



Karuna Bolsters Research and Development Team

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BOSTON--([BUSINESS WIRE](#))--[Karuna Pharmaceuticals, Inc.](#) ("Karuna"), focused on targeting muscarinic cholinergic receptors for the treatment of neuropsychiatric disorders marked by psychosis and cognitive impairment, as well as pain, today announced the appointment of Christian (Chris) Felder, Ph.D. to vice president of discovery research and the promotion of Giorgio Attardo, Ph.D. to vice president of chemistry, manufacturing and controls (CMC) and preclinical development.

"Chris and Giorgio are leading key aspects of our research and development functions and contribute immensely to the further exploration of Karuna's lead product candidate, [KarXT](#), for treating psychosis and cognitive impairment in schizophrenia and Alzheimer's disease, as well as the further development and expansion of our muscarinic pipeline," said Steve Paul, M.D., chairman and chief executive officer. "With more than 30 years of experience leading research and drug development projects focused on novel approaches for the treatment of psychiatric and neurological disorders, Chris was instrumental in the early development of xanomeline at Eli Lilly & Co. His rich neurologic and psychiatric drug discovery experience will be valuable as we advance and expand our pipeline. Giorgio, too, has three decades of experience heading the discovery and development of numerous therapeutic and diagnostic drug candidates, progressing over twenty compounds into CNS and oncology clinical trials. We plan to leverage their combined and complimentary expertise as we investigate additional formulations and treatment indications for KarXT, and further expand our pipeline by exploring other exciting muscarinic receptor targets and molecules with unique pharmacology to best leverage their therapeutic potential for patients."

Dr. Felder is an expert in G protein-coupled receptors (GPCRs), especially muscarinic receptors. He began his research career as faculty at Georgetown University, developed his neuroscience background over 10 years at the National Institute of Mental Health (NIMH) followed by 21 years of research and management experience at Eli Lilly & Co. His drug discovery expertise, which has focused primarily on muscarinic receptors, will be particularly valuable to Karuna's R&D efforts.

Dr. Felder received his Ph.D. in 1987 in the Department of Biochemistry at Georgetown University School of Medicine. He joined NIMH in Bethesda, MD as a staff fellow in 1987 and completed his postdoctoral training in the laboratory of Nobel prize winner, Dr. Julius Axelrod. He remained at the NIMH as head of the Unit on Cell and Molecular Signaling where his lab focused on the molecular mechanisms of neurotransmitter action and their role in neuropsychiatric diseases. In 1997, he joined the Neuroscience Division at Eli Lilly & Co. in Indianapolis, IN and has held both research and management positions in the US and UK. Dr. Felder is a visiting lecturer at the University of Virginia School of Medicine, and an adjunct professor at Monash University, in Melbourne, Australia. He has co-authored over 160 original publications, reviews and book chapters, organized 21 scientific symposia, mentored over 60 students and post docs, and has been invited to speak at numerous international symposiums and universities.

Dr. Attardo received his Ph.D. from McGill University in 1991. His doctorate and industrial postdoctoral research at BioChem Pharma focused on the design, synthesis and preclinical development of novel oncolytics. He is an inventor on more than 65 patents and patent applications and has co-authored over 40 publications and 60 conference presentations.

Dr. Attardo joined Karuna in May 2018. Prior to joining Karuna, he was vice president at Avid Radiopharmaceuticals, a subsidiary of Eli Lilly & Co., where he delivered several CNS imaging agents for exploratory clinical trials and completed the non-clinical development of Flortaucipir, a first in class PET imaging agent for tau. Before joining Eli Lilly & Co., Dr. Attardo held positions of increasing responsibility in CNS and oncology as senior director at both Chlorion Pharma and Gemin X Pharmaceuticals. His R&D efforts at Gemin X provided two oncology drug candidates, Obatoclox and Teglarinad, which were pivotal assets in the acquisition of Gemin X by Cephalon. Prior to Gemin X, Dr. Attardo was associate director of chemistry at BioChem Pharma and Shire Pharmaceuticals.

About KarXT

[KarXT](#) (Karuna-Xanomeline-Trospium), Karuna's lead product candidate for the treatment of psychosis in schizophrenia, consists of xanomeline, a novel muscarinic acetylcholine receptor agonist that has demonstrated clinical activity 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). KarXT is designed to selectively target M1/M4 muscarinic receptors in the brain while inhibiting their stimulation in peripheral tissues in order to improve tolerability as compared to xanomeline alone. Karuna has completed two Phase 1 clinical trials which demonstrated a clinically meaningful reduction in side effects compared to xanomeline and that KarXT is well tolerated in healthy volunteers. A proprietary co-formulation of xanomeline and trospium in a single capsule was used in the second Phase 1 clinical trial and is now being evaluated in an ongoing Phase 2 clinical trial in patients with schizophrenia experiencing acute psychosis. Top-line data from this trial are anticipated by the end of 2019.

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 pain. Karuna's lead product candidate, [KarXT](#) (Karuna-Xanomeline-Trospium) is being evaluated in a Phase 2 clinical trial in patients with schizophrenia experiencing acute psychosis, with top-line results anticipated at the end of 2019. 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.

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