Pfizer Logo

4D Molecular Therapeutics Announces Collaboration with Pfizer Inc. for Cardiac Gene Therapy Vector Discovery and Development

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Leader in proprietary gene therapy vector discovery closes fifth partnership

Emeryville, CA, Jan 7, 2016 — 4D Molecular Therapeutics (4DMT), a leader in Adeno-Associated Virus (AAV) gene therapy vector discovery and product development, today announced both an investment by and a collaboration and license agreement with Pfizer Inc. (NYSE: PFE) to discover and develop targeted and proprietary next-generation AAV vectors for cardiac disease indications with high unmet medical need. 4DMT will deploy its proprietary AAV vector discovery platform, Therapeutic Vector Evolution, to potentially identify and optimize novel gene delivery vectors for use in potential cardiac gene therapy products.

Key terms of the agreements include an equity investment by Pfizer, an upfront license payment to 4DMT and potential development and commercial milestone payments plus tiered royalties to 4DMT on net sales of any potential products that result from this collaboration. Pfizer has also committed to an additional investment in a future equity round subject to certain conditions. In conjunction with their equity investment, Pfizer received a seat on 4DMT's board of directors.

"This partnership with Pfizer is the fifth collaboration agreement announced by 4D in less than two years, including two with leading global pharmaceutical companies, and involving four different tissue and disease areas," said Dr. David Kirn, co-founder and CEO of 4DMT. "We're executing on our vision of creating a diverse and deep product pipeline with our partners, while progressing our own internal products toward clinical trials in parallel."

"In spite of considerable progress in our understanding of cardiovascular biology, heart disease continues to have a significant adverse effect upon health worldwide. Pfizer is committed to addressing this major medical need using new technologies as they become available, including the rapidly evolving toolkit of cardiac gene therapy," said Rod MacKenzie, Senior Vice President, Pharma Therapeutics Research & Development, Pfizer.

Dr. David Schaffer, co-founder and acting CSO of 4DMT, and Professor of Chemical and Biomolecular Engineering, Bioengineering and Neuroscience at the University of California, Berkeley, stated, "We believe that our Therapeutic Vector Evolution discovery platform is unlocking the full potential of gene therapy by solving the field's delivery problem, and Pfizer's support will help 4D to deliver on this promise."

About 4D Molecular Therapeutics
4DMT is focused on the discovery and development of targeted and proprietary AAV gene therapy vectors and therapeutic products. Our robust discovery platform, termed Therapeutic Vector Evolution, empowers us to

create customized gene delivery vehicles to deliver genes to any tissue or organ in the body, by optimal clinical routes of administration and with antibody evasion. These proprietary and targeted products allow us to treat both rare genetic diseases and complex large market diseases. 4D is creating a diverse and deep product pipeline through partnerships, while progressing internal 4D products toward clinical trials in parallel. 4D partners include: Pfizer (PFE), Roche (SIX: ROG; OTCQX: RHHBY), uniQure (QURE), AGTC and Benitec.

About 4DMT's Therapeutic Vector Evolution
Current clinical stage gene therapy products are based on AAV (Adeno-Associated Virus) viruses that are generally "wild-type" or primitive vectors, meaning they were found in nature as laboratory contaminants or as monkey infections. These first-generation AAV vectors, while generally safe and well-tolerated in patients, do not have optimized delivery properties and often require aggressive and/or invasive dosing to attempt the desired transduction of target cells. 4DMT is advancing the field of AAV vector technology by deploying principles of evolution and selection to create and isolate vectors that efficiently and selectively target the desired cells within the diseased human organ via clinically optimal routes of administration. Our Therapeutic Vector Evolution platform utilizes approximately 100 million unique AAV variants from proprietary 4DMT AAV libraries with unmatched diversity. 4DMT then applies proprietary methods to identify lead vectors that are highly optimized for a specific target cell and organ, route of therapeutic administration, and capacity to evade antibodies. The result is a customized, novel, and proprietary pharmaceutical-grade vector uniquely designed for therapeutic gene delivery in humans.

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Contact:
Investors
Peter Rahmer, 646-378-2973
prahmer@troutgroup.com

Media
Sharon Tetlow, 415-515-3902
stetlow@4dmoleculartherapeutics.com