

CRM343

Experiment D: Biological Evidence Collection and Packaging Experiment

The purpose of this lab is to give you practical experience in the method of collecting biological evidence samples and packaging these items in such a way to prevent contamination. In doing so, you will understand that any biological item at a scene should be handled with caution, as the potential for biohazards exist. Additionally, you will ensure that proper packaging maintains chain of custody/chain of evidence, assuring that the item collected at the scene is the same item analyzed in the lab and presented in court.

Caution! The following presumptive chemicals can be dangerous. Please follow all safety instructions and/or MSDS information which can be found through online research. These chemicals should not be swallowed or inhaled. They may also damage or stain clothing.

After you have completed the exercise, write a two-page synopsis about the experience. You should also include images of your folds, seals, and final packaging (documentation). Did your perception of evidence packaging differ from the actual practical nature of collection and packaging evidence? What obstacles did you encounter in your experience? Was it difficult or simple?

Submit your synopsis to the Dropbox and Turnitin.com **no later than Sunday 11:59 PM EST/EDT.**

Equipment and Supplies

Supplies from your CRM343 bodily fluids kit:

- Tweezers (for picking up items)
- Hexagon OBTI presumptive test kit
- Sero-Stix (presumptive test kit)
- Semen presumptive test kit
- Gloves
- Face mask
- Biohazard labels

Supplies from home:

- Rubbing alcohol
- Sheets of paper for making pharmaceutical/druggist's folds
 - You can also use small manila coin envelopes if you have them from a previous kit
- Small paper bags
- Permanent marker (such as a Sharpie®) for documentation
- Camera

Directions:

- Using the tweezers and gloves provided in your kit and a bottle of rubbing alcohol you purchase from a store, you will be required to collect five items (or swabs of these items) which may contain a bodily fluid that can be analyzed in a forensic crime laboratory.
 - Yes, you will have to use your imagination, unless you want to collect *actual* samples from family members or from yourself.
 - **Caution! If collecting *actual* bodily fluids, be certain to dispose of them properly, using your jurisdiction's requirements for disposal of fluids.**
 - After collecting each item, you will clean your tweezers with rubbing alcohol. This is done to decontaminate your equipment so cross-contamination can be eliminated.
- Conduct presumptive tests (as you did in Module 2) on items you've collected which might contain blood and semen.
 - This time, you will use the *Hexagon OBTI* presumptive blood test, the *Semen Presumptive Test*, and the *Sero-Stix* presumptive blood test. **Read the instructions at the end of this document for information on each kit and follow as directed.**

- Ideally, using full personal protective equipment (PPE), you would properly collect all items in pharmaceutical (druggist's) folds or an appropriate evidence container, such as a small paper bag (for example, the paper bags used in grocery stores/supermarkets).
 - For the purposes of this course/experiment, you will use your gloves and face mask as your modes of PPE.
- All pharmaceutical/druggist's folds must contain the following information (DICED):
 - **Date** and time item collected
 - Initials (name) of person collecting item
 - **Case** number assigned to this class experiment
 - **Exhibit** (item) number (for example: is it 1 of 2?)
 - **Description** of location where found/description of item found; **and**
 - What bodily fluid it might contain/what it would be processed for
 - *If the item is too large to place in a pharmaceutical/druggist's fold, the above listed DICED information should be listed on the exterior packaging (such as a medium sized yellow manila coin envelope or similar packaging)*
- All pharmaceutical/druggist's folds would be placed into a "main" evidence bag (such as a larger paper bag from the grocery store), making certain to seal and initial all evidence (see example provided).
- You will finally place a biohazard sticker on the outside of *each* item's container if you suspect it is a biohazardous substance. This sticker should be visible to anyone who might come in contact with the evidence. At the crime scene, all biological items are considered hazardous. **Good packaging will keep items intact and protect without damage.**
- You will photograph your folds, seals and evidence packaging for documentation purposes.

The bodily fluids you should attempt to collect and package:

- Semen
- Saliva
- Blood
- Urine
- Sweat

Items normally collected in crime scene cases for bodily fluids can include the following:

- Clothing
- Eating/drinking materials
- Sharp instruments which might be used as weapons
- Ordinary items that might come in contact with fluids
- Any other items from which you might collect a bodily fluid at a scene

Instructions for Using Hexagon OBTI

- Open white foil package containing a testing well platform.
- In the small clear container with red cap is a transport medium (liquid).
- Unscrew the red cap. Using the wand, gently touch the tip of the wand to the presumed human blood trace.
- This sample trace is transferred into the tube with transport medium when you put the red cap back on.
- With the red cap screwed back on, shake the sample gently inside the transport medium.
- This mixture is now added, drop by drop, to the test in the sample well (S) at the lower end of the testing platform.
- A positive sample reaction is typically detected within two-three minutes. Negative results should be confirmed after 10 minutes.
- Results: A single blue line means the testing liquid is working fine but no human blood has been detected. Two blue lines mean the test has detected human blood.

- Once testing is complete, document your findings and dispose of the testing well platform by placing it back in the foil package. You can dispose of the transport medium in the same fashion.

Instructions for Using Sero-Stix

- A Sero-Stix is a stiff plastic strip which has at one end a absorptive patch containing a presumptive test reagent for blood.
 - The test is based upon the pseudoperoxidase action of hemoglobin which catalyzes the reaction of tetramethylbenzidine and organic peroxide.
- You can “swab” the patched end onto a stain that is suspected of having blood.
 - The patched end can also be rubbed on a dry stain, then adding a drop of water to moisten.
- The patch at the end of the strip will turn a **dark blue color** if the suspected stain contains hemoglobin (or blood derivatives).
 - Recall this is a *presumptive* test. It is not confirming the presence of blood
- Dispose of the used plastic strips in an appropriate container.

Instructions for Using Semen Presumptive Test Kit

- On the front of the plastic baggie containing the kit, you will carefully read the directions in their entirety as listed.