



## **KarXT, invented at PureTech, submitted for FDA Approval in Schizophrenia**

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### **KarXT, invented at PureTech, submitted for FDA Approval in Schizophrenia**

*Founded Entity Karuna Therapeutics submits New Drug Application to U.S. Food and Drug Administration for KarXT for the treatment of schizophrenia*

*If approved, KarXT will be the first new mechanism in over 50 years for patients living with schizophrenia*

[PureTech Health plc](#) (Nasdaq: PRTC, LSE: PRTC) ("PureTech" or the "Company"), a clinical-stage biotherapeutics company, noted today that its Founded Entity, Karuna Therapeutics, Inc. (Nasdaq: KRTX) ("Karuna") announced the submission of a New Drug Application (NDA) to the U.S. Food and Drug Administration (FDA) for KarXT (xanomeline-trospium) for the treatment of schizophrenia.

"We are thrilled to note this additional exciting milestone from the KarXT program, following the achievement of three successful, registration enabling studies in schizophrenia. KarXT, which was invented at PureTech, showcases how we invent and advance novel medicines by giving new life to drugs that have validated pharmacology but had previously not reached patients due to an issue that is now addressable with our innovations. This NDA submission is also an important milestone for patients, as it could represent the first major advance for treating schizophrenia in over 50 years if approved by the FDA," said Eric Elenko, Chief Innovation Officer at PureTech.

The NDA submission is supported by efficacy and long-term safety data from the EMERGENT program, the clinical program evaluating KarXT as a treatment for schizophrenia. The EMERGENT program includes the three completed positive EMERGENT-1, EMERGENT-2, and EMERGENT-3 trials evaluating the efficacy and safety of KarXT compared to placebo, and the ongoing EMERGENT-4 and EMERGENT-5 trials evaluating the long-term safety of KarXT. In all three placebo-controlled trials, KarXT met its primary endpoint, demonstrating a statistically significant and clinically meaningful reduction in Positive and Negative Syndrome Scale (PANSS) total score compared to placebo. KarXT also demonstrated reductions in both positive and negative symptoms of schizophrenia as measured by PANSS positive, PANSS negative, and PANSS negative Marder factor subscales, which were secondary endpoints in the trials.

As a founder of Karuna and co-inventor of the KarXT program, PureTech retains an equity ownership and has rights to receive milestone payments upon the achievement of certain regulatory approvals and 20% of sublicense income.<sup>1</sup>

If approved, KarXT will be the third therapeutic candidate to be taken from inception at PureTech to FDA regulatory approval.

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

#### **Karuna Therapeutics Submits New Drug Application to U.S. Food and Drug Administration for KarXT for the Treatment of Schizophrenia**

*KarXT, a dual M1/M4 muscarinic agonist, represents the first new mechanism of action to treat schizophrenia in several decades, if approved*

*Submission is supported by data from three positive registrational trials demonstrating consistent and robust*

## *reductions of schizophrenia symptoms*

Karuna Therapeutics, Inc. (NASDAQ: KRTX), a biopharmaceutical company driven to discover, develop, and deliver transformative medicines for people living with psychiatric and neurological conditions, today announced the submission of a New Drug Application (NDA) to the U.S. Food and Drug Administration (FDA) for KarXT (xanomeline-trospium) for the treatment of schizophrenia.

"Schizophrenia is a serious mental illness that affects how one thinks, feels, and behaves, with symptoms often appearing in patients in early adulthood, during the prime years of their lives," said Bill Meury, president and chief executive officer of Karuna Therapeutics. "While current therapies have made a difference for many patients, they are not without limitations due to lack of full symptom relief or side effects that may lead to treatment discontinuation. KarXT, if approved, will represent the first novel pharmacological approach to treating schizophrenia in several decades and provide a new treatment option for patients and their physicians."

"The NDA submission represents an important step toward helping patients in need. It is also a defining moment for Karuna Therapeutics. It represents the culmination of years of pre-clinical and clinical development, and a great deal of skill and hard work by our R&D organization. Our priorities over the next year are the regulatory review process, our ongoing development efforts, and building the platform to introduce KarXT to the medical community. I believe we are uniquely positioned to make a positive impact on how neuropsychiatric conditions are treated," Meury added.

The NDA submission is supported by efficacy and long-term safety data from the EMERGENT program, the clinical program evaluating KarXT as a treatment for schizophrenia. The EMERGENT program includes the three completed positive EMERGENT-1, EMERGENT-2, and EMERGENT-3 trials evaluating the efficacy and safety of KarXT compared to placebo, and the ongoing EMERGENT-4 and EMERGENT-5 trials evaluating the long-term safety of KarXT. In all three placebo-controlled trials, KarXT met its primary endpoint, demonstrating a statistically significant and clinically meaningful reduction in Positive and Negative Syndrome Scale (PANSS) total score compared to placebo. KarXT also demonstrated reductions in both positive and negative symptoms of schizophrenia as measured by PANSS positive, PANSS negative, and PANSS negative Marder factor subscales, which were secondary endpoints in the trials.

KarXT was found to be generally well-tolerated, with the most common adverse events being cholinergic in nature and rated mild to moderate in severity. Discontinuation rates due to treatment emergent adverse events were low and similar between KarXT and placebo across all trials. Notably, KarXT was not associated with common side effects of currently available antipsychotics, including changes in metabolic function, weight gain, somnolence, and extrapyramidal symptoms.

### **About KarXT**

KarXT (xanomeline-trospium) is an investigational muscarinic antipsychotic in development for the treatment of schizophrenia and psychosis related to Alzheimer's disease. Through its novel mechanism of action, KarXT acts as a dual M1/M4 muscarinic acetylcholine receptor agonist in the central nervous system, which is thought to mediate positive, negative, and cognitive symptoms of schizophrenia. Unlike existing treatments, KarXT does not directly block dopamine receptors, representing a potential new approach to treating schizophrenia.

### **About Schizophrenia**

Schizophrenia is a persistent and often disabling mental illness impacting how a person thinks, feels, and behaves, and affects nearly 24 million people worldwide, including 2.8 million people in the U.S. It is characterized by three symptom domains: positive symptoms (hallucinations and delusions), negative symptoms (difficulty enjoying life and withdrawal from others), and cognitive impairment (deficits in memory, concentration, and decision-making). In part due to limitations with current treatments, people living with schizophrenia often struggle to maintain employment, live independently, and manage relationships. While current treatments can be effective in managing select symptoms, approximately 30% of people do not respond to therapy, with an additional 50% experiencing only a partial improvement in symptoms or unacceptable side effects.

### **About Karuna**

Karuna Therapeutics is a biopharmaceutical company driven to discover, develop, and deliver transformative medicines for people living with psychiatric and neurological conditions. At Karuna, we understand there is a need for differentiated and more effective treatments that can help patients navigate the challenges presented by serious mental illness. Utilizing our extensive knowledge of neuroscience, we are harnessing the untapped potential of the brain in pursuit of novel pathways to develop medicines that make meaningful differences in peoples' lives. For more information, please visit [www.karunatx.com](http://www.karunatx.com).

## **About PureTech Health**

PureTech is a clinical-stage biotherapeutics company dedicated to giving life to new classes of medicine to change the lives of patients with devastating diseases. The Company has created a broad and deep pipeline through its experienced research and development team and its extensive network of scientists, clinicians and industry leaders that is being advanced both internally and through its Founded Entities. PureTech's R&D engine has resulted in the development of 27 therapeutics and therapeutic candidates, including two (Plenity® and EndeavorRx®) that have received both US FDA clearance and European marketing authorization and a third (KarXT) that has been filed for FDA approval. A number of these programs are being advanced by PureTech or its Founded Entities in various indications and stages of clinical development, including registration enabling studies. All of the underlying programs and platforms that resulted in this pipeline of therapeutic candidates were initially identified or discovered and then advanced by the PureTech team through key validation points.

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

<sup>1</sup>As of July 31, 2023, PureTech's percentage ownership of Karuna was approximately 2.8% on an outstanding voting share basis. As of March 22, 2023, PureTech has sold its right to receive a 3% royalty from Karuna to Royalty Pharma on net sales up to \$2 billion annually, after which threshold PureTech will receive 67% of the royalty payments and Royalty Pharma will receive 33%. PureTech retains its equity ownership in Karuna. Additionally, under its license agreement with Karuna, PureTech retains the right to receive milestone payments upon the achievement of certain regulatory approvals and 20% of sublicense income.

## **Cautionary Note Regarding Forward-Looking Statements**

This press release contains statements that are or may be forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements contained in this press release that do not relate to matters of historical fact should be considered forward-looking statements, including without limitation those related to submission of a New Drug Application (NDA) to the U.S. Food and Drug Administration (FDA) for KarXT (xanomeline-trospium) for the treatment of schizophrenia and Karuna's and PureTech's future prospects, developments and strategies. The forward-looking statements are based on current expectations and are subject to known and unknown risks, uncertainties and other important factors that could cause actual results, performance and achievements to differ materially from current expectations, including, but not limited to, those risks, uncertainties and other important factors described under the caption "Risk Factors" in our Annual Report on Form 20-F for the year ended December 31, 2022 filed with the SEC and in our other regulatory filings. 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, we disclaim any obligation to update or revise these forward-looking statements, whether as a result of new information, future events or otherwise.

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