
Procedure for Aseptic Technique and Contamination Control

1.0 Purpose - This procedure specifies the method for using aseptic technique in the Forensic Casework and Database units.

2.0 Scope - This procedure applies to those Forensic Scientists who have been released to do forensic casework and database work. The procedure also applies to trainees.

3.0 Definitions

- **Bulky evidence** - Any evidence in which hair, fiber or other trace evidence could be attached. This includes, but is not limited to, clothing, bed linens and towels. Undergarments are not considered bulky evidence.
- **Raw evidence** – Original evidence that is submitted to the Laboratory from another agency.
- **Autoclave** – Exposing an item to heat in excess of 120 °C and pressure for at least 30 minutes.

4.0 Equipment, Materials and Reagents

- Brown paper
- Nitrile gloves (or equivalent)
- Disposable lab coats
- Disposable masks
- Deionized water
- 70 % isopropyl alcohol
- 10 % bleach
- Autoclave

5.0 Procedure

5.1 All Forensic Scientists shall wear disposable lab coats when processing evidence or database samples. This protective clothing shall not be worn outside the Laboratory or in office space in the Laboratory.

5.1.1 Disposable lab coats shall be discarded at the end of the day on which they are used. If a Forensic Scientist determines that the lab coat has been compromised during use, the lab coat shall be disposed of immediately and a new one used in its place.

5.1.2 Unless the disposable lab coat comes into contact with biohazard materials (e.g., liquid blood, phenol-chloroform), it shall be discarded in regular trash bins.

5.1.3 White disposable lab coats shall be worn in the extraction and pre-amplification areas; blue disposable lab coats shall be worn in post-amplification areas only. If a Forensic Scientist intends to dispose of a white lab coat after setting up an amplification or quantitation plate, he/she may wear the white lab coat into the post-amplification area, but shall dispose of it before exiting the room.

5.2 Forensic Scientists shall wear disposable masks at all times when doing casework or database work during analysis or preparation of samples for outsourcing. Used masks shall be discarded at the end of each day, or as soon as the Forensic Scientist determines that the mask has been compromised during use. The only exception would be if a Forensic Scientist performing body fluid identification is not handling raw evidence or a cutting that would be the subject of DNA analysis or in proximity of raw evidence.

5.3 Forensic Scientists shall wear nitrile gloves (or equivalent) when processing evidence or Database samples. This protective clothing shall not be worn outside the laboratory or in office space in the Laboratory. Gloves shall be changed for the following reasons:

5.3.1 When the gloves have been compromised (e.g., material spilled onto glove or a non-clean item is touched).

5.3.2 When processing raw evidence, gloves shall be changed between cases and between handling evidence items from the victim, crime scene, and suspect.

5.3.3 When doing a DNA extraction, gloves shall be changed between handling forensic unknowns and known standards.

5.4 The lab benches and hoods shall be cleaned with a 10 % bleach solution (made fresh each day it will be used) under the following circumstances:

- Prior to use.
- Between cases (or batched cases).
- Between processing items from the victim and suspect when processing raw evidence.
- Between forensic unknowns and known standards when doing DNA extractions.
- When they have been contaminated or soiled (e.g., material spilled onto surface).

5.4.1 In addition, lab benches and hoods shall be dusted and cleaned with bleach once a week.

5.5 Forensic Scientists shall process bulky evidence over a piece of clean paper to capture any hair, fiber, or other trace evidence which may be dislodged during analysis. Upon completion of analysis, the evidence item shall be placed back into its original container wrapped in the paper or the paper shall be folded separately and placed in the bag to contain debris that may have fallen off the evidence during analysis. If multiple sheets of paper are used or a very large sheet of paper is used it is acceptable to concentrate the debris into a smaller area of the paper. The area around the debris can then be cut and folded and placed in the original container.

5.6 Only sterile disposable scalpels, scissors, or utensils shall be used to process evidence.

5.7 Instruments used in the Database Unit for cutting/punching shall be sterilized or cleaned as described in relevant database procedure documents. When flame-sterilizing a utensil, the utensil shall be passed over the hottest part of the flame for two or more seconds to ensure that every surface is exposed to the flame.

5.8 A separate pair of scissors or scalpel blade shall be used for each item of evidence. If multiple cuttings are made from a single item of evidence, a new scalpel blade shall be used for each cutting made from that single item due to safety concerns. If disposable scissors are being used, the scissors shall be wiped with a 10 % bleach solution between each and every cutting.

5.9 All sharps shall be disposed of in a properly marked sharp container after use.

5.10 Forensic Scientists shall bleach pipettes prior to use by wiping surface with a 10 % bleach solution. This shall be followed by wiping with a 70 % isopropyl alcohol (or equivalent) solution.

- 5.11** All pipette tips are considered single-use only and shall be discarded after use.
- 5.12** There shall be no more than one item of evidence or sample open at a time. Exceptions are for use of strip tubes during amplification and the 96 well plates that are used during the quantitation and 3130 runs.
- 5.13** The DNA extraction of the unknown and known samples shall be separated by time. Between extraction of the unknown and known samples, the work space and instruments shall be decontaminated refer to **5.4** and **5.10**.
- 5.14** Amplified DNA product including real time PCR shall be generated, processed and maintained in a room(s) separate from the evidence examination, DNA extraction and PCR set up areas. The doors between the rooms containing amplified DNA and other areas shall remain closed. All equipment, reagents and amplified DNA work product used in the amplified work area shall be dedicated to this area and shall not be used in extractions or PCR setup.
- 5.15** Trays used for amplification and extraction shall be bleached after each use before they can be used again.
- 5.16** If samples are lost through spillage, are inadvertently mixed, or accidentally compromised, the Forensic Scientist will cease all work on that sample immediately, notify the Forensic Scientist Manager and the appropriate Technical Leader (Body Fluid or DNA) and document the incident in the case file. If the analysis cannot be repeated because the entire sample has been destroyed, the final Laboratory Report shall indicate the reason why no results are reported.
- 5.17** The following items shall be autoclaved:
- All glassware used in the preparation and storage of forensic DNA and database reagents/ solutions.
 - 1.5 mL centrifuge tubes.
 - 0.5 mL centrifuge tubes (blue, yellow and purple).
 - Spin baskets.
 - Buffers and components (refer to Forensic Biology Section Procedure for DNA Reagent Preparation and Quality Control).

6.0 Limitations - N/A

7.0 Safety - When using a bleach solution, gloves shall always be used and safety glasses should be used unless working in a safety hood or cabinet.

8.0 References

Forensic Biology Section Procedure for Maintenance and Calibration

Forensic Biology Section Procedure for DNA Reagent Preparation and Quality Control

Forensic Biology Section Technical Procedures for Body Fluid and DNA Analysis

Forensic Biology Section DNA Database technical procedures

9.0 Records - N/A

10.0 Attachments - N/A

Revision History		
Effective Date	Version Number	Reason
09/17/2012	1	Original Document
09/13/2013	2	5.4.1 – added weekly dusting requirement