



# Understanding Sexual Assault Kit Testing: What is a CODIS “Hit”

## What is a “DNA Profile”?

A DNA profile is unique like a fingerprint, but uses a person’s DNA instead of the ridges on their fingertips. For criminal justice agencies, evidence samples are taken from a crime scene, or in this case a sexual assault evidence kit (SAK), and tested to see if a DNA profile matches to others in a database to identify crime perpetrators.

## What is CODIS?

The Combined DNA Index System, or “CODIS” is a Federal Bureau of Investigation (FBI) computer system. Hawaii’s law enforcement agencies, through Hawaii’s State DNA Index System (SDIS) are able to share their DNA Profiles with the National DNA Index System (NDIS), a national database containing DNA profiles contributed by forensic labs from across the country.<sup>1</sup>

## What information is in CODIS?

There is no personal identifying information, such as names related to a DNA profile, in CODIS and a victim’s profile is not uploaded into CODIS. DNA profiles in CODIS are stored, and in Hawaii can be searched at the state (SDIS) and national level (NDIS). The DNA profiles in the NDIS are divided into three categories:<sup>2</sup>

- **Forensic Database:** DNA profiles of possible perpetrators, developed from crime scene evidence, such as semen or blood stains. DNA profiles recovered from SAKs belong to this category.
- **Convicted Offender Database:** DNA profiles of individuals convicted of certain crimes, such as felonies.
- **Other databases for the identification of missing persons or unidentified human remains.**

## How is a DNA Profile entered and searched in CODIS?

1. Evidence is sent to a crime laboratory and prepared for initial testing to find out whether DNA is present.
2. If DNA is present, the crime laboratory determines if the quality is sufficient to produce a DNA profile.
3. If the DNA profile is obtained, crime analysts must verify that the profile is “CODIS eligible,” sometimes referred to as “CODIS Ready” (i.e., the profile is good enough to be uploaded into CODIS).
4. If CODIS eligible, the DNA profile is uploaded to the Hawaii state database (SDIS) and is then pulled into the national database (NDIS).

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<sup>1</sup> <https://www.fbi.gov/services/laboratory/biometric-analysis/codis/codis-and-ndis-fact-sheet>

<sup>2</sup> <https://www.fbi.gov/file-repository/combined-dna-index-system-codis-brochure.pdf/view>

5. Once the DNA profile is uploaded, the search can result in:
  - a. “no immediate match” to any profile in any of the CODIS databases. The DNA profile will stay in CODIS and be continuously compared to DNA profiles added later.
  - b. “match” to one or more of the CODIS databases, either the Forensic database or Convicted Offender database or both.
  - c. “hit” when a match identifies a possible perpetrator or links to another case. Types of “hits” include:
    - i. Forensic Hit: DNA profile matches a DNA profile from another SAK/crime scene, but does not identify a known person.
    - ii. Offender Hit: DNA profile matches offender DNA and a possible perpetrator is identified. There are two types:
      - a) Cold Hit: possible perpetrator was not known before testing, or
      - b) Warm Hit: possible perpetrator was known before testing.
6. Match Confirmation: When there is a match between a sample taken directly from the perpetrator and DNA recovered from the SAK/crime scene.
7. In some cases, the submission of just one DNA profile can result in multiple matches in the separate NDIS databases (Forensic or Offender).

The HI-SAKI Multi-Disciplinary Team, as specified in the SAKI federal grant, only counts a match which identifies a possible perpetrator (i.e., arrestee or offender hit) or a match to a case different than the one the DNA Profile is submitted (i.e., forensic hit).

A common misunderstanding occurs when it is assumed that for each and every “CODIS hit,” there is a separate and distinct perpetrator identified. This is not necessarily true and an example would be:

- A woman has consensual sex with her husband. A day later, the woman is sexually assaulted by an unknown perpetrator and a SAK is completed. Because of an unrelated felony conviction, the husband is in the CODIS Convicted Offender Database. In this case, there may be a “match” to the husband’s profile in the Convicted Offender Database. If the perpetrator is also in the CODIS Convicted Offender Database for a previous crime, the DNA profile generated by the SAK will also “match” in the Convicted Offender Database. Although there were two “matches” in this one case, only the perpetrator’s match is counted as a “hit.”
- Expanding the example, if the same perpetrator previously committed a separate sexual assault, in which a SAK was tested and the profile uploaded into the CODIS Forensic Database, there would also be a “hit” as a case association (forensic hit), now making the total number three “matches” and two “hits.”

**For additional information about Hawaii’s sexual assault kit initiative and Project Mālama Kākou visit: <http://ag.hawaii.gov/hisaki>**

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# Sexual Assault Kit Testing Process

## Glossary

**Combined DNA Index System (CODIS):** The Combined DNA Index System, or CODIS, blends forensic science and computer technology into a tool for linking violent crimes. It enables federal, state, and local forensic laboratories to exchange and compare DNA profiles electronically, thereby linking serial violent crimes to each other and to known offenders. (Definition taken from the FBI's Combined DNA Index System website.)

**DNA profile:** A genetic analysis used to identify an offender or link case evidence together; the DNA profile is generated after biological evidence is collected and analyzed.

**Forensic hit:** A DNA profile from the SAK/crime scene that matches a DNA profile from another SAK/crime scene, thus linking the two crimes.

**Hit:** A match between two (or more) DNA profiles that provides law enforcement with an investigative lead.

**Offender hit:** A known reference sample (offender or arrestee) that matches a DNA profile entered from a SAK/crime scene, thus identifying a possible perpetrator.

**Sexual assault kit (SAK):** A package of materials used to collect samples (evidence) from the victim's body by a medical professional, often a medical-forensic examiner, such as a Sexual Assault Nurse Examiner (SANE). The contents of a SAK vary by jurisdiction but generally include swabs and collection envelopes for biological materials, debris, and relevant clothing.

