

Standard for Training in Forensic Human Mitochondrial DNA Analysis, Interpretation, Comparison, Statistical Evaluation, and Reporting



WHAT IS AN AAFS STANDARD FACTSHEET?

The AAFS produces clear, concise, and easy-to-understand factsheets to summarize the contents of technical and professional forensic science standards on the OSAC Registry. They are not intended to provide an interpretation for any portion of a published standard.

WHAT IS THE PURPOSE OF THIS STANDARD?

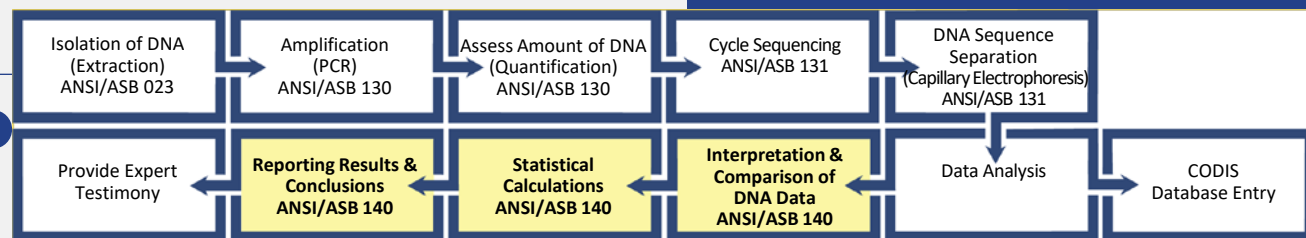
DNA (mtDNA) testing is especially useful in identifying unidentified human remains as well as in cases involving hair evidence. The mtDNA testing involves a sequential series of required steps. The general steps for generating DNA sequence data are outlined in the diagram below. This standard describes the framework for training that will result in quality and consistency for mtDNA analysis, interpretation, comparison, statistical evaluation, and reporting of mtDNA sequence results.

Comprehensive and documented personnel training prior to conducting any testing in a case is required to ensure quality and consistency in the testing, conclusions derived, and communication of the mtDNA test results.

WHY IS THIS STANDARD IMPORTANT? WHAT ARE ITS BENEFITS?

This standard provides requirements for training personnel in the analysis, interpretation, comparison, statistical evaluation and reporting of mitochondrial DNA sequence results obtained using capillary electrophoresis.

Proper training in these steps of the DNA testing process provides a foundation for appropriate communication of DNA test results to the stakeholders in the criminal justice system.



HOW IS THIS STANDARD USED, AND WHAT ARE THE KEY ELEMENTS?

The standard details requirements for training personnel in forensic human mitochondrial DNA analysis, interpretation, comparison, statistical evaluation, and reporting. The requirements address 1) specific knowledge-based training regarding the fundamental scientific principles, methods, and limitations as well as training and review of applicable validation studies, including supporting literature; 2) practical training; and 3) knowledge-based and practical competency assessment of that training.

This standard is intended to be used in conjunction with [ANSI/ASB 022, 1st Ed., 2019](#), which provides the overall scope and framework for the training program for all personnel who will be performing forensic DNA testing and includes the requirement that all training is documented and retained by the forensic science service provider (FSSP). This standard is one in a series of standards that span all aspects of training for DNA testing and communication (see the individual boxes in the diagram).

This is a standard of practice. Additional training beyond that required in the standard may be necessary depending on the testing assays used and the types of evidence tested.