

SOP Title: Biosafety Cabinet Operation and Maintenance	SOP #: EQ113
Effective Date: May 3, 2021	Revision #: 00
<i>Veterinary Resources Program in Comparative Medicine</i>	

1. PURPOSE

- 1.1. The purpose of this Standard Operating Procedure (SOP) is to describe the procedures related to daily operation, cleaning, routine and non-routine maintenance, and annual certification of Biosafety Cabinets (BSC) at The University of Maryland, Baltimore (UMB).

2. RESPONSIBILITY

- 2.1. All BSC equipment users are responsible for proper operation and cleaning BSCs.
 - 2.1.1. Veterinary Resources (VR) staff are responsible for performing additional weekly cleanings on VR owned BSCs.
- 2.2. Designated VR staff are responsible for ensuring each BSC owned by VR receives an annual certification.

3. MATERIALS AND EQUIPMENT

- 3.1. Disinfectant (i.e. MB-10, Oxivir TB, mild detergent)
- 3.2. Paper towels
- 3.3. PPE specific to the work being conducted in the BSC. At minimum to include:
 - 3.3.1. Disposable Gloves
 - 3.3.2. Disposable gown or facility issued uniform with disposable sleeves
 - 3.3.3. Closed-toe shoes
 - 3.3.4. Disposable hair bonnet or head cap (optional)

4. DEFINITIONS

- 4.1. Aseptic Technique – Using practices and procedures to prevent contamination from pathogens. It involves applying the strictest rules to minimize the risk of contamination or infection.
- 4.2. BSC – Biosafety Cabinet

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5. PROCEDURE

5.1. Start Up

5.1.1. Don the appropriate PPE for the procedures being performed. Tie back long hair or use a hair cover to avoid potential contamination.

5.1.2. Turn on the BSC's overhead light and blower.

5.1.3. Allow the BSC to operate unobstructed while cleaning and prepping the space.

5.1.4. If the unit has a retractable sash, move it to the recommended work position, or lock if using a hinged glass front. The position may be indicated by stickers or markings on the exterior sides of the BSC workstation.

5.1.4.1. If an alarm sounds (beeping noise), the sash is not in the correct position and needs to be adjusted. Do not work in the BSC while a warning light or alarm is signaling.

5.1.5. Liberally saturate the work area inside the BSC with disinfectant and dry the surface thoroughly with paper towel.

5.2. Operation

5.2.1. Perform only one procedure in the BSC at a time.

5.2.2. Assemble materials to be used in the BSC.

5.2.2.1. Introduce necessary items into the BSC by saturating each item's surfaces with appropriate disinfectant.

5.2.2.1.1. For sensitive equipment, mechanically wipe down items with disinfectant or a mild detergent prior to placing in the BSC.

5.2.2.2. Arrange workspace in a logical order, keeping unused items to the rear/sides of the workspace.

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- 5.2.2.3. Separate clean and contaminated materials in the work area. Arrange materials to minimize movement of contaminated materials into clean areas.
- 5.2.3. When possible, perform all procedures approximately 6 inches from the front grill. Do not block the front or rear grills of the BSC as this will disrupt airflow necessary to maintain BSC functionality and utility.
- 5.2.4. Frequently disinfect gloved hands, particularly when reintroducing gloved hands to the BSC.
- 5.2.5. Work from “clean” to “dirty” areas across the work surface.
- 5.2.6. If working with animals under the BSC, transport the animals to the BSC via cages. Spray the outside of the cages with disinfectant before placing cage in BSC.
 - 5.2.6.1. Animals being moved/manipulated outside of their caging must be inside the work area of the BSC. After handling the animal(s), return them to their cage. Once all animals within the cage have been handled as required by the procedure being performed, disinfect the work surface of any animal waste or debris, and disinfect gloved hands, prior to handing another cage.
 - 5.2.6.2. Liberally saturate gloves with disinfectant between handling different rodent cages.
- 5.3. Shut Down
 - 5.3.1. When work is complete, remove all remaining items from the workspace. Spray surfaces of items that may carry harmful contaminants with disinfectant before removing the items from the BSC.
 - 5.3.1.1. Make sure to remove all personal items before and after use as no personal items should be left in a BSC at any time.
 - 5.3.2. Liberally saturate the work area inside the BSC with disinfectant and wipe away residue with paper towels.
 - 5.3.3. Turn off the overhead lights and blowers.

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5.4. Cleaning

5.4.1. Always disinfect the work area before and after using the BSC.

5.4.2. Weekly Cleaning

5.4.2.1. Remove or lift work surface panel for cleaning. Clean all surfaces underneath of the work surface panel to remove any material that fell through the front grill. If applicable, use a vacuum to pick up excess bedding/waste.

5.4.2.2. Clean all interior surfaces including the interior sash surface and walls/ceilings with disinfectant.

5.4.2.3. Record weekly cleaning on the appropriate husbandry/facility log for the respective room the BSC is in.

5.5. Annual Certification

5.5.1. Designated VR staff will ensure that all BSCs being used are certified annually or more frequently when needed by an authorized contractor.

5.6. Non-Routine Maintenance

5.6.1. Notify the facility manager if equipment is malfunctioning.

6. REFERENCES

6.1. [Airflow in a Class II, A2 Purifier® Logic®+ Biological Safety Cabinet - YouTube](#)

7. FORMS AND APPENDICES – N/A

8. DOCUMENT REVISION HISTORY

Revision Number	Description of Changes	Effective Date
EQ113.00	New document.	05/03/2021