



The author(s) shown below used Federal funding provided by the U.S. Department of Justice to prepare the following resource:

Document Title: Rapid DNA Crime Scene Sample Multi-Laboratory Evaluation Project

Author(s): Douglas R. Hares

Document Number: 310016

Date Received: January 2025

Award Number: DJO-NIJ-21-RO-0004

This resource has not been published by the U.S. Department of Justice. This resource is being made publicly available through the Office of Justice Programs' National Criminal Justice Reference Service.

Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

Project Title: Rapid DNA Crime Scene Sample Multi-Laboratory Evaluation Project

Award Recipient Organization: Federal Bureau of Investigation

Principle Investigator: Douglas R. Hares

NIJ Award Number: DJO-NIJ-21-RO-0004

Project Period: 9/29/2021 – 9/28/2024

Award Amount: \$475,000

Rapid DNA Crime Scene Sample Multi-Laboratory Evaluation Project Summary:

The collaborative multi-laboratory study plan was designed to test the enhanced Rapid DNA technology outlined in (FSI-Genetics 48 (2020) 102349) for potential use on forensic samples for CODIS. The study included six external laboratories (in addition to FBI/NIST) for each of the two Rapid DNA manufacturers and was designed to test the end-to-end Rapid DNA forensic sample analysis process of the instrumentation. The analysis process was baselined for each manufacturer with the extraction of test samples containing known DNA quantities determined through cell counting. The two main objectives of this study were to determine the limitations of the enhanced technology through sensitivity and mixture studies and to determine any variability between instruments of the same manufacturer. Pre-commercial products were purchased from each manufacturer for the study. The FBI coordinated the study and partnered with NIST for sample creation and data analysis. The results from this study can assist laboratories in validating these new enhanced Rapid DNA cartridges for forensic sample use by making informed decisions about their internal validations and interpretation procedures for modified Rapid DNA analysis.

Products:

Data from the multi-laboratory evaluation was presented to SWGDAM in January 2024 to consider developing Quality Assurance Standards for the use on Rapid DNA on forensic samples for CODIS. This data is available in the two manufacturer independent publications below:

<https://doi.org/10.1016/j.fsir.2024.100395>

<https://doi.org/10.1016/j.fsir.2024.100396>