



Metagenomi Announces Publication in Nature Communications on Large Gene Integration Advances Using Novel, Compact CRISPR-associated transposase (CAST) Systems

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Achieved targeted integration of a large, therapeutically relevant gene into the genome of human cells with compact CAST system

AI-driven metagenomics platform facilitated discovery of CAST system with activity in human cells

Expression of the compact CAST system from a single 'all-in-one' mRNA design represents a first-in-class approach to simplifying delivery for therapeutic applications

Additional updates on further advancements in novel large gene integration technology anticipated in 2025

EMERYVILLE, Calif., March 13, 2025 (GLOBE NEWSWIRE) -- Metagenomi, Inc. (Nasdaq: MGX), a precision genetic medicines company committed to developing curative therapeutics for patients using its proprietary gene editing toolbox, today announced a publication in the journal [Nature Communications](#) describing its novel, compact CAST system for large, targeted gene integration into the human genome.

Metagenomi's CAST systems are a potential solution for development of curative genetic medicines, as these natural systems perform a task critical to the field of gene editing: precise, programmable integration of large gene cargoes. This technology has the potential to address a large collection of complex genetic diseases caused by any loss of function mutations, such as Wilson's disease, cystic fibrosis, and Duchenne Muscular Dystrophy. The newly published data demonstrates a first-in-class approach to precisely integrating therapeutic genes into the human genome, building on prior findings that established the potential of these systems.

Metagenomi's novel, compact Cas12k CAST system was discovered using the company's AI-driven metagenomics platform and translated to achieve programmable and targeted genomic integration in human cells. Metagenomi scientists demonstrated integration of multiple cargoes to a known safe-harbor site in the human genome, illustrating the site-specific, programmable, and versatile attributes of the system.

"These findings reinforce the potential of compact CAST systems to overcome key limitations in large gene integration, paving the way for precision genetic medicines," said Brian C. Thomas, PhD, CEO and founder of Metagenomi. "By discovering, translating, and simplifying our programmable CAST system to a single mRNA component to streamline delivery, we believe we are advancing the field toward more efficient and precise genomic integration - and overcoming limitations of other multi-component CAST systems. These achievements illustrate Metagenomi's ongoing focus on the field of large gene integration using CAST technology, and bring us a step closer to our goal of being able to rescript the human genome in any way needed to cure genetic disease."

The study highlights key advancements for the translation of CAST for therapeutic applications, including the ability to re-target to a safe-harbor site in the human genome, complete integration of a therapeutically-relevant gene, and streamline delivery using an 'all-in-one' mRNA. These findings provide new insights into large, targeted genomic integration approaches for the development of in vivo gene editing therapeutics. Future work will focus on expanding these capabilities and optimizing the system for clinical applications, with additional advancements expected in 2025.

About Metagenomi

Metagenomi is a precision genetic medicines company committed to developing curative therapeutics for patients using its AI-driven metagenomics platform. Metagenomi is harnessing the power of metagenomics, the study of genetic material recovered from the natural environment, to unlock four billion years of microbial evolution to discover and develop a suite of novel editing tools capable of correcting any type of genetic mutation found anywhere in the genome. Its comprehensive genome editing toolbox includes programmable nucleases, base editors, and RNA and DNA-mediated integration systems (including prime editing systems and clustered regularly interspaced short palindromic repeat associated transposases (CAST)). Metagenomi believes its proprietary, modular toolbox positions the company to access the entire genome and select the optimal tool to unlock the full potential of genome editing for patients. For more information, please visit <https://metagenomi.c>

Cautionary Note Regarding Forward-Looking Statements

This press release contains "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934, each as amended. Such statements, which are often indicated by terms such as "anticipate," "believe," "could," "estimate," "expect," "goal," "intend," "look forward to," "may," "plan," "potential," "predict," "project," "should," "will," "would" and similar expressions, include, but are not limited to, any statements relating to our plans related to our CAST system and gene editing capabilities, and any other statements that are not historical facts. Forward-looking statements are based on management's current expectations and are subject to risks and uncertainties that could negatively affect our business, operating results, financial condition, and stock value. Factors that could cause actual results to differ materially from those currently anticipated include: risks relating to our growth strategy; our ability to obtain, perform under, and maintain financing and strategic agreements and relationships; risks relating to the results of research and development activities; risks relating to the timing of starting and completing clinical trials; uncertainties relating to preclinical and clinical testing; our dependence on third party suppliers; our ability to attract, integrate and retain key personnel; the early stage of products under development; our need for substantial additional funds; government regulation; patent and intellectual property matters; competition; as well as other risks described in "Risk Factors," in our most recent Form 10-K and other risk factors set forth from time to time in our filings with the Securities and Exchange Commission made pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended. We expressly disclaim any obligation or undertaking to release publicly any updates or revisions to any forward-looking statements contained herein to reflect any change in our expectations or any changes in events, conditions or circumstances on which any such statement is based, except as required by law, and we claim the protection of the safe harbor for forward-looking statements contained in the Private Securities Litigation Reform Act of 1995.

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