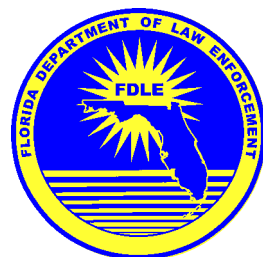




DNA (deoxyribonucleic acid) is the “building blocks of life.” It contains the coding information for the formation and function of an organism. In humans, over 95% of DNA is the same - coding for common characteristics such as two arms, two legs, etc. The remaining regions of DNA vary from person to person. Some of these regions code for physical characteristics such as eye and hair color. There are also areas of extreme variations between individuals that do not code for physical characteristics. These highly variable regions are of specific interest to the forensic community because they are used to distinguish between individuals.

STR (short tandem repeats) DNA testing examines thirteen different areas (markers) of DNA that have been found to be highly variable. These thirteen markers have been standardized in the United States to allow the comparison of testing results from one state to another.



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**Forensic Laboratory
and the
DNA Investigative
Support Database**

Forensic Laboratory - DNA/Serology



Casework in the forensic laboratory consists of identifying biological stains such as blood, semen, and saliva on pieces of evidence submitted by law enforcement agencies throughout the state. Typical items



of evidence include clothing, sexual assault evidence kits, liquid blood samples, dried blood stains, knives, guns, bed linens, etc.

Once a stain is identified, STR (short tandem repeats) DNA (deoxyribonucleic acid) testing is performed both on the questioned item and on standard samples from persons that may be involved in the case (typically suspects and victims). The results from the questioned stains are compared to the results of the standard samples to determine who could, or could not, be the donor of those stains.



DNA results can be used in a trial where the analyst will testify regarding the DNA match and its statistical significance. The results of a stain from a case are also submitted to the CODIS (Combined DNA Index System) to

be searched against local, state, and national casework index files and convicted offender profiles in the state and national databases.

Successful DNA Results

The power of DNA analysis is evident in the following rape cases involving an individual named James Stengel. In 1993, Stengel was caught and convicted through DNA testing for a rape in Orlando. Due to his qualifying conviction (Sexual Battery), his blood was collected and entered into the FDLE DNA Investigative Support Database. Shortly after entry into the database, his DNA profile was matched with evidence from a 1991 unresolved rape case in Miami. The subsequent news coverage surrounding this first "Case to Offender" match to the FDLE DNA Database led to another victim stepping forward and identifying Stengel as the rapist in a 1991 unresolved case that occurred in Palm Beach. Stengel is currently serving a 25 year prison sentence. This case is one of the many success stories based on DNA analysis.



DNA Investigative Support Database

In 1989, the FDLE DNA Investigative Support Database was created through Chapter 943.325, Florida Statutes. The law requires individuals convicted of certain enumerated offenses to submit a DNA sample to the FDLE DNA Database. The law further requires DNA analysis to be performed on each sample and the results of these analyses be stored in an "automated personal identification system capable of, but not limited to, classifying, matching, and storing" such analyses. The analysis results allow the comparison of DNA from unresolved cases to the DNA of both known offenders and that from other unresolved or resolved cases in an attempt to identify the perpetrator.

The DNA Database accepts DNA samples from individuals convicted of the following felony offenses, as mandated by the noted Florida Statutes:

- Chapter 800: Lewdness; Indecent Exposure
- Chapter 794: Sexual Battery
- Chapter 787: Kidnapping
- Chapter 812: Theft, Robbery & Related Crimes
- Chapter 790: Felony Firearms Violations
- Chapter 776.08: Forcible Felonies
- 784.045 Aggravated Battery
- 782.04 Murder
- 782.07 Manslaughter
- 810.02 Burglary
- 825.102(2) Aggravated Abuse of Elderly/ or Disabled Adult
- 827.03(2) Aggravated Abuse of a Child



Florida is part of the FBI's national DNA identification index system known as CODIS. This system allows state and local law enforcement agencies' crime laboratories to store and compare DNA records from convicted offenders and crime scene evidence with that of other state DNA databases.

The FDLE DNA Database has experienced a great deal of success since it began collecting samples in 1990. Currently, Florida has aided law enforcement in over 5,131 investigations.

The Florida Department of Law Enforcement provides oral swab collection kits to the sheriffs and county jails, the Department of Corrections, the Department of Juvenile Justice, and other criminal justice agencies.

