

FBI Approves Thermo Fisher Scientific Forensic Sequencing Solution for National DNA Index System

Decision enables human identification labs to upload genetic profiles to national database using Applied Biosystems Precision ID panel for mitochondrial DNA analysis

SAN FRANCISCO, July 9, 2019 /PRNewswire/ -- The U.S. Federal Bureau of Investigation (FBI) has approved Thermo Fisher Scientific's Applied Biosystems Precision ID System mtDNA analysis solution for use by forensic laboratories to generate mitochondrial DNA (mtDNA) profiles for submission to the U.S. National DNA Index System (NDIS) CODIS database. The use of mtDNA in forensics over the past several decades has played a pivotal role in helping to solve missing person cases and identification of remains recovered from mass disasters.

Due to its high copy number per cell, mtDNA is the primary testing method for forensic laboratories that routinely analyze extremely challenging samples, such as decades-old bone fragments, teeth and other human remains. While the methodology has proven useful to help close missing person cases, for example, profiles derived from next-generation sequencing (NGS)-based platforms could not be uploaded to the national database until recently. Approval of the panel now provides laboratories with the ability to analyze the most challenging missing persons and criminal casework samples while providing the greatest level of discrimination through whole mtDNA genome analysis.

The Precision ID mtDNA Whole Genome Panel is part of a NGS-based system that includes the Ion GeneStudio S5 System, the Ion Chef System for automated library and template generation, as well as forensically relevant Precision ID panels for mtDNA analysis. The Precision ID mtDNA panels give forensic DNA laboratories the ability to detect variation within noncoding control region sequences using as little as 2 pg of DNA.

The end to end solution also includes the Applied Biosystems Converge Software NGS Data Analysis module, which automates mitochondrial DNA analysis by leveraging optimized base calling, phylogenetically guided alignment and quality filtering algorithms.

"The Precision ID System for mtDNA analysis offers excellent sensitivity for both sample quality and quantity," said Rosy Lee, vice president and general manager of Human Identification for Thermo Fisher Scientific. "Traditional methods for mtDNA analysis can be time-consuming and expensive. With the NDIS approval of Precision ID System, forensic scientists can now maximize the potential of this forensic genetic marker."

Learn more at www.thermofisher.com/hid-ngs

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