

AVELLINO TECHNOLOGY PLATFORMS

Overview

Avellino Labs leverages genetic big data and algorithms, collaborating with best-in-class partners to create genetic tests, gene-editing therapies, and genetic analytics for specialty diagnostics and personalized medicine.

Technology Platforms

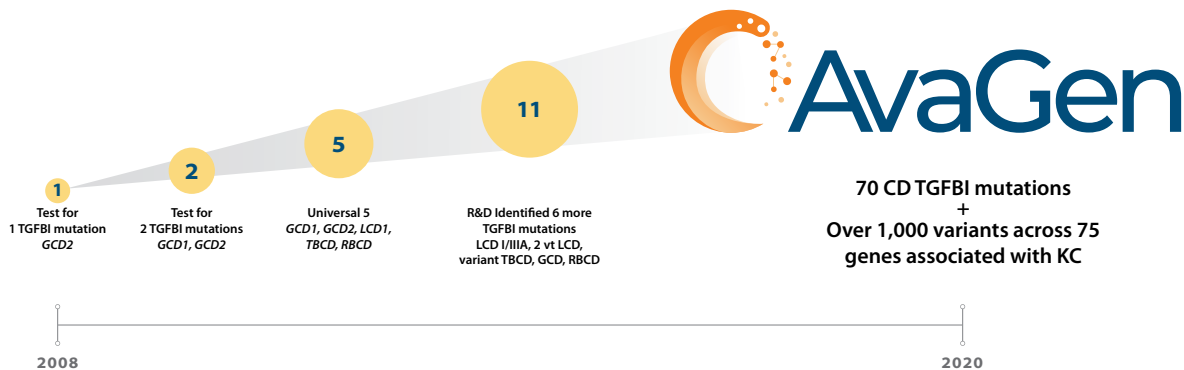
Avellino's technology uses multiple platforms, each targeted towards high-quality results and clinical data. For the AvellinoCoV2 test, Avellino utilizes reverse transcriptase Real-Time Polymerase Chain Reaction (rRT-PCR) to create viral RNA-based genetic tests capable of providing a wide range of diagnostic, predictive, and therapy-related applications. The AvaGen test utilizes next-generation sequencing (NGS) in order to successfully meet the complexities of testing for a multigenic disease like keratoconus. Avellino's model ensures that the genetic data is and remains the basis for development and a continual confirmation tool for the success of all resulting therapies. The company is building one of the world's largest genetic databases and a suite of genetic diagnostics that will be able to guide diagnosis and treatment for billions of people in the next decade.

Technology Platforms in Product Use & Development

Prior to the rapid development of the AvellinoCoV2 test for COVID-19, the company had commercialized two genetic tests from their increasingly large gene database. These were first-of-their-kind tests in vision care, and the first to be able to predict and diagnose previously undiagnosed sight-threatening corneal diseases.

Avellino AvaGen Test

- The test was the result of 10 years of research and development and is the first and only next-generation sequencing (NGS) test that combines corneal dystrophy (CD) testing and Keratoconus (KC) risk scores
- Utilizes a custom gene panel and next-generation sequencing (NGS) platform to detect rare variants integral to the etiology of complex multifactorial diseases, such as keratoconus and the presence of corneal dystrophies
- Tests for more than 70 mutations within the Transforming Growth Factor Beta-Induced (TGFBI) gene that result in various corneal dystrophies, and over 1,000 variants across 75 genes associated with keratoconus



To date, Avellino has tested over 770,000 patients for Corneal Dystrophy.

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Technology Platforms in Product Use and Development

Avellino Universal Test

- Detects 5 transforming growth factor beta-induced (TGFBI) mutations that are responsible for the 5 most common corneal dystrophies: Granular Corneal Dystrophies, including type 1 (GCD1), Granular Corneal Dystrophy type 2 (GCD2), Lattice Corneal Dystrophy type 1 (LCD1), Reis-Bucklers Corneal Dystrophy (RBCD), and Thiel Behnke Corneal Dystrophy (TBCD)

AvellinoCoV2 Coronavirus Test

- RNA-based genetic test that confirms the presence of COVID-19, whether with or without symptoms, with accuracy and precision
- The etiological and technological components of AvellinoCoV2 were revised and confirmed entirely in Avellino's high-complexity CLIA laboratory
- This included discovering that only two targets within the N-gene were necessary for the detection of the disease, notwithstanding the CDC's original protocol requiring the identification of three targets

Future Platform Expansion

Avellino will continue to expand clinical and research access to our first-in-class genetic tests and therapies as well as our genetic database to drive drug development and personalized medicine diagnostic and therapeutic solutions. This includes continued expansion of our existing genetic diagnostics solutions for corneal dystrophies, keratoconus, and infectious disease detection. Avellino's near-term technology focus is to:

- Continue developing tests for rare ophthalmic diseases that can lead to vision loss;
- Introduce first-in-class genetic diagnostics, gene therapies, and genetic data to the existing standards of clinical care in precision medicine across a range of specialties; and
- Accelerate the pace of research and development for more effective therapeutics at lower costs



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