See how NGS technology is enabling the future of personalized medicine

Genenius Genetics in San Diego is using next-generation sequencing to improve disease detection

Introduction

Next-generation sequencing (NGS) is a cost-effective and flexible method for sequencing the entire human genome within 1–2 days. Whole-genome sequencing (WGS) is pioneering more effective ways of identifying inherited disorders, characterizing the genetic mutations that drive cancer progression, and tracking outbreaks of disease. Leveraging these technologies, a biotech startup in San Diego, California is using the Invitrogen™ Collibri™ PS DNA Library Prep Kit for Illumina™ systems to generate reliable and consistent data that is critical to forming trusted genetic insights.

Aaron Zhang-Chen is the CEO of Genenius Genetics Inc., a biotech startup focusing on innovating genomics and genetics technology to provide actionable insight serving global health. Dr. Zhang-Chen earned his PhD with honors at KUMC in 2010. He conducted his post-doctoral research as an NIH fellow under Dr. Rosenfeld at UCSD/HHMI, and then as a Helmsley fellow under Dr. O'Shea at the Salk Institute/HHMI. In 2014, he joined Pathway Genomics, where he served as a manager of bioinformatics and principal scientist of R&D prior to founding Genenius Genetics.

Q and A

Thermo Fisher Scientific: What is the mission of Genenius Genetics?

Dr. Aaron Zhang-Chen: We want to innovate genomic and genetic technologies to provide insights that are actionable and preventative with regard to global health.

Thermo Fisher: Why did you choose this area of human health?

Zhang-Chen: We believe that one of the areas of human health where we can make a huge and proactive impact is prevention. We want to help people receive early cancer detection and diagnosis.

Thermo Fisher: How has the development of NGS technology advanced your work?

Zhang-Chen: The latest development of NGS technology has allowed us to develop genetic testing products that will offer actionable and preventative insights and strategies to customers at an affordable price.

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Thermo Fisher: What role does whole-genome sequencing (WGS) play for your research?

Zhang-Chen: At Genenius Genetics, we use WGS data to develop the technology for our multicancer early-detection product.

Thermo Fisher: What are the key challenges you face in your research?

Zhang-Chen: Getting consistent and reproducible WGS data.

> "When we compared several kits on the market, the Collibri kit gave us the most reproducible data in terms of GC bias and reads mappability. Our lab associate loved the color coding, which makes the entire process even more error-proof."

Thermo Fisher: Why did you choose the Collibri PS DNA Library Prep Kit for Illumina systems?

Zhang-Chen: When we compared several kits on the market, the Collibri kit gave us the most reproducible data in terms of GC bias and reads mappability. Our lab associate loved the color coding, which makes the entire process even more error-proof.

Collibri PS DNA Library Prep Kits reduce potential for error in the library preparation process. Kits are available in PCR-free or amplified format and offer unique dual indexes for use with patterned flow cells.

Thermo Fisher: Have you seen any improvement in your experiments or research with the use of this prep kit?

Zhang-Chen: This kit has helped reduce the error rate in the lab process. The success rate of the library prep with a tiny amount of DNA input (<1 ng) has significantly improved our efficiencies.

Thermo Fisher: Where do you see Genenius Genetics in three years?

Zhang-Chen: We plan to establish our own CAP/CLIA-accredited laboratory in San Diego, so that we can offer preventative genetic tests and pancancer early-detection products to customers.

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Find out more at **thermofisher.com/collibrigenius**

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