Verve Therapeutics Founded to Protect Against Heart Disease Launches with $58.5 Million in Series A Funding Led by GV

May 7, 2019 3:00 PM EDT

Company to Develop Gene Editing Therapies to Permanently Reduce Risk of Coronary Artery Disease in Adults

Announces Key Licensing Agreements with the Broad Institute and Harvard University, and Collaboration Agreements with Beam Therapeutics and Verily

Leading Cardiologist and Geneticist Sekar Kathiresan, M.D., Named Chief Executive Officer

CAMBRIDGE, Mass. — May 7, 2019 — Verve Therapeutics, a next-generation cardiovascular company, today announced its launch to discover and develop therapies that safely edit the adult human genome to permanently reduce a person's risk of coronary artery disease, the most common form of heart disease and the leading cause of death worldwide. Verve brings together two of the biggest breakthroughs in 21st-century biomedicine — human genetic analysis and gene editing — to create a promising new treatment approach for adults at risk of coronary artery disease. The company was founded by a team of world-renowned researchers in cardiovascular genetics and pioneers of gene editing, including Sekar Kathiresan, M.D., Kiran Musunuru, M.D., Ph.D., MPH, and J. Keith Joung, M.D., Ph.D.

The $58.5 million Series A financing was led by GV (formerly Google Ventures), with participation from ARCH Venture Partners, F-Prime Capital, and Biomatics Capital. The funds raised will be used to advance the pre-clinical programs through proof-of-concept studies. The company has assembled a portfolio of key gene editing technologies, which includes a collaboration with Beam Therapeutics and license agreements with Harvard University and the Broad Institute of MIT and Harvard. Verve has also entered into a collaboration with Verily to develop and optimize nanoparticle formulations for therapeutic delivery.

Genetic research conducted by Verve's founders and others has identified healthy adults who carry naturally occurring gene variants that dramatically lower their lifetime risk of coronary artery disease and heart attacks. Verve is building on this research to develop gene editing therapies that confer lifelong protection in adults at risk of coronary artery disease.

All of the therapeutics to be developed by Verve involve making edits in adult (somatic) cells, which are not passed down to offspring.

"Coronary artery disease is a true pandemic and a growing health crisis," said Sekar Kathiresan, M.D., co-founder and incoming chief executive officer of Verve. "Our genetic understanding of coronary artery disease, combined with increasing sophistication of gene editing technologies, have aligned to create a transformative moment in the treatment of this disease. Verve was founded to turn the tide of coronary artery disease worldwide. Gene editing offers the possibility of introducing protective gene variants to adults at risk of the disease through a one-time therapy."

"New therapeutic approaches are needed to protect populations at risk of coronary artery disease," said Kiran Musunuru, M.D., Ph.D., MPH, co-founder and chief scientific advisor of Verve and associate professor of cardiovascular medicine and genetics at the Perelman School of Medicine at University of Pennsylvania. "Gene editing has the potential to completely transform the treatment paradigm for the disease. Preclinical studies conducted in the field, including work done in my lab, have shown the promise of gene editing to safely reduce cholesterol and other coronary artery disease risk factors."

Existing treatments to prevent coronary artery disease, including cholesterol-lowering statins and other therapies, face challenges due to poor adherence, high cost, and limited access to these medicines, especially in low- and middle-income countries, where more than 80 percent of deaths due to coronary artery disease occur.[1]

Gene editing technologies, including CRISPR nucleases and base editors, have the potential to change those outcomes. Accurate, directed gene edits within the adult liver could improve lifelong lipid and metabolic status and lower coronary artery disease risk. Preclinical studies already conducted by the company and its scientific founders have validated the potential efficacy of gene editing approaches to safely reduce coronary artery disease risk factors.

Verve will take a stepwise approach to clinical development, first taking aim at patients with life-threatening coronary artery disease and high unmet medical need. As the company establishes safety and efficacy, Verve will widen its clinical focus to include progressively larger patient populations at risk of coronary artery disease.

"Cholesterol-lowering treatments have been an important advance for many patients at risk of coronary artery disease," said Burt Adelman, M.D., co-founder and chairman of the board of Verve. "However, as the disease's prevalence rises in low- and middle-income countries, the current treatment model of daily pills or monthly injections over a lifetime must evolve if we are to effectively protect millions of people from disability or death due to coronary artery disease. Imagine if a single injection could permanently and safely prevent coronary disease. That's the singular goal that Verve will be pursuing."

Investors, Licenses and Collaborations

GV led the $58.5 million Series A financing. Also participating in the round are ARCH Venture Partners, F-Prime Capital, and Biomatics Capital.

"Verve is taking an unparalleled approach to the prevention of coronary artery disease by leveraging two of the most important scientific breakthroughs of the last decade – human genetics and genome editing," said Krishna Yeshwant, M.D., general partner at GV and board member of Verve. "Verve is founded by a truly exceptional team of experts in human genetics, genome editing, and drug delivery and development. The company has broad potential to address the number one leading cause of death in the world unlike anything we've seen before."

Verve launches with key intellectual property agreements in place. The company has licensed foundational CRISPR patents, including Cas9 and Cas12a (Cpf1), from the Broad Institute and Harvard University for human therapeutic applications against certain cardiovascular targets.

Verve has also entered into a strategic collaboration with Beam Therapeutics under which Verve will receive exclusive access to Beam's base editing, gene editing, and delivery technologies for human therapeutic applications against certain cardiovascular targets. (Beam was itself launched around technologies developed at Harvard and the Broad Institute.) After the completion of Phase 1 studies, Beam has the ability to participate in future development and commercialization, and share 50 percent of U.S. profits and losses, for any product directed against these targets. The parties will also collaborate on the development of novel delivery technologies. In addition, Verve has partnered with Verily with the goal of leveraging Verily's unique nanoparticle screening platform to develop and optimize new gene editing delivery vehicles.

"In both its science and its ethos, Verve makes a natural partner for us at Beam," said John Evans, chief executive officer of Beam Therapeutics and board member of Verve. "We are excited to contribute in addressing this important public health need."

Leadership, Founders and Board

Sekar Kathiresan has been named as Verve's chief executive officer and is expected to assume his role starting in July, 2019. He will also join Verve's board of directors. Biotech veteran Andrew Ashe, J.D., has been appointed president and chief operating officer.

Kathiresan is a preventive cardiologist who has made groundbreaking discoveries of cardioprotective genetic mutations, which confer resistance to cardiovascular disease. He is currently director of the Center for Genomic Medicine at Massachusetts General Hospital (MGH), co-director of the Program in Medical and Population Genetics at the Broad Institute, and professor of medicine at Harvard Medical School. In tandem with his research, his clinical focus is the primary prevention of myocardial infarction in individuals with a family history of heart attack. Upon assuming his role as CEO of Verve, he will be stepping down from his academic responsibilities at the Broad Institute, MGH and Harvard.

Ashe is an accomplished biotech executive with over 20 years of experience in operations and legal management. Prior to joining Verve, he served as a senior executive and general counsel for several biotech companies, including Applied Genetic Technologies Corporation and Dyax Corp.

In addition to Sekar Kathiresan and Andrew Ashe, Verve has a founding team of world-leading experts in cardiovascular medicine and patient care, cardiovascular genetics, gene editing delivery technology and safety, drug development, and company building. Members of the founding team will serve in an advisory capacity to the company.

- **Burt Adelman, M.D., Chairman of the Board**
  Former Executive Vice President of R&D, Biogen; former Executive Vice President of R&D and Chief Medical Officer, Dyax
- **Barry Ticho, M.D., Ph.D., Board Member**
  Chief Medical Officer, Stoke Therapeutics
- **Krishna Yeshwant, M.D., MBA, Board Member**
  General Partner, GV
- **Anthony Philippakis, M.D., Ph.D., Strategic Advisor and Board Member**
  Chief Data Officer, Broad Institute; Venture Partner, GV
- **John Evans, MBA, Board Member**
  Chief Executive Officer, Beam Therapeutics; Venture Partner, ARCH Venture Partners
- **Jessica Alston, Ph.D., Board Observer**
  Principal, F-Prime Capital
- **Boris Nikolic, M.D., Board Observer**
  Co-Founder and Managing Director, Biomatics Capital
- **Kiran Musunuru, M.D., Ph.D., MPH, Chief Scientific Advisor**
  Associate Professor of Cardiovascular Medicine and Genetics, Perelman School of Medicine, University of Pennsylvania
- **Keith Joung, M.D., Ph.D., Strategic Advisor**
  Pathologist and Desmond and Ann Heathwood Research Scholar, Massachusetts General Hospital; Professor of Pathology, Harvard Medical School; Co-Founder, Editas Medicine and Beam Therapeutics
- **Issi Rozen, MBA, Strategic Advisor**
  Chief Business Officer, Broad Institute

The company also benefits from a scientific advisory board with unparalleled expertise in cardiovascular medicine and in the development of groundbreaking therapies.

- **Eugene Braunwald, M.D.**
  Cardiologist, Brigham and Women's Hospital (BWH); Distinguished Hersey Professor of Medicine, Harvard Medical School; former Chair of Medicine, BWH; founding Chief Academic Officer, Partners Healthcare
- **Penny M. Heaton, M.D.**
  Chief Executive Officer, Bill & Melinda Gates Medical Research Institute
- **Daniel J. Rader, M.D.**
  Seymour Gray Professor of Molecular Medicine, Perelman School of Medicine, University of Pennsylvania

About Verve Therapeutics

Verve Therapeutics is a biotechnology company created with a singular focus: to protect the world from heart disease. Verve is developing therapies to safely edit the genome of adults and confer lifelong protection from coronary artery disease, the most common form of heart disease and the leading cause of death worldwide. Founded by world-leading experts in cardiovascular medicine and gene editing, Verve is backed by a top-tier syndicate of investors, including GV (formerly Google Ventures), ARCH Venture Partners, F-Prime Capital, and Biomatics Capital. Verve is headquartered in Cambridge, Massachusetts, and has a research lab located at Pennovation Works, the University of Pennsylvania incubator space in Philadelphia. For more information, visit www.VerveTx.com.

References

[1] Finegold JA, Asaria P, Francis DP. Mortality from ischaemic heart disease by country, region, and age: statistics from World Health Organization and United Nations. *Int J Cardiol*. 2013;168(2):934-45.

Media Contact

Lisa Raffensperger, (617) 903-8783
Ten Bridge Communications
lisa@tenbridgecommunications.com