Form	Deviation Request Form
Title	DRF_Aseptic Technique Procedure
Laboratory Location	Lab-wide
Discipline/Section	Forensic Biology
A. Requested deviation applies to:	Section 5.9
B. Requested deviation:	Add additional sentence to section that if items are being combined during the sampling process (e.g., shell casings) the evidence items may be opened sim ultaneously.
C. Necessity for the deviation:	To allow for more streamlined sampling processing during the shell casing sampling which allows for multiple casings to be processed as one extraction.
D: Technical Review and Authorization	
Technical Authorization	Yes - Authorized
Technical Authorizer	☐ DeHaan, Mackenzie
Duration	1 year / next procedure revision
E: Quality Assurance Authorization	
Acceptable within general QA guidelines and good laboratory practice?	Yes
Significant negative impact to Crime Laboratory Quality System?	No
QA Authorization	Yes - Authorized
QA Authorizer	☐ West, Jody
Effective Date:	8/12/2024

Version: 3.0
Created at 8/2/2024 2:07 PM by ☐ DeHaan, Mackenzie
Last modified at 8/6/2024 7:43 AM by ☐ DeHaan, Mackenzie

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Procedure for Aseptic Technique and Contamination Control

1.0 Purpose - This procedure specifies the method for using aseptic technique in the Forensic Biology Section.

2.0 Scope - This procedure applies to those Forensic Scientists who have been released to do forensic casework. 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, underwear, clothing, bed linens and towels.
- **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 protective equipment when processing evidence/handling work product. This protective clothing shall not be worn outside the Laboratory building or in office space in the Laboratory. Each forensic scientist is responsible for maintaining the upmost care when dealing with items of evidence and work product to minimize the risk on introducing extraneous DNA.

5.1.1 In laboratory space during active examination of evidence, the Forensic Scientist shall wear disposable lab coats, disposable masks, nitrile gloves (or equivalent), and disposable head/hair coverings. This includes the pre-amp lab areas of evidence processing and search rooms.

5.1.2 When Forensic Scientists are performing microscopic analysis, disposable lab coats, gloves, and head coverings shall be worn and disposable masks shall be readily available.

5.1.3 When Forensic Scientists are handling work product in a pre-amp lab space, they shall wear disposable lab coats, disposable masks, and nitrile gloves (or equivalent).

5.1.4 When Forensic Scientists are handling work product in post-amp lab space, they shall wear disposable lab coats and nitrile gloves (or equivalent).

5.1.5 When transferring sealed samples/work product (e.g. covered quantification plates) between pre-amp and post-amp lab spaces, Forensic Scientists shall at a minimum wear nitrile gloves (or equivalent).

5.1.6 Lab Coats

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5.1.6.1. Disposable lab coats/masks/head coverings shall be discarded at the end of each week. If a Forensic Scientist determines that the lab coat/mask/head covering has been compromised during use, it shall be disposed of immediately and a new one used in its place.

5.1.6.2. Unless the disposable protective equipment comes into contact with biohazardous materials (e.g. liquid blood), it shall be discarded in regular trash bins.

5.2 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).

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

5.3 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.

5.3.1 Forensic Scientists shall process samples for DNA extraction over clean paper (e.g., brown paper or Kimwipe). This paper shall be replaced with clean paper between each sample.

5.4 Only sterile disposable scalpels, scissors, or utensils shall be used to process evidence. Disposable 96 well plates, septa and tubes shall be used during processing of evidence and work product, and shall be for single use only.

5.5 A separate pair of scissors or scalpel blade shall be used for each item of evidence.

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

5.7 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.

5.8 All pipette tips are considered single-use only and shall be discarded after use.

5.9 There shall be no more than one item of evidence or sample open at a time. Exceptions are for use of strip tubes and the 96 well plates and when samples are open as a part of robotic processing (e.g., during Qiagen Qiacube, EZ1, QIASymphony and QIAgility runs.)

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5.10 The DNA extraction of the unknown and known samples shall be separated by time, with unknowns being setup prior to the known samples. Between extraction of the unknown and known samples, the work space and instruments shall be decontaminated refer to **5.2** and **5.7**.

5.11 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.

5.12 Trays used for amplification and extraction shall be bleached after each use before they can be used again.

5.13 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.

5.14 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 **s**afety glasses should be used unless working in a safety hood or cabinet. Care shall be taken when using scalpel blades, do not recap scalpels after use.

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

9.0 Records - N/A

10.0 Attachments - N/A

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Revision History		
Effective Date	Version Number	Reason
07/25/2022	7	3.0 – update bulky definition; 5.9 – update to cover current workflow

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