



Focus | Overview

Our goal is to make a meaningful difference in the lives of underserved patient with skin diseases. We work to accomplish this goal through scientific innovation and "nature operates in the shortest way possible" (Aristotle).

Krystal Biotech, Inc. is a clinical-stage gene therapy company using its proprietary platform to develop effective and innovative treatments for skin diseases. While developing intradermal "off-the-shelf" novel therapies for rare and orphan dermatological conditions, we are leveraging our pioneering STAR-D technology to target and treat other skin conditions as well.

Our Approach

Platform

Viral gene therapy platform for dermatology

We are leveraging the advantageous properties of type 1 herpes simplex virus (HSV-1) affinity for skin cells, to develop a safe viral gene therapy platform adapted for dermal administration. This platform is suited for a topical route of administration, allowing for non-invasive treatment of the skin.

Programs

Initial focus on orphan diseases

Our initial products are directed to the treatment of monogenic and congenital skin diseases, including epidermolysis bullosa (EB) and autosomal recessive congenital ichthyosis (ARCI).

EB is an incurable, often fatal skin blistering condition caused by mutations in the COL7 gene, a protein that provides critical structural adhesion between skin layers in the basement membrane. B-VEC ("B-VEC", previously "KB103"), a replication-defective, non-integrating viral gene therapy platform, is Krystal's lead product candidate currently being evaluated in a planned phase III clinical trial. B-VEC has been engineered to deliver wild-type HSV-1 (thus, functional COL7 protein) directly to a EB patient's dividing and non-dividing skin cells, thus correcting the underlying genetic deficiency to stabilize the patient's otherwise fragile skin.

ARCI is a life-long, severe genetic skin disease that often results in marked scaling and skin fragility.

epidermal barrier, leading to pronounced dehydration, transepidermal exposure microorganisms, and a greatly increased risk of infection. While a number of genes with the development of ARCI, the most common cause of ARCI is an inactivating transglutaminase-1, a protein that is essential for the proper formation of the skin product candidate that is being tested in an ongoing phase I/II clinical trial. This project type human TGM1 genes into the skin of ARCI patients, allowing for the treatment of this patient population.

Expansion

Expanding beyond rare and orphan diseases

In addition to our work developing novel treatments for rare, orphan skin diseases, we are leveraging our expertise and viral gene therapy platform to explore new therapeutic approaches and indications, including non-monogenic diseases and diseases not caused by inherited factors.

Manufacturing

Bringing all stages of the manufacturing process in-house affords us a number of advantages, including ensuring robust virus production and the highest quality of purified drug product; being able to rapidly institute process improvements identified by our Chemistry, Manufacturing, and Controls (CMC) teams; optimizing our internal production requirements; and avoiding the high demand for gene therapy services from third-party Contract Manufacturing Organizations (CMOs), safeguarding against delays.

Construction of Ancoris, a new state-of-the-art Good Manufacturing Practice (GMP) facility in Pittsburgh, is complete. The 4,500 square foot facility has been designed to meet all manufacturing requirements for commercial development of B-VEC and the high quality commercial production for biopharmaceutical use. The Ancoris facility will be the primary manufacturing site for the projected commercial demand for B-VEC.

A ground breaking ceremony for our second commercial gene therapy facility, named Findley, was held in 2020 in Findley-Township, Pennsylvania. The Findley-based facility is being designed as a Commercial Manufacturing Practice (cGMP) manufacturing facility that, beyond expanding Krystal's manufacturing capabilities, will allow the in-house incorporation of raw material preparation, excipient manufacturing, and distribution, fully-integrating all components of the supply chain from starting materials to finished product. The Findley facility will initially be used as a commercial back up facility for B-VEC, which is used for the treatment of dystrophic epidermolysis bullosa, a rare and devastating skin disorder, and other commercial material for our pipeline products.

Quick Links

- [Focus](#)
- [Patients and Families](#)
- [Medical Professionals](#)
- [Team](#)
- [Investors](#)
- [Contact](#)



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