# Biogen and Ginkgo Bioworks Announce Collaboration and License Agreement to Develop Novel Gene Therapy Manufacturing Platform

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- *Collaboration aims to develop a next-generation AAV production platform to help accelerate Biogen's efforts to bring novel gene therapies to patients worldwide*
- *Ginkgo's synthetic biology expertise may enable the expansion of therapeutic utility and overcome development challenges of viral vectors for gene therapy*
- *Ginkgo to receive $5 million upfront payment and is eligible for up to $115 million in potential research, development, and commercial milestones*

CAMBRIDGE, Mass. and BOSTON, May 21, 2021 (GLOBE NEWSWIRE) -- Biogen (Nasdaq: BIIB) and Ginkgo Bioworks today announced a gene therapy collaboration. Together, the companies aim to redefine the industry standard for manufacturing recombinant adeno-associated virus (AAV)-based vectors.

Recombinant AAV-based vectors are widely used to develop innovative gene therapies and have the potential to treat certain neurological and neuromuscular diseases as well as other conditions across multiple therapeutic areas. Currently, manufacturing is time-consuming and expensive making it difficult to develop therapies for diseases with high dose needs and with large patient populations. Ginkgo seeks to solve these challenges by applying its mammalian cell programming platform, with the aim to improve the efficiency of AAV-producing plasmid vectors and cell lines, which could accelerate Biogen's development of novel gene therapies.

"We believe that Ginkgo's unique combination of cell programming expertise, proprietary tools and knowledge of biological systems make them an ideal collaboration partner to explore a large number of design ideas with the goal of optimizing constructs," said Alphonse Galdes, Ph.D., Head of Pharmaceutical Operations and Technology at Biogen. "They share our goal of ensuring approved therapies are not delayed by manufacturing constraints and are available to patients worldwide."

"We are excited to collaborate with Biogen as they aim to develop treatments that may potentially slow, halt or cure neurological and neurodegenerative diseases and seek to enhance the industry standard for AAV manufacturing," said Jason Kelly, CEO of Ginkgo Bioworks. "Synthetic biology is leveraging the power of living cells to develop the next generation of therapeutics, everything from CAR-T, to CRISPR and gene therapies, which we believe will have a material impact on the lives of many."

Under the terms of the agreement, Biogen will receive access to Ginkgo's proprietary cell programming platform and capabilities. Ginkgo will utilize its bioengineering facilities and resources with the aim of enhancing the AAV production titers of Biogen's gene therapy manufacturing processes. Ginkgo will receive an upfront payment of $5 million and is eligible for milestone payments up to an additional $115 million should the collaboration programs achieve certain research, developmental and commercial milestones.

**About Biogen**
At Biogen, our mission is clear: we are pioneers in neuroscience. Biogen discovers, develops and delivers worldwide innovative therapies for people living with serious neurological and neurodegenerative diseases as well as related therapeutic adjacencies. One of the world's first global biotechnology companies, Biogen was founded in 1978 by Charles Weissmann, Heinz Schaller, Kenneth Murray and Nobel Prize winners Walter Gilbert and Phillip Sharp. Today Biogen has the leading portfolio of medicines to treat multiple sclerosis, has introduced the first approved treatment for spinal muscular atrophy, commercializes biosimilars of advanced biologics and is focused on advancing research programs in multiple sclerosis and neuroimmunology, Alzheimer's disease and dementia, neuromuscular disorders, movement disorders, ophthalmology, neuropsychiatry, immunology, acute neurology and neuropathic pain.

We routinely post information that may be important to investors on our website at www.biogen.com. Follow us on social media – Twitter, LinkedIn, Facebook, YouTube.

**About Ginkgo Bioworks**
Ginkgo is building a platform to program cells as easily as we can program computers. The company's platform is enabling the growth of biotechnology across diverse markets, from food and agriculture to industrial chemicals to pharmaceuticals. Ginkgo is also actively supporting a number of COVID-19 response efforts, including community testing, epidemiological tracing, vaccine development and therapeutics discovery. For more information, visit www.ginkgobioworks.com.

**Biogen Safe Harbor**
This news release contains forward-looking statements, including statements made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, relating to the potential benefits and results that may be achieved through Biogen's collaboration with Ginkgo Bioworks; the identification and treatment of neurological and neuromuscular diseases; Biogen's research and development programs; the potential benefits of gene therapy, including a gene therapy manufacturing platform; risks and uncertainties associated with drug development and commercialization; the potential of Biogen's commercial business and pipeline programs; and Biogen's strategy and plans, including related to gene therapy. These forward-looking statements may be accompanied by words such as "aim," "anticipate," "believe," "could," "estimate," "expect," "forecast," "intend," "may," "plan," "potential," "possible," "will," "would" and other words and terms of similar meaning. Drug development and commercialization involve a high degree of risk, and only a small number of research and development programs result in commercialization of a product. You should not place undue reliance on these statements or the scientific data presented.

These statements involve risks and uncertainties that could cause actual results to differ materially from those reflected in such statements, including, without limitation, uncertainty as to whether the anticipated benefits of the collaboration can be achieved; risks of unexpected costs or delays or other unexpected hurdles; uncertainty of success in the development of a gene therapy manufacturing platform, which may be impacted by, among other things, unexpected concerns that may arise from data or analysis, the occurrence of adverse safety events, failure to obtain regulatory approvals in certain jurisdictions, failure to protect and enforce data, intellectual property and other proprietary rights and uncertainties relating to intellectual

property claims and challenges; the direct and indirect impacts of the ongoing COVID-19 pandemic on Biogen's business, results of operations and financial condition; product liability claims; and third party collaboration risks. The foregoing sets forth many, but not all, of the factors that could cause actual results to differ from Biogen's expectations in any forward-looking statement. Investors should consider this cautionary statement as well as the risk factors identified in Biogen's most recent annual or quarterly report and in other reports Biogen has filed with the U.S. Securities and Exchange Commission. These statements are based on Biogen's current beliefs and expectations and speak only as of the date of this news release. Biogen does not undertake any obligation to publicly update any forward-looking statements, whether as a result of new information, future developments or otherwise.


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