



Voyager Therapeutics Announces Positive Preclinical Data from New Vectorized anti-HER2 Antibody Program at the 26th Society for Neuro-Oncology Annual Meeting

November 19, 2021

Novel intravenous (IV) vectorized antibody approach designed to activate innate immune system, destroy metastatic breast cancer tumors, and inhibit tumor progression in CNS

Proprietary TRACER™ capsid screening technology enables broad expression of vectorized antibody in mouse brain

TRACER AAV vector encoding anti-HER2 antibody demonstrated tumor reduction across multiple mouse models and survival benefit

CAMBRIDGE, Mass., Nov. 19, 2021 (GLOBE NEWSWIRE) -- Voyager Therapeutics, Inc. (Nasdaq: VYGR), a gene therapy company developing life-changing treatments and next-generation adeno-associated virus (AAV) platform technologies, today will present preclinical data demonstrating that IV dosing of a proprietary AAV vector identified by the TRACER™ screening technology, encoding an anti-HER2 antibody payload, prevented tumor growth in models of HER2+ brain metastases. Dan R. Laks, Ph.D., Voyager Scientist II, will present key findings at 4:15 p.m. ET during the 26th Society for Neuro-Oncology (SNO) Annual Meeting.

"Today's findings demonstrate that AAV gene transfer of HER2-directed antibodies to the central nervous system shows promise to treat brain metastases in patients with HER2+ breast cancer," said Glenn Pierce, M.D., Ph.D., interim chief scientific officer of Voyager. "While approved anti-HER2 therapies are effective for peripheral disease, they have limited ability to reach the CNS in sufficient concentrations to treat brain metastases. By using a proprietary, TRACER AAV capsid to deliver Voyager's vectorized payload, and by utilizing brain cells to produce therapeutic antibodies, we have demonstrated a durable effect against CNS tumors in several mouse models. We look forward to continued optimization of this innovative gene therapy approach as we progress toward clinical development."

Voyager's vectorized anti-HER2 antibody was shown to inhibit proliferation and promote antibody-dependent cell cytotoxicity (ADCC), a process that recruits natural killer cells, macrophages and/or brain-resident innate immune cells called microglia to eliminate tumor cells. IV administration of a proprietary AAV vector incorporating a TRACER blood-brain barrier penetrant capsid and a payload encoding an ADCC enhanced anti-HER2 antibody conferred a survival benefit in a mouse model of HER2+ brain metastasis.

SNO Oral Presentation Details

Title: AAV mediated brain delivery of an ADCC-enhanced antibody obviates xenograft growth in mouse models of HER2+ breast cancer brain metastasis

Abstract Number: EXTH-02

Abstract Session: CNS Metastases

Presenter: Dan R. Laks, Ph.D., Scientist II, Voyager

Presentation Time: 4:15 p.m. ET

Key Findings

- Peripheral administration of a proprietary TRACER AAV vector achieved widespread transduction of brain tissue such that efficacious levels of HER2-directed antibodies were produced for extended periods.
- In mouse models of HER2+ breast cancer brain metastasis, IV administration of a HER2 antibody-encoding AAV vector resulted in >1 ug/mL of the antibody in cerebrospinal fluid.
- AAV-mediated expression of the ADCC-enhanced HER2-directed antibody significantly blocked tumor growth in multiple orthotopic xenograft models.

Voyager intends to further optimize this gene therapy approach in ongoing studies progressing towards application of a human therapeutic.

About HER2+ Brain Metastases

HER2+ breast cancer, or tumors that overexpress the HER2 growth receptor, account for approximately 20% of all breast cancers, and brain metastases are a major cause of mortality in up to 50% of HER2+ metastatic breast cancer patients. While approved anti-HER2 therapies are effective for peripheral disease, they have limited ability to reach the central nervous system in sufficient concentrations to treat brain metastases.

About the TRACER™ AAV Capsid Discovery Platform

Voyager's TRACER™ (Tropism Redirection of AAV by Cell-type-specific Expression of RNA) system is a broadly applicable, RNA-based functional screening platform that allows for rapid in vivo evolution of AAV capsids with enhanced tropisms and cell- and tissue-specific transduction properties in multiple species, including non-human primates (NHPs). Initial data from the first of many libraries screened in NHPs demonstrated the proprietary capsid variants effectively penetrated the blood-brain barrier and achieved widespread biodistribution and transduction of multiple regions of the brain. Separate results have demonstrated the ability of certain capsids to transduce cardiac muscle and to de-target the dorsal root ganglia. Voyager is proceeding with additional capsid campaigns derived from unique capsid serotypes to identify novel AAV vectors optimized for specific therapeutic

applications.

About Voyager Therapeutics

Voyager Therapeutics (Nasdaq: VYGR) is leading the next generation of AAV gene therapy to unlock the potential of the technology to treat devastating diseases. Proprietary capsids born from the Company's TRACER screening platform are powering a rich early-stage pipeline of new and second-generation programs and may elevate the field to overcome the limitations of conventional gene therapy vectors across neurologic disorders and other therapeutic areas. voyagertherapeutics.com [LinkedIn](#) [Twitter](#)

Voyager Therapeutics® is a registered trademark, and TRACER™ is a trademark, of Voyager Therapeutics, Inc.

Forward-Looking Statements

This press release contains forward-looking statements for the purposes of the safe harbor provisions under The Private Securities Litigation Reform Act of 1995 and other federal securities laws. The use of words such as "may," "might," "will," "would," "should," "expect," "plan," "anticipate," "believe," "estimate," "undoubtedly," "project," "intend," "future," "potential," or "continue," and other similar expressions are intended to identify forward-looking statements.

For example, all statements Voyager makes regarding Voyager's ability to continue to identify and develop proprietary capsids from its TRACER AAV screening platform; Voyager's ability to identify and develop proprietary capsids from its TRACER AAV screening platform with increased transgene expression, increased blood-brain barrier penetration and increased biodistribution compared to conventional AAV9 capsids; the initiation, timing, progress, activities, goals and reporting of results of its research and development programs; Voyager's ability to continue to develop preclinical data on its early pipeline programs relying upon its novel capsid discovery efforts; and Voyager's ability to utilize its novel proprietary capsids in its own product development programs are forward looking.

All forward-looking statements are based on estimates and assumptions by Voyager's management that, although Voyager believes such forward-looking statements to be reasonable, are inherently uncertain. All forward-looking statements are subject to risks and uncertainties that may cause actual results to differ materially from those that Voyager expected. Such risks and uncertainties include, among others, the severity and length of the COVID-19 health crisis; the continued development of Voyager's technology platforms, including Voyager's TRACER platform; the ability to initiate and conduct of preclinical studies in more advanced pre-clinical animal models; the ability to attract and retain talented contractors and employees; the ability to create and protect intellectual property; and the sufficiency of cash resources.

These statements are also subject to a number of material risks and uncertainties that are described in Voyager's most recent Annual Report on Form 10-K filed with the Securities and Exchange Commission, as updated by its subsequent filings with the Securities and Exchange Commission. All information in the press release is as of the date of this press release, and any forward-looking statement speaks only as of the date on which it was made. Voyager undertakes no obligation to publicly update or revise this information or any forward-looking statement, whether as a result of new information, future events or otherwise, except as required by law.

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Source: Voyager Therapeutics, Inc.