DEPARTMENT OF JUSTICE
UNIFORM LANGUAGE FOR TESTIMONY AND REPORTS
FOR FORENSIC MITOCHONDRIAL DNA EXAMINATIONS

I. Application

This document applies to Department of Justice examiners who are authorized to prepare reports and provide expert witness testimony regarding forensic mitochondrial DNA (mtDNA) examinations. This document applies to reports and to testimony based on reports that are finalized after its effective date. Section III is limited to conclusions that result from forensic mtDNA examinations. Section IV is applicable to all forensic mtDNA examinations unless otherwise limited by the express terms of an individual qualification or limitation.

II. Purpose and Scope[1]

The Uniform Language for Testimony and Reports is a quality assurance measure designed to standardize the expression of appropriate consensus language for use by Department examiners in their reports and testimony. This document is intended to describe and explain terminology that may be provided by Department examiners. It shall be attached to, or incorporated by reference in, laboratory reports or included in the case file.

Department examiners are expected to prepare reports and provide testimony consistent with the directives of this document. However, examiners are not required to provide a complete or verbatim recitation of the definitions or bases set forth in this document. This is supplemental information that is intended to clarify the meaning of, and foundation for, the approved conclusions.

This document should not be construed to imply that terminology, definitions, or testimony provided by Department examiners prior to its effective date that may differ from that set forth below was erroneous, incorrect, or indefensible. It should also not be construed to imply that the use of different terminology or definitions by non-Departmental forensic laboratories or individuals is erroneous, incorrect, or indefensible.

This document does not, and cannot, address every contingency that may occur. For example, an examiner may not have an opportunity to fully comply with its directives during a testimonial presentation due to circumstances beyond his or her control. In addition, this document does not prohibit the provision of conclusions in reports and testimony that fall outside of its stated scope. Finally, the substantive content of expert testimony may be dependent upon legal rules imposed by the court or jurisdiction in which it is offered.

[1] This document is not intended to, does not, and may not be relied upon to create any rights, substantive or procedural, enforceable by law by any party in any matter, civil or criminal; nor does it place any limitation on otherwise lawful investigative or legal prerogatives of the Department.

III. Conclusions Regarding Forensic mtDNA Examinations

An examiner may offer any of the following conclusions regarding forensic mtDNA examinations:

1. Cannot be excluded (i.e., inclusion, or included)
2. Exclusion (i.e., excluded)
3. Inconclusive

Cannot be Excluded

'Cannot be excluded' is an examiner's conclusion that 1) a known individual is included as a possible contributor to the mtDNA typing results obtained from an evidentiary sample; or 2) two known individuals, or a known individual and the source of an evidentiary sample, may share the same maternal lineage.

The basis for a 'cannot be excluded' conclusion is an examiner's interpretation that the mtDNA haplotype[2] of a known individual is the same as or concordant[3] with 1) the mtDNA typing results obtained from an evidentiary sample; or 2) the mtDNA haplotype of a putative relative from the same maternal lineage.

All relatives from the same maternal lineage are expected to have the same or a concordant mtDNA haplotype and would also be included as potential contributors. In addition, unrelated individuals may also exhibit the same or a concordant mtDNA haplotype.[4]

Exclusion

'Exclusion' is an examiner's conclusion that 1) a known individual is eliminated as a possible contributor to the mtDNA typing results obtained from an evidentiary sample; or 2) two individuals, or a known individual and the source of an evidentiary sample, do not share the same maternal lineage.

The basis for an 'exclusion' conclusion is an examiner's interpretation that the mtDNA haplotype of a known individual is neither the same as nor concordant with 1) the mtDNA typing results obtained from an evidentiary sample at two or more nucleotide positions across a common sequence range; or 2) the mtDNA haplotype of a putative relative from the same maternal lineage.

All relatives from the same maternal lineage are expected to have the same or a concordant mtDNA haplotype and would also be excluded as potential contributors.

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[2] A 'haplotype' is a set of linked DNA variations or polymorphisms that are inherited together from a single parent.

[3] Two mtDNA haplotypes are 'concordant' when they share a common nucleotide at each position across a common sequence range.

[4] The expectation of a shared mtDNA haplotype should not be misunderstood to mean that all individuals with that same haplotype had the same opportunity to potentially contribute to the evidentiary sample.

Inconclusive
'Inconclusive' is an examiner's conclusion that no determination can be made whether 1) a known individual can be included or excluded as a possible contributor to the mtDNA typing results obtained from an evidentiary sample; or 2) two known individuals, or a known individual and the source of an evidentiary sample, share the same maternal lineage.

The basis for an 'inconclusive' conclusion is an examiner's interpretation that the mtDNA haplotype of a known individual is neither the same as nor concordant with 1) the mtDNA typing results obtained from an evidentiary sample at a single nucleotide position across a common sequence range; or 2) the mtDNA haplotype of a putative relative from the same maternal lineage at a single nucleotide position across a common sequence range.

IV. Qualifications and Limitations of Forensic mtDNA Examinations

- An examiner shall not assert that forensic mtDNA examinations are infallible or have a zero error rate.

- An examiner shall not offer a 'cannot be excluded' conclusion unless he or she also explains that 1) all relatives from the same maternal lineage are expected to have the same or a concordant mtDNA haplotype and would also be included as potential contributors; and 2) unrelated individuals may also exhibit the same or a concordant mtDNA haplotype.[5]

- An examiner shall not assert that a mtDNA haplotype is unique to a particular individual or is the basis for personal identification.

- An examiner shall provide a quantitative statement describing the weight of the evidence for all inclusions regardless of the magnitude of the resulting quantitative value.

- An examiner shall not assert that a mtDNA haplotype can be used to predict the specific population, racial, or ethnic group to which a person belongs.

- An examiner shall not cite the number of forensic mtDNA examinations performed in his or her career as a direct measure for the accuracy of a proffered conclusion. An examiner may cite the number of forensic mtDNA examinations performed in his or her career for the purpose of establishing, defending, or describing his or her qualifications or experience.

[5] The expectation of a shared mtDNA haplotype should not be misunderstood to mean that all individuals with that same haplotype had the same opportunity to potentially contribute to the evidentiary sample.

- An examiner shall not use the expressions 'reasonable degree of scientific certainty,' 'reasonable scientific certainty,' or similar assertions of reasonable certainty in either reports or testimony unless required to do so by a judge or applicable law.[6]

[6] *See Memorandum from the Attorney General to Heads of Department Components* (Sept. 9. 2016), https://www.justice.gov/opa/file/891366/download.