

Forensic DNA Testing

State-of-the-Art Crime Fighter

Breakdown of CODIS Hits for LASD

Year	Cold Hits	Case-to-Case Hits
Before 2001	3	1
2001	6	1
2002	9	4
2003	29	18
2004 (through November)	44	15
Total	91	39

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The Scientific Services Bureau (Crime Lab) has been at the forefront of deoxyribonucleic (DNA) testing since DNA first gained widespread acceptance in forensic science and law enforcement. In 1999, the Crime Lab was the first in the state to introduce this state-of-the-art technology to perform "13-loci STR-DNA testing" which is used in the national databases. Short Tandem Repeat (STR) testing looks at regions of the DNA molecule that tend to repeat themselves in short, adjacent, or tandem segments. It can use low quality, small quantity DNA and has a very high degree of discrimination among random individuals. This powerful technology has become the primary forensic tool available to law enforcement in solving crimes. In the past, DNA was predominately a tool used to investigate crimes, but now databases, such as the Combined DNA Indexing System (CODIS), allow DNA to actually solve cases by identifying suspects and freeing the wrongly accused.

CODIS

The FBI Laboratory's Combined DNA Index System (CODIS) blends forensic science and computer technology into an effective tool for solving violent crimes. CODIS enables federal, state, and local crime labs to exchange and compare DNA profiles electronically.

CODIS generates investigative leads in crimes where biological evidence is recovered from the crime scene using two indexes, the forensic and the offender:

Forensic Index

- Contains DNA profiles from crime scene evidence.

Offender Index

- Contains DNA profiles of individuals convicted of sex offenses (and other violent crimes) with many states now expanding legislation to include other felonies.

Matches made among profiles in the Forensic Index can link crime scenes

together, possibly identifying serial offenders. Based on a match, police in multiple jurisdictions can coordinate their respective investigations and share the leads they developed independently. Matches made between the Forensic and Offender indexes provide investigators with the identity of the perpetrator(s). After CODIS identifies a potential match, qualified DNA analysts in the laboratories contact each other to validate or refute the match.

There are two types of CODIS Hits:

Cold Hit

- Forensic unknown matches a Convicted offender sample
- Confirmation required
- Name of perpetrator, California Information Index (CII) number, and last known address returned

Case-to-Case Hit

- Forensic unknown matches another forensic unknown sample
- Suspect is the same person in these case hits

Belmont Shore Rapist

Using the CODIS database, the Crime Lab linked four Long Beach Police Department (LBPB) cases to several cases from other agencies which were all committed by the same suspect. During the extensive investigation, the Crime Lab analyzed approximately 75 reference samples and eliminated these individuals as suspects. In 2002, LBPB detained and arrested a suspect several blocks from a recent sexual assault. A reference sample was obtained which linked this suspect to the rapes. This suspect was subsequently charged with numerous sexual assaults dating back to 1997. In August 2004, the suspect was convicted of 59 felony counts, 20 special allegations, and he received a sentence of 1,030 years plus ten life terms.

Murder of Josephine Tan

In November 1993, the nude body of 41 year old Josephine Tan was found on the upper embankment along the west side of the Harbor (110) Freeway just south of the 220th Street pedestrian bridge. The victim, a local resident who frequently used the foot bridge, was abducted, sexually assaulted, and murdered sometime after 5:30 P.M. the evening before. Sheriff's Homicide Detectives investigated and screened numerous subjects through voluntary DNA submissions, however, the case grew cold with no further leads to pursue. In 2002, the CODIS system hit upon a convicted pedophile who was indicted for this murder in July 2004 and is currently awaiting trial.

2003 Body Recovered in Monterey Park

This 2003 LASD Homicide case involved a sexual assault and murder of a female victim whose body was dumped in Monterey Park. Homicide Detectives followed all workable leads, but were unable to make any arrests. The Crime Lab entered the DNA profiles from the evidence into CODIS and obtained a cold hit on a registered sex offender. In November 2004, this subject was arrested for this offense and subsequently sentenced to 35 years to life.

Proposition 69: The DNA Fingerprint Initiative

In November 2004, California voters passed the "DNA Fingerprint Initiative." This legislation, which will be enacted January 1, 2005, requires the collection of DNA samples from all felons, from adults and juveniles arrested for or charged with specific crimes, and, in five years, from adults arrested for or charged with any felony. These DNA samples will be profiled and submitted to the State's DNA database which is part of CODIS, and will be included in the Offender Index. With these upcoming changes to the laws governing statewide submissions, more felons will be put into the database which will, in turn, create more cold hits and case to case associations than ever before in California's history. The Los Angeles County Sheriff Department Crime Lab looks forward to these enhancements in DNA testing which will enable us to provide even better services to our Crime Lab clients.



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