



AMERICAN SOCIETY OF CRIME LABORATORY DIRECTORS, INC.

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November 24, 2020

ASCLD Position Statement on Non-CODIS Application of Rapid DNA on Crime Scene and Disaster Victim Identification Samples

The American Society of Crime Laboratory Directors (ASCLD) supports the Federal Bureau of Investigation's (FBI) [Non-CODIS Rapid DNA Considerations and Best Practices for Law Enforcement Use](#)¹ document for use of Rapid DNA with crime scene samples. This document supersedes the November 2017 ASCLD Position Statement on Rapid DNA.

Background

Rapid DNA refers to the fast, almost entirely automated processing and analysis of DNA samples, which has already demonstrated utility in Disaster Victim Identification and analysis of known reference samples. Although Rapid DNA instruments are not approved for direct CODIS entry and searching of crime scene evidence samples, there are uses for the technology in a non-CODIS environment that may provide fast identification and investigative leads. Rapid DNA instruments can process single source crime scene samples (no mixtures) for comparison to known reference standards, other crime scene samples, or searched in an agency database or mirrored copies of the state databases with permission from the database owner(s) and in accordance with state and federal laws. The reduced timeline for data generated by Rapid DNA instrumentation provides an opportunity for increased public safety through quick identification of individuals.

Position

ASCLD supports the responsible use of Rapid DNA testing of crime scene samples with the support of an accredited crime laboratory. We recommend that investigators work with Forensic Science Service Providers and consult

¹ Non-CODIS Rapid DNA Best Practices/Outreach and Courtroom Considerations Task Group, *Non-CODIS Rapid DNA Considerations and Best Practices for Law Enforcement Use*, 9-16-2019, <https://www.fbi.gov/file-repository/non-codis-rapid-dna-best-practices-092419.pdf/view>.

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with prosecutors to determine whether it is appropriate to use Rapid DNA technology for investigative leads on crime scene DNA samples.

Users must be aware that Rapid DNA is not as sensitive as traditional methods and cannot resolve samples with more than one contributor. In order to realize the benefits of utilizing identification information early in the investigative process and maintain the ability for future testing and CODIS searching, the collection of duplicate samples is highly recommended: one for analysis with the Rapid DNA instrument and one for traditional DNA testing methods at the laboratory for confirmatory analysis. Field personnel should be trained in appropriate collection techniques of duplicate samples. However Rapid DNA is used, care must be taken to ensure that there is sufficient sample remaining to also test the samples in an accredited laboratory using existing infrastructure to access CODIS and provide expert review, quality control measures and testimony.

Please refer to ASCLD's Rapid DNA Overview – August 2020 document (attached)



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Rapid DNA Overview – August 2020

Rapid DNA refers to the fast, almost entirely automated processing and analysis of DNA samples, which has demonstrated utility in Disaster Victim Identification and analysis of known reference samples. A potential use of Rapid DNA includes processing single source crime scene samples to be searched in databases for fast identification and to provide investigative leads. There are currently two different platforms available, but both operate using similar methods with similar abilities and limitations.

1) Can Rapid DNA develop DNA profiles consistent with traditional DNA testing in forensic laboratories in under two hours?

- **Can** generate DNA profiles from the same sample sources used for traditional STR DNA testing, e.g. saliva, blood, semen, skin cells, tissue and bone, when there is sufficient sample and only one contributor.
- **Cannot** generate a profile equivalent to traditional DNA testing if an insufficient amount of DNA is present (i.e. a small spot of blood). Rapid DNA instruments are currently less sensitive than traditional DNA tests.
- **Cannot** generate a reliable profile from a mixture of two or more contributors without extensive validation and the inclusion of a fully qualified DNA analyst.
- **Comment 1:** Some samples require a preparatory step prior to DNA testing (bone samples and swabs from a sexual assault sample where the victim's DNA is expected to be present and could be mixed with the semen from the suspect).
- **Comment 2:** The entire sample should not be used for the Rapid DNA testing. Only a portion of a sample should be used for Rapid DNA to allow for future traditional testing and retesting when appropriate. The primary sample should be preserved for analysis in an accredited forensic DNA laboratory. Any portion placed into the Rapid DNA instrument should be considered consumed, as it may not be able to be retested depending upon the instrument and sample type.
- **Comment 3:** The success rates of Rapid DNA can be improved if a qualified DNA Analyst performs Modified Rapid DNA Analysis on samples which are flagged by the instrument's internal expert system.

2) Can Rapid DNA be used at crime scenes?

- **Can** be used on single contributor crime scene samples to obtain DNA profile(s) for comparison to an individual or to a DNA profile from a reference standard or another crime scene sample.
- **Can** search unknown single contributor DNA profiles from crime scene evidence against an agency database, local databases, or mirrored copies of the state databases with permission from the database owner(s).
- **Can** compare a single contributor DNA profile generated at a crime scene by a Rapid DNA instrument to a profile generated by a traditional DNA testing process.
- **Can** be operated at a crime scene or mass fatality site for Disaster Victim Identification.
- **Cannot** deconvolute a mixed DNA profile without extensive validation prior to use and the inclusion of a fully qualified DNA analyst.

- **Comment 1:** The FBI has developed “Best Practices” for use of Rapid DNA with crime scene samples: <https://www.fbi.gov/file-repository/non-codis-rapid-dna-best-practices-092419.pdf/view>
- **Comment 2:** With admissibility of Rapid DNA still pending in most jurisdictions, samples from crime scenes can be analyzed for “investigative purposes” by Rapid DNA instruments with duplicate samples collected for traditional DNA testing methods at the laboratory for confirmatory analysis. DNA results can be available for law enforcement much earlier in the investigation using Rapid DNA technology.
- **Comment 3:** Prior to use with crime scene samples, it is recommended to perform a validation study using the same sample types. This will help to establish guidelines such as the most appropriate sample types and the recommended amount of sample of each sample type for testing. See <https://www.sciencedirect.com/science/article/pii/S1872497320301228?dgcid=author> for detailed discussion.

3) Can DNA profiles obtained from a Rapid DNA instrument be uploaded to and searched in a DNA Database?

- **Can** be used in an accredited forensic laboratory for upload into CODIS for convicted offender and/or arrestee reference standards (in states that allow arrestee collection).
- **Can** create an agency database that is not connected to the state database in any way and must comply with state DNA laws.
- **Can** search single contributor profiles against an agency database, local databases, or mirrored copies of the state databases with permission from the database owner(s).
- **Cannot** be used at police or booking stations to run crime scene or suspect samples for upload into or searching of CODIS.
- **Cannot** be used in an accredited forensic laboratory to upload profiles from crime scene evidence into CODIS at any level.
- **Comment:** After completion of the pilot project and upon approval by the FBI, **can** be used at booking stations for direct upload of reference samples into CODIS

4) Can Rapid DNA be used in forensic laboratories for testing of evidence samples?

- **Can** be validated in a forensic laboratory and with proper protocols used in casework although resulting profiles cannot be entered into CODIS at this time.
- **Comment 1:** Admissibility of Rapid DNA technology is still pending in most states. Until Rapid DNA has passed a Daubert/Frye hearing, retention of additional samples for traditional DNA testing is recommended.
- **Comment 2:** Limited samples may not have enough DNA present to generate a profile and traditional testing should be utilized in these cases, as it has greater sensitivity.

5) Can Rapid DNA be used in Disaster Victim Identification or Unidentified Human Remains cases?

- **Can** be used to match DNA profiles from victims to reference standards of family members for identification purposes.
- **Cannot** upload DNA profiles generated by Rapid DNA instruments from unidentified victims into CODIS at any level.