, MA / ACCESSWIRE / November 21, 2024 /Xenetic Biosciences, Inc. (NASDAQ:XBIO) ("Xenetic" or the "Company"), a biopharmaceutical company focused on advancing innovative immune-oncology technologies addressing hard to treat cancers, today announced the presentation of preclinical data investigating the potential of co-administration of deoxyribonuclease I (DNase I) with chimeric antigen receptor (CAR) T cells in a syngeneic B16 melanoma murine model of lung metastasis.

The poster titled, "*The synergistic action of DNase I and CAR T cells enhances the therapeutic efficacy of adoptive immunotherapy in the syngeneic murine metastasis model*," was presented on behalf of the Company by Alexey Stepanov, PhD, Institute Investigator at The Scripps Research Institute, at the AACR Special Conference in Cancer Research: Tumor-body Interactions: The Roles of Micro- and Macroenvironment in Cancer, held November 17-20, 2024, in Boston.

"Xenetic's proprietary DNase-based oncology platform continues to demonstrate encouraging potential across a number of cancer indications and therapy modalities where there remains significant unmet need. CAR T cell therapy is a promising approach for treating various malignancies however, it has so far shown benefit only in hematological cancers, so efficacy in solid tumors remains an important goal. There, its antitumor activity is often hindered by a hostile, immunosuppressive tumor microenvironment (TME), which, in turn, is very often characterized by the presence of tumor-associated cell-free DNA (cfDNA) in the form of neutrophil extracellular traps (NETs). This research underscores the critical role of the NETs in modulating CAR T cell efficacy and the potential of DNase I to improve therapeutic responses for patients as an adjunctive treatment. Highlighted by the results seen with the co-administration of DNase I with murine EGFR-CAR T cells, we believe this approach has the potential to prolong survival compared to treatment with CAR T cell monotherapy," commented Reid Bissonnette, Ph.D., Executive Consultant for Translational

Research and Development at Xenetic. "We continue to be encouraged by the data demonstrated to date and look forward to further exploring the translational potential of this combinatorial approach in enhancing cancer treatment."

For the preclinical study co-administration of DNase I with CAR T cells was investigated in a syngeneic B16 murine melanoma model of lung metastasis. Bioluminescent imaging of melanoma metastatic processes has shown that a single injection of DNase I (10 mg/kg) together with CAR T cells suppressed B16-EGFR lung metastasis at early stages in comparison to the vehicle control group and extended survival.

Key Highlights

- Co-administration of single injection of DNase I (10 mg/kg) with murine EGFR-CAR T cells demonstrated to significantly suppress metastatic tumor burden, decreases the number of metastatic foci, and substantially prolongs survival compared to the CAR T cell monotherapy group.
- Degrading of NETs by DNase I increases the amount of tumor-infiltrating T and CAR T cells and reduces the immunosuppressive effects of the TME.
- Tumor immune cell infiltrate analysis revealed that the CD8 population of tumor-infiltrating CAR T cells from the DNase I treated group have lower expression of PD-1 and TIM-3 exhaustion markers.

Xenetic continues to advance its DNase-based oncology program towards Phase 1 clinical development for the treatment of pancreatic carcinoma and other locally advanced or metastatic solid tumors. Preliminary preclinical studies evaluating the combinations of DNase I with chemotherapy and DNase I with immuno-therapies in colorectal cancer models as well as CAR-T therapy have been completed.

About Xenetic Biosciences

Xenetic Biosciences, Inc. is a biopharmaceutical company focused on advancing innovative immune-oncology technologies addressing hard to treat cancers. The Company's DNase platform is designed to improve outcomes of existing treatments, including immunotherapies, by targeting neutrophil extracellular traps (NETs), which are involved in cancer progression. Xenetic is currently focused on advancing its systemic DNase program into the clinic as an adjunctive therapy for pancreatic carcinoma and other locally advanced or metastatic solid tumors.

For more information, please visit the Company's website atwww.xeneticbio.com and connect on [Twitter](), [LinkedIn](), and [Facebook]().

Forward-Looking Statements

This press release contains forward-looking statements that we intend to be subject to 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," "remain," "focus", "confidence in",

"potential", and other words of similar meaning, including, but not limited to, all statements regarding expectations for our DNase-based oncology platform, including statements regarding: the potential of co-administration of deoxyribonuclease I (DNase I) with chimeric antigen receptor (CAR) T cells in a syngeneic B16 melanoma murine model of lung metastasis; the DNase-based oncology platform continuing to demonstrate encouraging potential across a number of cancer indications and therapy modalities where there remains significant unmet need; efficacy of CAR T cell therapy in solid tumors remaining an important goal; our belief that this approach has the potential to prolong survival compared to treatment with CAR T cell monotherapy; continuing to be encouraged by the data demonstrated to date and looking forward to further exploring the translational potential of this combinatorial approach in enhancing cancer treatment; our focus on advancing innovative immune-oncology technologies addressing hard to treat cancers; the DNase platform improving outcomes of existing treatments, including immunotherapies, by targeting neutrophil extracellular traps (NETs), which are involved in cancer progression; and our focus on advancing our systemic DNase program towards Phase 1 clinical development as an adjunctive therapy for the treatment of pancreatic carcinoma and other locally advanced or metastatic solid tumors. Any forward-looking statements contained herein are based on current expectations and are subject to a number of risks and uncertainties. Many factors could cause our actual activities, performance, achievements, or results to differ materially from the activities and results anticipated in forward-looking statements. Important factors that could cause actual activities, performance, achievements, or results to differ materially from such plans, estimates or expectations include, among others, (1) unexpected costs, charges or expenses resulting from our manufacturing and collaboration agreements; (2) unexpected costs, charges or expenses resulting from the licensing of the DNase platform; (3) uncertainty of the expected financial performance of the Company following the licensing of the DNase platform; (4) failure to realize the anticipated potential of the DNase or PolyXen technologies; (5) the ability of the Company to obtain funding and implement its business strategy; and (6) 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, 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, general economic and business conditions, including potential adverse effects of public health issues, such as the COVID-19 outbreak, and geopolitical events, such as the conflicts in the Ukraine and in the Middle East, on economic activity, 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, litigation, and shareholder activism, 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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