

DNA: Steps for Profile Interpretation- Step 6

Step six *Compare the interpreted evidence profile with probative reference profiles.*

Conclusions The four types of conclusions are inclusion, exclusion, inconclusive, and no results. Refer to *DNA: Profile Interpretation* for additional information.

**Report examples-
inclusion** Possible report wording for *inclusions*:

- using ***Random Match Probability***:
 - The genetic profile recovered from the sperm fraction of the vaginal swab (Item 001-04A) is the same as the reference profile of the Suspect. This profile is estimated to occur at random among unrelated individuals in approximately 1 in 1 quintillion of the African-American population, 1 in 1 quintillion of the Caucasian population, and 1 in 1 quintillion of the Hispanic population.
 - The genetic partial profile recovered from the bottle (Item 001-01) is the same as the reference profile of the Suspect, at those loci detected. Assuming one contributor, this partial profile is estimated to occur at random among unrelated individuals in approximately 1 in 1 quintillion of the African-American population, 1 in 1 quintillion of the Caucasian population, and 1 in 1 quintillion of the Hispanic population.
 - The genetic profile recovered from the sperm fraction of the rectal swab (Item 001-06A) is a mixture. Assuming two contributors and assuming the victim is a contributor to the mixture, the remaining partial profile is consistent with the reference profile of the Suspect. This partial profile is expected to occur at random among unrelated individuals in approximately 1 in 1 quintillion of the African-American population, 1 in 1 quintillion of the Caucasian population, and 1 in 1 quintillion of the Hispanic population.
 - The genetic profile recovered from the cigarette butt (Item 002-1) is a mixture. Assuming two contributors, the Suspect is included as being a possible contributor to the mixture. The probability of selecting an unrelated individual at random who would be included as a possible contributor is approximately 1 in 1 quintillion for the African-American population, 1 in 1 quintillion for the Caucasian population, and 1 in 1 quintillion for the Hispanic population.

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DNA: Steps for Profile Interpretation- Step 6, Continued

Report examples- inclusion (continued)

- using *Combined Probability of Inclusion*:
 - The genetic profile recovered from the cap (Item 002-02) is a mixture of at least 3 individuals. The Suspect is included as a possible contributor to the mixture. The probability of selecting an unrelated individual at random who would be included as a possible contributor is approximately 1 in 1 quintillion for the African-American population, 1 in 1 quintillion for the Caucasian population, and 1 in 1 quintillion for the Hispanic population.
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Report examples- exclusion

Possible report wording for *exclusions*:

- The genetic profile recovered from the blood on the baseball cap (Item 001-02) is that of an unknown male. The Suspect is excluded as being a contributor to this profile.
 - The genetic profile recovered from the gun grip (Item 001-02) is a mixture of at least three individuals. The Suspect is excluded as being a contributor to this mixture.
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Example of an inclusion and an exclusion

Locus	Profile of the minor contributor	Reference profile of an INCLUDED individual	Reference profile of an EXCLUDED individual
D8S1179	10, 13	10, 13	10, 13
D21S11	29+, 29, 30	29, 29	29, 31
D7S820	11+	9, 11	11, 12
CSF1PO	inc	12, 12	11, 12

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DNA: Steps for Profile Interpretation- Step 6, Continued

Statistical result less than 1 in 2

There may be times when a profile is interpretable, but the statistical result is less than 1 in 2 for one or more of the population groups.

In this instance, the profile should not be used to make an inclusion. The profile can, however, be used to exclude an individual.

- Report wording example: The genetic profile recovered from the shoe (Item 002-1) is a mixture. Assuming two contributors, the major contributor... The minor contributor consists of one allele at TPOX. Based on the statistical result of the one minor allele, it cannot be used for inclusionary purposes. However, the Suspect is excluded as a contributor because his reference profile does not contain this allele.
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Report example- inconclusive

Possible report wording for an *inconclusive*:

- The genetic profile recovered from the collar of the shirt (Item 002-01) is a mixture of at least three individuals. Due to the complexity of the profile, the mixture is inconclusive and therefore not suitable for comparison to reference profiles.
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Report example- no results

Possible report wording for *no results*:

- No genetic typing results were obtained from the neck swab (Item 006-07).
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