



PureTech's Karuna Appoints Steven Paul, MD, as Chief Executive Officer

August 15, 2018

Former President of Lilly Research Laboratories and Co-founder of Sage and Voyager brings decades of neuroscience and CNS drug development experience

PureTech Health plc (LSE: PRTC) ("PureTech Health"), a clinical-stage biopharmaceutical company developing novel medicines for dysfunctions of the Brain-Immune-Gut (BIG), today announced the appointment of Steven Paul, MD, as Chief Executive Officer of its affiliate, Karuna Pharmaceuticals, Inc. ("Karuna"). Co-founder of Karuna and former PureTech Health Vice President, Andrew Miller, PhD, will assume the role of Chief Operating Officer at Karuna.

Dr Paul, who also serves as Chairman of the Karuna Board, brings more than three decades of neuroscience and central nervous system (CNS) drug development expertise to Karuna. Previously, he spent 17 years at Eli Lilly and Company (NYSE: LLY), in which he held several key leadership roles, including Executive Vice President for Science and Technology and President of the Lilly Research Laboratories. He is also a Co-founder and Board Member of Sage Therapeutics (NASDAQ: SAGE), and a Co-founder of Voyager Therapeutics (NASDAQ: VYGR).

Daphne Zohar, Co-founder and Chief Executive Officer of PureTech Health, said: "Steve is an accomplished leader in neuroscience drug development with unique expertise successfully advancing the development of important CNS medicines. As one of the scientists involved in the original xanomeline work at Lilly, he was very helpful to us when we launched this programme. We are delighted to welcome him as Chief Executive Officer of Karuna and believe he will be instrumental in advancing KarXT through the clinic as a potential first-in-class treatment for psychosis and cognitive impairments in serious CNS disorders. We also thank Andrew for his innovative vision, dedication and leadership as a co-founder and inventor of the exciting programme at Karuna and look forward to his continued contributions as Chief Operating Officer."

The full text of the announcement from Karuna is as follows:

Karuna Appoints Seasoned Biopharma Veteran Steven Paul, MD, As Chief Executive Officer

Former President of Lilly Research Laboratories and Co-founder of Sage and Voyager brings proven track record in neuroscience drug development

Karuna founder, Andrew Miller, PhD, to serve as Chief Operating Officer

BOSTON, August 15, 2018 — [Karuna Pharmaceuticals](#), Inc. ("Karuna"), focused on targeting muscarinic cholinergic receptors for the treatment of neuropsychiatric disorders marked by psychosis and cognitive impairment, today announced the appointment of Steven Paul, MD, as Chief Executive Officer, effective August 15. Founder, Andrew Miller, PhD, is a member of the board and will assume the role of Chief Operating Officer.

"As the lead inventor of Karuna's lead programme KarXT, Andrew has been essential in both creating and executing on the vision for Karuna, and I thank him for bringing the company to this point where it is —positioned for immense growth," said Dr Paul. "Targeting muscarinic receptors is one of the most promising approaches to treating both the psychosis and cognitive impairment that characterise many disabling neuropsychiatric disorders, including schizophrenia and Alzheimer's disease, where there is a profound need for more effective treatments. Having been one of the scientists involved in the original work on xanomeline at Lilly, I am excited by the progress that Karuna has made to unlock this important new class of therapeutics. I am looking forward to helping Karuna become a leader in the field and believe in the potential for KarXT to be the first antipsychotic drug with a truly novel mechanism in over 60 years. We are also excited by recent preclinical work suggesting that KarXT may be an effective non-opiate treatment for pain."

"I worked closely with Steve at Sage Therapeutics and his experience and creativity in the field is rare," said Robert Nelsen, Managing Director of ARCH Venture Partners, and Board Member at Karuna. "KarXT's potential to meet unmet patient need is exciting and Steve's experience is perfectly aligned to support Karuna's goal of delivering first-in-class drugs for treating psychosis, cognitive impairment, and pain."

Dr Paul, who also serves as Chairman of the Karuna Board, is an expert in central nervous system (CNS) drug discovery and development. He spent 17 years at Eli Lilly and Company (NYSE: LLY), during which time he held several key leadership roles, including Executive Vice President for Science and Technology and President of the Lilly Research Laboratories, where he was responsible for the Company's overall research and development efforts for CNS drugs such as Zyprexa® and Cymbalta®. At Lilly, Dr Paul also helped oversee the development of xanomeline where its antipsychotic and procognitive properties were initially demonstrated. Prior to Lilly, Steve spent 18 years at the National Institute of Health (NIH) and served as the Scientific Director of the National Institute of Mental Health (NIMH). Dr Paul is a Co-founder and Board Member of Sage Therapeutics (NASDAQ: SAGE), a Co-founder of Voyager Therapeutics (NASDAQ: VYGR) where he served as President, Chief Executive Officer, and member of the Board of Directors, and a member of the Board of Directors at Alnylam Pharmaceuticals (NASDAQ: ALNY). Dr Paul is the former Director of the Appel Alzheimer Disease Research Institute at Weill Cornell Medical College and is currently an Adjunct Professor of Psychiatry at Washington University of St Louis School of Medicine.

Dr Paul has authored or co-authored more than 550 papers and book chapters. He is an elected fellow of the American Association for the Advancement of Science and a member of the National Academy of Medicine (NAM) of the National Academy of Sciences (NAS). He is also an elected fellow of the American College of Neuropsychopharmacology (ACNP) and served as ACNP President (1999). Dr Paul is the Chairman of the Board of the Foundation for the NIH (FNIH) and previously served on the Science Board of the US Food and Drug Administration (FDA) in addition to serving on many other advisory committees and receiving many awards and honors for his work in neuropsychiatry.

"We have made significant progress in the development of our lead product candidate, KarXT, and we are thrilled to have Steve at the helm as we advance into a Phase 2 trial in schizophrenia in the third quarter," said Dr Miller. "Steve has an extensive track record of successfully advancing the R&D activities of novel molecular entities for CNS disorders, having led efforts from discovery through commercialisation for blockbuster treatments. His expertise will be immensely valuable as we drive Karuna forward."

About Karuna Pharmaceuticals

Karuna is a clinical-stage drug development company targeting muscarinic cholinergic receptors for the treatment of psychosis and cognitive impairment across central nervous system (CNS) disorders, including schizophrenia and Alzheimer's disease, as well as neuropathic pain. Karuna's lead product candidate, [KarXT](#), consists of xanomeline, a novel muscarinic acetylcholine receptor agonist that has demonstrated efficacy in placebo-controlled human trials in schizophrenia and Alzheimer's disease, and trospium chloride, an FDA-approved and well-established muscarinic receptor antagonist that has been shown not to enter the central nervous system (CNS). Karuna has demonstrated improved tolerability of KarXT vs. xanomeline alone in a placebo-controlled human study and is currently conducting a Phase 1 trial using a proprietary co-formulation of xanomeline and trospium chloride. A Phase 2 trial of safety and efficacy in people with schizophrenia is expected to begin in the third quarter of 2018. Karuna, which was founded by [PureTech Health](#) (LSE: PRTC), has a worldwide exclusive license for xanomeline and has a patent portfolio more broadly covering selective muscarinic targeting enabled by the KarXT approach. For more information, visit www.karunapharma.com.

About PureTech Health

PureTech Health (LSE: PRTC) is an advanced, clinical-stage biopharmaceutical company developing novel medicines for dysfunctions of the Brain-Immune-Gut (BIG). The Company has developed deep insight into the connection between these systems and the resulting role in many chronic diseases, which represent the majority of healthcare spend and have proven resistant to established therapeutic approaches. By harnessing this emerging field of human biology, PureTech Health has developed new categories of medicines with the potential to have great impact on people with serious diseases.

PureTech Health is advancing a rich pipeline of innovative therapies across two divisions. Its Affiliates division includes two product candidates that are preparing for potential regulatory approval in the United States and Europe and a number of clinical and pre-clinical programmes. These affiliates have developed ground-breaking platforms and therapeutic candidates in collaboration with some of the world's leading scientific experts.

PureTech's Internal division (Ariya) is advancing a pipeline fuelled by recent discoveries in lymphatics and immune cell trafficking to modulate disease in a tissue-specific manner. These programmes build on a new understanding of the transport and biodistribution of various immune system components in order to develop targeted therapies for diseases with major unmet needs including cancer and autoimmune and neuroimmune disorders. One of these programmes, which is focused on the oral administration of nucleic acids and other biologics using milk exosomes, is being advanced in collaboration with Roche for the potential application across their antisense oligonucleotides platform.

For more information, visit www.puretechhealth.com or connect with us on Twitter [@puretechh](https://twitter.com/puretechh).

Forward Looking Statement

This press release contains statements that are or may be forward-looking statements, including statements that relate to the company's future prospects, developments and strategies. The forward-looking statements are based on current expectations and are subject to known and unknown risks and uncertainties that could cause actual results, performance and achievements to differ materially from current expectations, including, but not limited to, those risks and uncertainties described in the risk factors included in the regulatory filings for PureTech Health plc. These forward-looking statements are based on assumptions regarding the present and future business strategies of the company and the environment in which it will operate in the future. Each forward-looking statement speaks only as at the date of this press release. Except as required by law and regulatory requirements, neither the company nor any other party intends to update or revise these forward-looking statements, whether as a result of new information, future events or otherwise.