

Expert Review of Forensic DNA Test Results



Technical Bulletin 40-013

Setting the Standard for Quality DNA Identification

DNA was first introduced as evidence in the United States in 1987. Since that time, DNA technology has become an increasingly powerful forensic tool for including or excluding individuals from biological crime scene evidence.

Over time, standards for DNA analysis and the admissibility of DNA evidence have been developed and promulgated. Rather than refuting the scientific basis for DNA analysis, admissibility hearings tend to address issues such as contamination, quality assurance, and Fourth Amendment protections.



Forensic DNA Casework is often complex and subject to varying interpretations. In order to effectively evaluate forensic DNA Evidence, it is necessary to examine and put in perspective all aspects of the evidence from the chain of custody, laboratory analysis, data interpretation and reporting.

The Sixth Amendment of the United States Constitution outlines rights associated with federal criminal prosecutions. The Supreme Court has determined that these rights are so fundamental and significant that they are protected at the state level by the Fourteenth Amendment's Due Process Clause.

The defense, under the Sixth Amendment, must have an opportunity to "confront" and cross-examine witnesses. The right to confront and cross-examine witnesses also applies to physical evidence; the prosecution must present physical evidence to the jury, providing the defense ample opportunity to cross-examine its validity and meaning.

Following is a checklist of critical components necessary for expert case review.

Police Records

1. Copy of standard operating procedures and policies for the collection, transport, drying (if applicable), and storage of DNA evidence. This should include all documentation related to procedures for preventing cross-contamination, prevention of mislabeling if the evidence is repackaged after procedures such as drying, securing the evidence, and a list of individuals that could potentially gain access to the evidence.

Accreditation and Qualifications of Police Personnel

1. Copies of all certificates of accreditation (e.g. Commission on Accreditation for Law Enforcement Agencies, Inc.) held by the police department.
2. Current resume, job description, documented specialized training in DNA evidence collection,



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corrective actions and a summary of competency test results for each person involved in collecting, transporting, drying, or storing DNA evidence performed in this case.

3. Record of any citizen's complaints, internal affairs investigations, and any civil or legal actions that have been filed against any person involved in collecting, transporting, drying, or storing DNA evidence, performed in this case.

Case File

1. A general overview of the case.
2. A complete copy of the case file, including all laboratory records generated in conjunction with this case.
3. A list that clearly shows the correlation of lab sample numbers to evidence numbers or descriptions on the chain of custody.
4. Copies of any corrective actions associated with this case.

Laboratory Procedures

1. A copy of all Standard Operating Procedures used in connection with the testing in this case, including the result interpretation policy.
2. A list of the commercial software programs used in the DNA testing.
3. Copies of allelic frequency tables relied upon in making statistical estimates.

Chain of custody

1. Copies of all records that document the treatment and handling of the biological evidence in this case, from point of collection to current disposition.
2. This information should include documentation of where and how the materials were stored, the amount of evidence consumed in testing, the amount of material remaining after the testing and how the remaining evidence is stored.

Electronic Data Files

1. Copies of all data files used and created in the course of performing tests and analyzing data in this case, including .fsa files, if applicable. These files should include all data necessary to independently reanalyze the raw data.

Accreditation and Laboratory Personnel

1. Copies of all certificates of accreditation held by the DNA testing laboratory.
2. Current resume, job description and a summary of proficiency test results for each person involved in conducting or reviewing DNA testing performed in this case.
3. Copies of the laboratory's most recent inspection by their accrediting agency, detailing deficiencies and corrective actions.



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