

References

The information in this SOP was sourced from the following publications:

1. *NIH Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules (NIH Guidelines)*, National Institutes of Health
2. *Biosafety in Microbiological and Biomedical Laboratories*, 5th Ed., Centers for Disease Control and National Institutes of Health
3. *Bloodborne Pathogens Standard, 29 CFR 1910.1030*, Occupational Safety and Health Administration

In accordance with the above-referenced publications, the following standard and special microbiological practices shall be observed in laboratories working with Biosafety Level 1 or 2 materials. This SOP summarizes those practices and can be used as a training and information tool. This SOP should be incorporated into the laboratory-specific biosafety manual as well as the lab's training materials. Principal Investigators (PI's) are advised to supplement these standard and special practices with laboratory or procedure-specific guidance as appropriate.

Scope

This SOP applies to all work at URI conducted at Biosafety Level 1 or 2, and is subject to the guidelines established in *Biosafety in Microbiological and Biomedical Laboratories*, 5th Ed.

Standard and Special Practices

1. Laboratory access is restricted.
 - a. Laboratory doors are posted with current and accurate biohazard warning placards provided by EHS.
 - b. Laboratory doors are closed at all times, and locked when the lab is not occupied.
 - c. At containment level BSL-2, only persons who have been adequately trained, advised of the potential hazards, meet specific entry requirements, and who comply with all entry and exit procedures are allowed to enter the laboratory.
 - d. If the containment level is BSL-2, access for minors is restricted.
2. Good personal hygiene practices are observed.
 - a. Eating, drinking and smoking; handling contact lenses and applying cosmetics; and storing food for human consumption are not permitted in the laboratory.
 - b. Persons wash their hands: after handling potentially infectious materials, rDNA molecules, animals and before exiting the laboratory.
 - c. Mechanical pipetting devices are used; mouth pipetting is prohibited.
3. Appropriate Personal Protective Equipment (PPE) is available and used.

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- a. At containment level BL-2, barrier coats are worn while in the laboratory, and removed before exiting the laboratory. Personnel are not allowed to launder lab coats at home.
 - b. Appropriate protective gloves are used when contact with rDNA, infectious materials and animals are likely. Gloves are changed when contaminated, their integrity has been compromised, or when otherwise necessary. Hands are washed after removing gloves, before touching clean surfaces, before exiting the laboratory and before donning new gloves. Disposable gloves are not reused and are managed as RI Regulated Medical waste (biohazardous waste) when removed.
 - c. Eye protection is worn. Goggles may be required if there is risk for substantial splashes and/or aerosols. Additional PPE may be required for special tasks (e.g. full face shield, goggles). Eye and face protection must be decontaminated before re-use. Contaminated, disposable face protection (e.g. surgical mask, face mask with shield) is managed as regulated medical waste.
4. Disinfection and Decontamination
- a. Work surfaces are decontaminated at the end of each day, and after any spill of potentially infectious materials, with appropriate disinfectant (as specified in the IBC-approved protocol).
 - b. Laboratory equipment is routinely decontaminated as well as after spills, splashes, or other potential contamination. Equipment is decontaminated before repair, maintenance, or removal from the laboratory.
 - c. Spills involving infectious materials must be promptly contained, decontaminated, and cleaned up. Laboratory staff is trained in spill clean-up and have appropriate spill clean-up materials readily available for immediate use (See **Appendix J: Spill Management Plan SOP**). Liquid wastes containing biohazardous materials are decontaminated prior to disposal. Dispose contaminated solid waste as RI Regulated Medical Waste in a biohazard waste box. Full boxes must be packed for shipment following the Instructions for Packaging and Disposal of Biohazardous Waste.
5. All procedures are performed carefully to minimize the creation of splashes and aerosols. For BL-2, all activities that are anticipated to present a splash or aerosol hazard are conducted in biological safety cabinets or other physical containment devices.
6. Use of sharps (e.g., needles, scalpels, pipettes, glassware) is avoided. Plastic ware is substituted for glassware whenever possible.
- a. When absolutely necessary, the following general precautions are taken:
 - i. Needles are not bent, sheared, broken, recapped, removed from disposable syringes, or otherwise manipulated by hand before disposal.
 - ii. Used sharps are carefully placed in puncture-resistant containers.

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- iii. Broken glassware is not handled directly. Instead, it is handled using mechanical assistance (e.g., brush and dustpan, tongs, forceps).
- b. If the containment level is BL-2, hypodermic needles and syringes are used only for parenteral injection and aspiration of fluids from laboratory animals and diaphragm bottles. Only needle-locking syringes or disposable syringe-needle units (i.e., needle is integral to the syringe) are used. Extreme caution is used when handling needles and syringes to avoid autoinoculation and the generation of aerosols during use and disposal. Needles are not bent, sheared, replaced in the needle sheath or guard, or removed from the syringe following use.