Krystal Biotech Announces First Patient Dosed in Phase 3 Clinical Trial of KB803 for the Treatment and Prevention of Corneal Abrasions in Patients with Dystrophic Epidermolysis Bullosa

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Intra-patient, double-blind, multicenter, placebo-controlled study with crossover design

Repeat administration under compassionate use was previously shown to be well tolerated and associated with full corneal healing by 3 months as well as significant visual acuity improvement from hand motion to 20/25 at 8 months

PITTSBURGH, June 24, 2025 (GLOBE NEWSWIRE) -- Krystal Biotech, Inc. (the "Company") (NASDAQ: KRYS) announced today that the first patient has been dosed in its Phase 3 clinical trial ("IOLITE"), an intra-patient, double-blind, multicenter, placebo-controlled study with crossover design evaluating KB803 for the treatment and prevention of corneal abrasions in dystrophic epidermolysis bullosa (DEB) patients. KB803 is designed to deliver two copies of the *COL7A1* transgene to the corneal epithelium and enable local type VII collagen production in the front of the eye.

"The initiation of IOLITE is another important step for Krystal as we work tirelessly to treat DEB as comprehensively as possible," said Suma Krishnan, President, Research & Development, Krystal Biotech, Inc. "With dramatic and durable improvements already reported for the patient treated under compassionate use, we are excited by the potential of KB803 to restore full eye function and reduce or eliminate the otherwise persistent threat of vision loss imposed by these recurring corneal abrasions."

Over 25% of DEB patients are thought to suffer from ocular complications of the disease, including over 50% of patients with the recessive form of DEB (RDEB). The estimated number of DEB patients affected exceeds 750 in the United States and 2,000 worldwide. There are no corrective therapies available to the treatment or prevention of ocular complications associated with DEB. Current disease management is limited to supportive wound care and in some cases surgical interventions to remove scar tissue.

IOLITE Phase 3 Study

IOLITE is an intra-patient, double-blind, placebo-controlled, multicenter Phase 3 study with a crossover design to evaluate KB803, administered as an eye drop, for the treatment and prevention of corneal abrasions in DEB patients, 6 months of age or older. Patients seeking to participate in IOLITE must first enroll in the ongoing natural history study and complete a 12-week run-in period, during which they report the number of days that they experience symptoms of corneal abrasions. Subjects meeting the inclusion criteria following the 12-week run-in are eligible to participate in the IOLITE trial.

Approximately 16 subjects will be enrolled in the IOLITE study. The sample size was calculated based on the average symptomatic days per month and standard deviation data from subjects enrolled in the natural history study who would be otherwise eligible for IOLITE and provides 90% power to detect an effect size of at least 25%, allowing for a dropout rate up to 20%. Enrolled patients will initially receive either a single eye drop of either placebo or KB803, at a concentration of 10^9 PFU/mL, to each eye once weekly for 12 weeks. At the conclusion of the first 12 weeks, patients will be switched from placebo to KB803, or vice versa, and continue with once weekly administration for a second 12 week period. IOLITE is designed as a decentralized study and drug administration will occur at the subject's home by a healthcare provider.

The primary study endpoint will be the change in the average number of days per month with corneal abrasion symptoms while receiving KB803 versus placebo. Statistical significance will be analyzed via intra-patient paired measurements to account for potentially expected high inter-patient variability. Safety and secondary efficacy data, including weekly assessments of eye pain and monthly Epidermolysis Bullosa Eye Disease Index (EB-EDI) questionnaires, will be collected through to the end of the 24-week study period. More details of the IOLITE study can be found at www.clinicaltrials.gov under NCT identifier NCT07016750.

Ongoing Natural History Study

48 DEB patients have been enrolled in the ongoing natural history study. 39 of the 48 subjects (81%) have RDEB and the remaining have the dominant form of DEB (DDEB). The average number of days per month with corneal abrasion symptoms reported by RDEB and DDEB subjects were 5.9 and 2.2 days, respectively.

Previous Compassionate Use Case

Beremagene geperpavec-svdt (B-VEC) had previously been applied to the eye of one DEB patient under a compassionate use protocol. The clinical observations of this compassionate use case were published in the New England Journal of Medicine in February 2024. The patient presented with severe cicatrizing conjunctivitis secondary to DEB. Surgical symblepharon lysis of the patient's right eye with pannus removal was conducted and regular B-VEC administration as an eye drop directly to the eye, at a concentration of ~10^9 PFU/mL, were added to routine post-surgical care. Treatment was well tolerated with no drug-related adverse events noted. Full corneal healing was observed at three months, as well as significant visual acuity improvement from hand motion to 20/25 by eight months.

About KB803

KB803 is a redosable, eye drop gene therapy designed to deliver two copies of the *COL7A1* transgene to the epithelial cells in a patient's eye for the treatment and prevention of corneal abrasions in DEB patients. The goal of therapy with KB803 is to address the fundamental disease-causing mechanism at the molecular level, by providing the patient's epithelial cells of the eye with the template to make normal type VII collagen locally. In a DEB patient treated under compassionate use with clinical observations reported the New England Journal of Medicine, regular eye drop administration was well tolerated with full corneal healing observed at three months, as well as significant visual acuity improvement from hand motion to 20/25 by eight months.

About Krystal Biotech, Inc.

Krystal Biotech, Inc. (NASDAQ: KRYS) is a fully integrated, commercial-stage, global biotechnology company focused on the discovery, development and commercialization of genetic medicines to treat diseases with high unmet medical needs. VYJUVEK®, the Company's first commercial product, is the first-ever redosable gene therapy and the first genetic medicine approved by the FDA and EMA for the treatment of dystrophic epidermolysis bullosa. The Company is rapidly advancing a robust preclinical and clinical pipeline of investigational genetic medicines in respiratory, oncology, dermatology, ophthalmology, and aesthetics. Krystal Biotech is headquartered in Pittsburgh, Pennsylvania. For more information, please visit http://www.krystalbio.com, and follow @KrystalBiotech on LinkedIn and X (formerly Twitter).

Forward-Looking Statements

Any statements in this press release about future expectations, plans and prospects for Krystal Biotech, Inc., including statements about the potential of KB803 to restore full eye function and reduce or eliminate the otherwise persistent threat of vision loss imposed by recurring corneal abrasions associated with DEB; the Company's expectations (i) that over 25% of DEB patients suffer from ocular complications, including over 50% of patients with RDEB and (ii) of the number of DEB patients suffering from ocular complications in the United States and worldwide; the Company's IOLITE study, including the Company's plans to enroll approximately 16 subjects; and other statements containing the words "anticipate," "believe," "estimate," "expect," "intend," "may," "plan," "predict," "project," "target," "potential," "likely," "will," "would," "could," "should," "continue," and similar expressions, constitute forward-looking statements within the meaning of The Private Securities Litigation Reform Act of 1995. Actual results may differ materially from those indicated by such forward-looking statements as a result of various important factors, including uncertainties inherent in the initiation and conduct of clinical trials, as well as regulatory review of clinical trials and applications for marketing approvals; and such other important factors as are set forth under the caption "Risk Factors" in the Company's annual and quarterly reports on file with the U.S. Securities and Exchange Commission. The forward-looking statements included in this press release represent the Company's views as of the date of this press release. The Company anticipates that subsequent events and developments will cause its views to change. However, while the Company may elect to update these forward-looking statements at some point in the future, it specifically disclaims any obligation to do so. These forward-looking statements should not be relied upon as representing the Company's views as of any date subsequent to the date of this press release.

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