Guidelines for Biological Evidences collection

Evidence in this category includes blood of human or animal origin, semen, saliva, urine, and skin tissue submitted for the purpose of identification and characterization according to genetic factors such as isoenzymes and DNA profiles. This evidence is called biological evidence. It does not include samples of blood or urine submitted for the determination of the presence of drugs, alcohol, or poisons.

DNA typing is based on the understanding that no two persons, except identical twins, have the same DNA. Conventional serological techniques may still be employed to eliminate suspects. If the suspect cannot be eliminated by conventional techniques, the samples will then be forwarded for DNA analysis. DNA analysis gives an extremely high power of discrimination.

Blood Evidence Value.

Blood evidence is of value in such crimes as murder, rape, assault, robbery, burglary, hit-and-run accidents etc. Blood evidence may aid an investigation by locating the crime scene, by identifying the weapon used, by proving or disproving a suspect's alibi, and by eliminating suspects. DNA profiling can be performed on any biological substance. It can also be used for the identification of bodies when samples from parents and/or children of the missing person are available.

Other Body Fluids of Significant Value

Depending on circumstances of the case, it is sometimes helpful to identify seminal stains, saliva, or urine. DNA profiling is performed on seminal stains in order to determine if the unknown sample matches the DNA profile of the standard blood sample or not.

COLLECTION OF SAMPLE AND STANDARDS

Since blood and other body fluid evidence is biological and is rapidly decomposed by bacteria and mould, it is absolutely essential that such evidence is handled properly. Please follow these instructions carefully for each type of situation in which stains of blood or other body fluids are found.

Remember safety measures for biological hazards. Always wear disposable gloves when handling material stained with blood or other body fluids. To prevent cross contamination of samples, these gloves should be changed often if they should become soiled with a biological substance. Utensils used to collect evidence should be cleaned with 10%

bleach between each item collected. A mask or other protective clothing may be advisable in some cases. Please check with your agency's safety protocols for biological hazards.

Stains on Garments or Fabrics.

1. Make sure that all stains and clothing are DRY! If the stain is wet, it must be air dried away from heat and sunlight, preferably in a secure, ventilated room. The victim's items should be separated from those of the suspect during drying.
2. Package each item separately to avoid contamination and in paper to avoid further decomposition. Paper bags are recommended. DO NOT USE PLASTIC since plastic does not "breathe" and holds in moisture, permitting bacterial and fungal growth.
3. Avoid unnecessary handling of garments with blood or seminal stains.
4. Each item should be initialed and dated in an area away from the stain.

Stains on Surfaces.

1. Items to be checked for blood should not be dusted for prints. Consult with the laboratory first.
2. Whenever possible, submit the bloodstained item itself for analysis. If this is impractical, detach or cut out the part with the stain for submission. Carefully package to avoid contamination or loss. Do not put any tape directly on the stain.
3. Bloodstains can be swabbed off items which cannot be submitted. Swab the blood onto a cotton-tipped applicator that has been slightly dampened with distilled water, in a manner which concentrates the sample. Swab an unstained area of the same surface in the same manner for a control. Air dry and package the stain and control swabs separately in paper.
4. Concentrated stains on walls, floors, etc. (i.e., items that cannot be cut out and submitted), can be scraped off into a piece of paper which is the carefully folded and then placed in a pillbox or other suitable container. This container and the paper should be initialed and dated or otherwise identified.
5. If the stain is moist, let it air dry first, or swab it onto a cotton tipped applicator then air dry.
6. Blood stained soil and control soil samples taken from the spot should be air dried and then packed in paper sheets/news paper sheets separately
7. Collect generous portions of the samples to be analyzed.

Standard samples for comparison.

If blood, semen, or saliva groupings are requested, blood samples are required from the victim, the suspect, and from anyone else who may have contributed blood, semen, saliva, or any other body secretion to the stain in question. Blood samples should be drawn in purple-capped tubes (i.e., tubes with EDTA as the preservative). The sample should then be submitted to the lab as soon as possible, along with the rest of the evidence. In the period between obtaining the blood sample and transporting it to the lab, keep it refrigerated, not frozen.

Shipment.

Deliver biological evidence to the laboratory as rapidly as possible, since certain blood group factors decompose within a few days. It is best to deliver the evidence in person. The outer package should be marked to the attention of Forensic Experts. An envelope containing the laboratory request form should be taped to the outside of the package. Blood stained items-should also be kept away from heat. Even an hour in a car trunk in hot weather is destructive to grouping factors. Each item submitted should be listed along with the specific examinations desired.

Rape Evidence

Evidence normally collected in rape or sodomy cases includes a variety of samples which are relatively constant from case to case.

Evidence in rape cases is likely to link the suspect to the victim or the individuals to some location. Semen, blood, hair or foreign fibres may be transferred during a sexual assault.

The Sexual Assault Evidence(Female or Male Victim)

1. Pubic hair combings. Pubic hair combings for any loose hair and fibres to be collected from the pubic region. This sample will be used to determine if any foreign hair matching that of the suspect is present or if any fibres that might be a link to the suspect or a scene might be present.
2. Pulled pubic hairs. At least 15 pubic hairs pulled from various pubic locations are to be taken in a paper envelope. This sample is necessary for any hair comparison to give a determination of the range and variability of hair known to have come from the victim.
3. Pulled head hairs. At least 15 head hairs pulled from various locations from the head are to be taken in a paper envelope. This sample is necessary for any head hair comparison to give a determination of the range and variability of head hair known to have come from the victim.

4. Blood sample. Blood should be drawn into an EDTA tube or FTA Card. This is used as a standard.
5. Buccal sample. Two cheek swabs are requested. These are sometimes used as a back-up DNA standard.
6. Vaginal or Penile swabs. Four vaginal or penile swabs are requested. These are necessary to detect semen and to determine the DNA profiles present. These must be air dried and placed in appropriate containers (glass vials, plastic containers etc.).
7. Control swabs. If swabs were moistened with water or saline in any step, moisten the two control swabs with the same fluid, and then allow them to air dry before preserving.
8. Vaginal smear slides are to be sent to the laboratory for the determination of the presence of sperm cells.
9. Other evidence swabs like anal swabs (for cases involving anal sodomy), oral swabs (for case involving oral sodomy), external genital swabs, or dried secretion swabs are to be taken. If more than one sample is required, please be sure the samples are separated from each other and properly marked as to type of sample.
10. Underpants. Collect any underwear worn by the victim after the assault.

It is not recommended that bedding be routinely submitted to the lab. Screening of bulky evidence by the investigator greatly expedites the analysis. Clothing items submitted should be individually packaged in paper bags.

The Suspect Sexual Assault Evidence

1. Penile swab to be taken from the outer surface of the penis. This sample may include vaginal secretions from the victim. It must be air dried before packing in appropriate container (e.g. glass vial, plastic container etc.).
2. Pubic hair combings for any loose hair and fibres to be collected from the pubic region. This sample is used to determine if any foreign hair or fibres are resent.
3. Pulled pubic hairs. This sample consists of at least 15 pulled pubic hairs from various pubic locations. This sample is necessary for any hair comparisons.
4. Pulled head hairs. This sample consists of at least 15 pulled head hairs from various regions of the scalp. Like all pulled hair samples, it is used as a standard necessary for hair comparisons.
5. Blood sample. Blood should be drawn into an EDTA tube. This is used as a standard.

6. Buccal sample. Two cheek swabs are requested. These are sometimes used as a back-up DNA standard.
7. Control swabs. If swabs were moistened with water or saline in any step, moisten the two control swabs with the same fluid, then allow them to air dry before preserving.
8. If more than one sample is required, please be sure to separate each type of swab from the other and to properly mark the samples.
9. It is sometimes appropriate for the suspect's underwear or other clothing to be submitted. Each item of clothing should be packaged separately in a paper bag.

General Collection Information.

1. Blood standards are necessary from any individual who may have contributed to a stain in order for complete analysis to be performed.
2. Hair analysis cannot be performed without an adequate standard sample for comparison.
3. Never lick the seal of the envelopes containing biological samples. Use tape and not staples to seal packages.
4. Try to minimize the amount of the bulk evidence that is submitted. This particularly applies to bedding.
5. Be sure all envelopes and bags are properly identified as to subject, the collector of the evidence, and the date and time of collection.
6. Do not cross contaminate evidence by packaging two items in the same package.
7. Be especially thorough in relating the facts of the case to the analyst. The request form should bear the race, age, and sex of all victims and suspects.
8. Remember to use disposable gloves in handling items with stains or blood and other body fluids and use any other protective clothing. All packaged evidence containing such materials should also be marked as "BIOHAZARD".