



Biological Sciences Submission Guidelines

Reference Standards

- A reference standard is a “known sample” collected from a specific individual, typically the victim or suspect.
- Buccal (or inner cheek) swabs are the preferred collection type (2 swabs packaged as one item), but the reference standard may also be submitted in the form of blood tubes or bloodstain cards.
- Reference standards from known suspects and victims should be submitted when possible. The name of the individual must be on the outer packaging and on the submission form.
- An elimination standard is a reference standard from an individual who is not related to the crime but has access to the crime scene (i.e. consensual sexual partners, home owners). Elimination standards are typically used to determine the CODIS (Combined DNA Index System) entry eligibility of a DNA profile. If the source of the potential DNA is in question, elimination standards are necessary.
- Convicted offender/arrestee standards submitted for CODIS State Database entry have no chain of custody; therefore, these standards cannot be used in casework comparison. Separate reference standards from suspects and/or victims must be submitted for direct comparison to evidence profiles.

Crimes Against Persons (i.e. homicides, sexual assaults, kidnappings, or assaults)

- Because of the complexity of cases involving crimes against persons, a pre-submission meeting is strongly recommended. The number of items submitted for DNA analysis will be determined at that meeting.
- The evidence item is preferred to swabs of the item.
- For sexual assault cases, the victim and suspect(s)’ sexual assault kits should be included in the initial submission. After the initial examination, the DNA analyst may request additional items of evidence be submitted for further examination, such as bedding and clothing.
- The term “touch/contact/trace” DNA is used to refer to samples typically consisting of skin cells transferred from an individual during contact with an item of evidence or another individual. In many instances “touch/contact/trace” DNA swabs are considered minimal samples and therefore will be consumed during the DNA analysis process. If a suspect has been identified, a “Request for Permission to Consume the Sample” may be needed from the District Attorney’s Office before any DNA testing is performed on these samples.

Felony Property Crimes

- Submit two (2) evidence items along with victim elimination/suspect reference standards
- Submit suspected body fluid samples (e.g. bloodstains, can/bottles/straws, cigarette butts, airbags) or clothing items (or other pre-approved personal items) left behind by suspect(s)
- Swabs of the suspected body fluid are preferred to the actual item of evidence, if the item is not suitable for latent print analysis.
 - Exceptions include cigarette butts, chewed gum, or other small items which should be submitted whole.
- All items and swabs must be directly related to the crime. The item’s relationship to the crime must be clearly stated on the RFLE and/or cover letter.

- Items left behind by an alleged perpetrator may be suitable for latent print analysis; however, they will not be analyzed for “touch/trace” DNA at this time.
- Items that are not accepted for DNA analysis at CBIFS may be outsourced to a private laboratory at the agency’s expense. Please contact the CBIFS laboratory for information regarding outsourcing items from your case.

Evidence Types for DNA testing

- Bodily fluids and clothing items have greater success rates for developing a DNA profile. These items are the preferred items for submission in all cases.
- In Crimes Against Persons cases, “trace/touch” items may be analyzed for DNA after bodily fluid and clothing items have been tested.
- In Property Crime cases, “trace/touch” items should be submitted for latent print analysis. Examples of these items are:
 - Tools left behind at the scene (e.g. screwdrivers, pry bars)
 - Briefly touched items (e.g. door handles, paper, stereos)
 - Guns

Combined DNA Index System (CODIS)

In 1988, the CODIS database was started in Colorado. Over the years database eligibility has broadened. The most recent change was in 2011 was to include felony arrestees. CODIS is a database used to provide investigative leads based on DNA profiles developed from crime scenes across the country. There are strict state and federal guidelines regarding CODIS eligibility.

- DNA profiles obtained from evidence not directly related to the crime *may not* be eligible for CODIS entry.
- DNA profiles obtained directly from a known reference source are not eligible for CODIS entry.
- DNA profiles that are ambiguous regarding possible contributors (i.e. poor quality profiles, complex mixtures) may not be eligible for CODIS entry.
- DNA profiles that can be matched to victims or elimination sources are not eligible for CODIS entry.
- Submission of reference standards (suspect, victim, elimination) may be required to determine CODIS eligibility.
- Contact your local CBIFS for questions regarding CODIS eligibility.

Familial DNA Searching

A familial search is a deliberate search of the state DNA database for individuals biologically related to the contributor of an evidentiary profile. The association may provide information in unsolved cases where other investigative leads have been exhausted. Because the information that is provided will be the name or names of an offender or offenders in Colorado’s DNA database who may or may not be related to the actual perpetrator, the process requires specialized DNA testing and review of the offender’s non-DNA information. This process was developed keeping privacy concerns in mind, while at the same time providing information that may be useful in solving a violent crime and preventing potential additional victimization.

A familial search may be requested if your case currently has a DNA profile in CODIS and all other investigative leads have been exhausted or there is a threat to public safety. Request for a familial search can be made by contacting the DNA database manager at rachel.harmon@state.co.us.

Summary

These biological/DNA guidelines are recommendations of what should be included in the initial evidence submission to the CBIFS, but do not reflect what should or should not be collected at the crime scene. In support of your agency and upon request, the CBIFS will provide training on the proper collection and submission of biological/DNA samples. Please see our General Submission Guidelines for an overview of the submission process.

Please feel free to contact us at any time regarding your biological/DNA submissions. It is our goal to ensure your understanding, educate you on situations that may be unfamiliar to your agency, and to work collaboratively to ensure the citizens of Colorado are served at the highest possible level.

See additional submission guidelines for further information for your evidence type.

Controlled Substances

DUI Toxicology

Fire Debris - Ignitable Liquids

Firearms and Toolmarks

Gunshot Residue Evidence

Ignitable Liquids from Hands

Latent Prints

Medicolegal Death Investigation

Paint Evidence