Environmental Health & Safety Biological Safety Level 2 Checklist

It is the responsibility of the Principal Investigator to provide adequate facilities, trained staff, and established practices to reasonably ensure appropriate levels of environmental quality, safety, and care. As a general principle, Biological Safety Level 2 (BSL-2) facilities involve work practices with infectious agents associated with human disease. It addresses hazards from ingestion as well as percutaneous and mucous membrane exposures.

The following checklist is based on *Biosafety in Microbiological and Biomedical Laboratories*, 4th Edition Standard. Special practices, safety equipment, and facility’s criteria apply to infectious agents assigned to Biological Safety Level 2.

### Researcher information

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<tr>
<th>Dr. Lenhert</th>
<th>Biology</th>
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<tr>
<td>Principal Investigator</td>
<td>Department</td>
</tr>
<tr>
<td>Biology Unit 1</td>
<td><a href="mailto:lenhert@bio.fsu.edu">lenhert@bio.fsu.edu</a></td>
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<tr>
<td>Building</td>
<td>Laboratory room</td>
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### Standard Microbiological Practices

Aside from the standard policies, procedures, and protocols for emergency situations established by the facility director; appropriate special policies and procedures have been developed.

Access to the room is limited to the fewest number of individuals possible. Personnel who must enter the room for program or service purposes when work is in progress are advised of the potential hazard.

An appropriate medical surveillance program is in place. All personnel receive appropriate immunizations or tests for the agents handled or potentially present (e.g., hepatitis B vaccine, TB skin testing).

A biosafety manual is prepared or adopted. Personnel are advised of special hazards, and are required to read and follow instructions on practices and procedures.

Eating, drinking, smoking, handling contact lenses, applying cosmetics, and storing food for human consumption are not permitted in the laboratory.

All procedures are carefully performed to minimize the creation of aerosols or splatters.

Equipment and work surfaces in the room are routinely decontaminated with an effective disinfectant after work with the infectious agent and especially after overt spills, splashes, or other contamination by infectious materials.

All infectious samples are collected, labeled, transported, and processed in a manner that contains and prevents transmission of the agent(s). All wastes from the laboratory (including tissues, media, sharps, and other refuse) are transported in leak-proof, covered containers for appropriate disposal in compliance with applicable institutional or local requirements. The outer surface of the containers is disinfected prior to moving the material. Autoclaving of the contents prior to incineration is recommended.

Policies for the safe handling of sharps are instituted:

- Sharps precautions are in place (needles, slides, pipettes, caps, tubes, scalpels).
- Syringes that re-sheathe the needle, needle-less systems, and other safe devices should be used when appropriate.
- Plastic-ware should be substituted for glassware whenever possible.
- Sharps restricted unless no other alternative exists.
- Broken glassware is handled by mechanical means.

Personnel wash their hands after handling cultures after removing gloves, and before leaving the facility.
A biohazard sign must be posted on the entrance whenever infectious agents are present. The hazard warning sign identifies the infectious agent(s) in use, lists the name and telephone number of the responsible person(s), and indicates the special requirements (e.g., the need for immunizations and respirators) for entering the laboratory.

An insect and rodent control program is in effect.

Special Practices
Access is restricted when working with infectious material.

All personnel receive appropriate training on the potential hazards associated with the work involved, the necessary precautions to prevent exposures, and the exposure evaluation procedures. Personnel receive annual updates, or additional training as necessary for procedural or policy changes. Records of all training provided are maintained. In general, persons who may be at increased risk of acquiring infection, or for whom infection might be unusually hazardous, are not allowed in the laboratory unless special procedures can eliminate the extra risk.

Access allowed to personnel knowledgeable of hazard and received appropriate training.
Personnel receive required immunizations and testing when appropriate.
Baseline serum collected when needed.
Laboratory personnel knowledgeable of biological hazard.
Principal Investigator ensures personnel receive appropriate training and annual updates (log book recommended).
Principal Investigator responsible for ensuring personnel demonstrates proficiency in standard and specific microbiological procedures.
Open manipulation with infectious materials is conducted in the BSC. Appropriate PPE is used for open bench work.
Specimen containers are leak proof, covered and placed in a secondary container during transport from the laboratory.
All equipment must be appropriately decontaminated prior to removal from the room.
Equipment and work surfaces disinfected regularly, after work with infectious material, and after spills or overtly contamination
• Spills decontaminated and cleaned by trained staff and spill procedures posted (recommended)
• Contaminated equipment is decontaminated prior to removal from the laboratory
Spills and accidents which result in overt exposures to infectious materials must be immediately reported to the Principal Investigator, Facility Director and Environmental Health & Safety. Medical evaluation, surveillance, and treatment are provided as appropriate and written records are maintained.
Animal and plants not involved in work are not permitted in the laboratory.

Safety Equipment (Primary Barriers)
Gowns, uniforms, or laboratory coats are worn while in the laboratory. Gowns, uniforms, and laboratory coats are removed before leaving and left in the laboratory. Gloves are worn when handling infected s and when skin contact with infectious materials is unavoidable.
Personal protective equipment is used based on risk assessment determinations. Appropriate face/eye and respiratory protection should be worn.
PPE is not worn outside of the laboratory.
Gloves are changed frequently and hands washed afterwards. Gloves are not reused.
Alternative to latex gloves are should be available.
Biological safety cabinets, other physical containment devices, and/or personal protective equipment (e.g., respirators, face shields) are used whenever conducting procedures with a high potential for creating aerosols.
All manipulations of infectious material are conducted in a class II or III biological safety cabinet (BSC) when:
• A potential for aerosols or splashes exist.
• High concentrations of the agents are used.
Face protection is used for work outside the BSC that may generate splashes.
Laboratory Facilities (Secondary Barriers)

The laboratory is separated from areas that are open to unrestricted personnel traffic within the building.

Access to the laboratory is limited by secure locked doors. External doors are self-closing and self-locking. Doors to rooms open inward, are self-closing, and are kept closed when experimental s are present. Cubicle room inner doors may open outward or be horizontal or vertical sliding.

The laboratory is designed, constructed, and maintained to facilitate cleaning and housekeeping. The interior surfaces (walls, floors, and ceilings) are water resistant.

Laboratory is easy to clean. No carpets or rugs.

Laboratory furniture is appropriate for load and use. Spaces are accessible for cleaning. No fabric covered chairs.

Bench tops are impervious to water and chemical resistant.

BSC located in away from doors, heavily traffic areas, etc. to maintain airflow.

BSC is certified annually. Last date certified:_______________________

Vacuum lines protected by disinfectant traps and HEPA filters or equivalent

Internal facility appurtenances, such as light fixtures, air ducts, and utility pipes, are arranged to minimize horizontal surface areas.

Any windows must be resistant to breakage. Where possible, windows should be sealed. If the laboratory has windows that open, they are fitted with fly screens.

If floor drains are provided, the traps are always filled with an appropriate disinfectant.

An autoclave is available in the facility to decontaminate infectious waste.

Autoclave use procedures are in place.

Eyewash readily available inside the laboratory.

A hand-washing sink is in the laboratory, as well as elsewhere in the facility.

Illumination is adequate for all activities, avoiding reflections and glare that could impede vision.

Negative airflow is recommended.

Training of Personnel

Documented BSL-2 training?

Documented special training or Bloodborne Pathogen training?

Biological Safety Manual and Exposure Control Plan adopted (copy on file with Biological Safety Office)

Comments:

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Principal Investigator acknowledgement

I understand that I will be required to comply with federal, state, and local regulations that pertain to all my research and laboratory activities. I accept responsibility for providing, either through scheduling or teaching, training to all personnel involved in my laboratory. The information here is accurate and complete.

Principal Investigator (please print)  Principal Investigator signature  Date

Environmental Health & Safety Acknowledgement

Biological Safety Officer (please print)  Biological Safety Officer signature  Date