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| **Biosafety Criteria for BSL-1 Laboratories**  **Working with Genetically Modified *Drosophila* spp.**  **Texas A&M University** | | | | | | | | | | | | | | | | | |
| Principal Investigator: | | | | IBC Protocol Number: | | | | | | | Date: | | | | | | |
| Additional Contact: | | | | Department: | | | | | | | Office of Biosafety: | | | | | | |
| Purpose:  Initial  3-Year Renewal  Annual Review  Amendment | | | | | | | | | | | | | | | | | |
| **Locations Visited:** | | | | | | | | | | | | | | | | | |
| **Location ID** | | **Building #/Name** | | | **Room Number** | **Biosafety Level** | | | | **Shared Lab?** | | | | | | **Certified/Not Certified**  **(Date)** | |
| **1** | |  | | |  |  | | | |  | | | | | |  | |
| **2** | |  | | |  |  | | | |  | | | | | |  | |
| **3** | |  | | |  |  | | | |  | | | | | |  | |
| **4** | |  | | |  |  | | | |  | | | | | |  | |
| **5** | |  | | |  |  | | | |  | | | | | |  | |
| **6** | |  | | |  |  | | | |  | | | | | |  | |
| **List of Agents that will be used/stored in lab:** | | | | | | | | | | | | | | | | | |
| Bacteria | | |  | | | | | | | | | | | | | | |
| Virus/viral vectors | | |  | | | | | | | | | | | | | | |
| Fungal | | |  | | | | | | | | | | | | | | |
| Cell lines | | |  | | | | | | | | | | | | | | |
| Other | | |  | | | | | | | | | | | | | | |
| **General Comments:** | | | | | | | | | | | | | | | | | |
| **A** | **Standard Microbiological Practices** | | | | | | | | **Yes** | | | | **No** | | **Comments/Notes** | |
| A1 | The laboratory supervisor enforces the institutional policies that control safety in and access to the laboratory. | | | | | | |  | | | | |  | |  | |
| A2 | The laboratory supervisor ensures that laboratory personnel receive appropriate training regarding their duties, potential hazards, manipulations of infectious agents, necessary precautions to minimize exposures, and hazard/exposure evaluation procedures (e.g., physical hazards, splashes, aerosolization, etc.) and that appropriate records are maintained. Personnel receive annual updates and additional training when equipment, procedures, or policies change. All persons entering the facilities are advised of the potential hazards and the appropriate safeguards, and are instructed to read and follow instructions on practices and procedures. An institutional policy regarding visitor training, occupational health requirements, and safety communication is considered. | | | | | | |  | | | | |  | |  | |
| A3 | Personal health status may affect an individual’s susceptibility to infection and ability to receive available immunizations or prophylactic interventions. Therefore, all personnel, and particularly those of  reproductive age and/or those having conditions that may predispose  them to increased risk for infection (e.g., organ transplant, medical  immunosuppressive agents), are provided information regarding immune competence and susceptibility to infectious agents. Individuals having such conditions are encouraged to self-identify to the institution’s healthcare provider for appropriate counseling and guidance. | | | | | | |  | | | | |  | |  | |
| A4 | A safety manual specific to the facility is prepared or adopted in consultation with the facility director and appropriate safety professionals. The safety manual is available, accessible, and periodically reviewed and updated as necessary. | | | | | | |  | | | | |  | |  | |
| a. | The safety manual contains sufficient information to describe the biosafety and containment procedures for the organisms and biological materials in use, appropriate agent-specific decontamination methods, and the work performed. | | | | | | |  | | | | |  | |  | |
| b. | The safety manual contains or references protocols for emergencies, including exposures, medical emergencies, facility malfunctions, and other potential emergencies. Training in emergency response procedures is provided to emergency response personnel and other responsible staff according to institutional policies. | | | | | | |  | | | | |  | |  | |
| A5 | A sign incorporating the universal biohazard symbol is posted at the entrance to the laboratory when infectious materials are present. Posted information includes the following: laboratory biosafety level, the supervisor’s or other responsible personnel’s name and telephone number, PPE requirements, general occupational health requirements (e.g., immunizations, respiratory protection), and required procedures for entering and exiting the laboratory. Agent information is posted in accordance with the institutional policy. | | | | | | |  | | | | |  | |  | |
| A6 | Long hair is restrained so that it cannot contact hands, specimens, containers, or equipment. | | | | | | |  | | | | |  | |  | |
| A7 | Gloves are worn to protect hands from exposure to hazardous materials. | | | | | | |  | | | | |  | |  | |
| a. | Glove selection is based on an appropriate risk assessment. | | | | | | |  | | | | |  | |  | |
| b. | Gloves are not worn outside the laboratory. | | | | | | |  | | | | |  | |  | |
| c. | Change gloves when contaminated, glove integrity is compromised, or when otherwise necessary. | | | | | | |  | | | | |  | |  | |
| d. | Do not wash or reuse disposable gloves, and dispose of used gloves with other contaminated laboratory waste. | | | | | | |  | | | | |  | |  | |
| A8 | Gloves and other PPE are removed in a manner that minimizes personal contamination and transfer of infectious materials outside of the areas where infectious materials and/or animals are housed or manipulated. | | | | | | |  | | | | |  | |  | |
| A9 | Persons wash their hands after working with potentially hazardous materials and before leaving the laboratory. | | | | | | |  | | | | |  | |  | |
| A10 | Eating, drinking, smoking, handling contact lenses, applying cosmetics, and storing food for human consumption are not permitted in laboratory areas. Food is stored outside the laboratory area. | | | | | | |  | | | | |  | |  | |
| A11 | Mouth pipetting is prohibited. Mechanical pipetting devices are used. | | | | | | |  | | | | |  | |  | |
| A12 | Policies for the safe handling of sharps, such as needles, scalpels, pipettes, and broken glassware are developed, implemented, and followed; policies are consistent with applicable state, federal, and local requirements. Whenever practical, laboratory supervisors adopt improved engineering and work practice controls that reduce risk of sharps injuries. Precautions are always taken with sharp items. These  include: | | | | | | |  | | | | |  | |  | |
| a. | Plastic ware is substituted for glassware whenever possible. | | | | | | |  | | | | |  | |  | |
| b. | Use of needles and syringes or other sharp instruments is limited in the laboratory and is restricted to situations where there is no alternative (e.g., parenteral injection, blood collection, or aspiration of fluids from laboratory animals or diaphragm bottles). Active or passive needle-based safety devices are to be used whenever possible. | | | | | | |  | | | | |  | |  | |
| i. | Uncapping of needles is performed in such a manner to reduce the potential for recoil causing an accidental needlestick. | | | | | | |  | | | | |  | |  | |
| ii. | Needles are not bent, sheared, broken, recapped, removed from disposable syringes, or otherwise manipulated by hand before disposal. | | | | | | |  | | | | |  | |  | |
| iii. | If absolutely necessary to remove a needle from a syringe  (e.g., to prevent lysing blood cells) or recap a needle (e.g.,  loading syringes in one room and injecting animals in another),  a hands-free device or comparable safety procedure must be used (e.g., a needle remover on a sharps container, the use of forceps to hold the cap when recapping a needle). | | | | | | |  | | | | |  | |  | |
| iv. | Used, disposable needles and syringes are carefully placed in puncture-resistant containers used for sharps disposal immediately after use. The sharps disposal container is located as close to the point of use as possible. | | | | | | |  | | | | |  | |  | |
| c. | Non-disposable sharps are transported in a hard-walled container to a processing area for decontamination, preferably by autoclaving. | | | | | | |  | | | | |  | |  | |
| d. | Broken glassware is not handled directly. Instead, it is removed using a brush and dustpan, tongs, or forceps. | | | | | | |  | | | | |  | |  | |
| A13 | Perform all procedures to minimize the creation of splashes and/or aerosols. | | | | | | |  | | | | |  | |  | |
| A14 | Decontaminate work surfaces after completion of work and after any spill or splash of potentially infectious material with appropriate disinfectant. Spills involving infectious materials are contained, decontaminated, and cleaned up by staff who are properly trained and equipped to work with infectious material. A spill procedure is developed and posted within the laboratory. | | | | | | |  | | | | |  | |  | |
| A15 | Decontaminate all cultures, stocks, and other potentially infectious materials before disposal using an effective method, consistent with applicable institutional, local, and state requirements. Depending on  where the decontamination will be performed, the following methods are used prior to transport: | | | | | | |  | | | | |  | |  | |
| a. | Materials to be decontaminated outside of the immediate laboratory are placed in a durable, leak-proof container and secured for transport. For infectious materials, the outer surface of the container is disinfected prior to moving materials and the transport container has a universal biohazard label. | | | | | | |  | | | | |  | |  | |
| b. | Materials to be removed from the facility for decontamination are packed in accordance with applicable local, state, and federal regulations. | | | | | |  | | | | |  | | |  | |
| A16 | An effective integrated pest management program is implemented. | | | | | |  | | | | |  | | |  | |
| A17 | Animals and plants not associated with the work being performed are not permitted in the laboratory. | | | | | |  | | | | |  | | |  | |
| **B** | **Special Practices: None required** | | | | | | **Yes** | | | | | **No** | | | **Comments/Notes** | |
| **C** | **BSL-1 Safety Equipment (Primary Barriers and Personal Protective Equipment)** | | | | | | **Yes** | | | | | **No** | | **Comments/Notes** | | |
| C1 | Special containment devices or equipment, such as biosafety cabinets (BSCs), are not generally required. | | | | | |  | | | | |  | |  | | |
| C2 | Protective laboratory coats, gowns, or uniforms are worn to prevent contamination of personal clothing. | | | | | |  | | | | |  | |  | | |
| C3 | Protective eyewear is worn by personnel when conducting procedures that have the potential to create splashes or sprays of microorganisms or other hazardous materials. Eye protection and face protection are disposed of with other contaminated laboratory waste or decontaminated after use. | | | | | |  | | | | |  | |  | | |
| C4 | In circumstances where research animals are present in the laboratory, the risk assessment considers appropriate eye, face, and respiratory protection, as well as potential animal allergens. | | | | | |  | | | | |  | |  | | |
| **D** | **Laboratory Facilities (Secondary Barriers)** | | | | | | **Yes** | | | | | **No** | | **Comments/Notes** | | |
| D1 | Laboratory doors are self-closing and have locks in accordance with the institutional policies. | | | | | |  | | | | |  | |  | | |
| D2 | Laboratories have a sink for hand washing. It should be located near the exit door. | | | | | |  | | | | |  | |  | | |
| D3 | An eyewash station is readily available in the laboratory. | | | | | |  | | | | |  | |  | | |
| D4 | The laboratory is designed so that it can be easily cleaned. | | | | | |  | | | | |  | |  | | |
| a. | Carpets and rugs in laboratories are not appropriate. | | | | | |  | | | | |  | |  | | |
| b. | Spaces between benches, cabinets, and equipment are accessible for cleaning. | | | | | |  | | | | |  | |  | | |
| D5 | Laboratory furniture can support anticipated loads and uses. | | | | | |  | | | | |  | |  | | |
| a. | Benchtops are impervious to water and resistant to heat, organic solvents, acids, alkalis, and other chemicals. | | | | | |  | | | | |  | |  | | |
| b. | Chairs used in laboratory work are covered with a non-porous material that can be easily cleaned and decontaminated with appropriate disinfectant. | | | | | |  | | | | |  | |  | | |
| D6 | Laboratory windows that open to the exterior are not recommended. However, if a laboratory does have windows that open to the exterior, they are fitted with screens. | | | | | |  | | | | |  | |  | | |
| D7 | Illumination is adequate for all activities and avoids reflections and glare that could impede vision. | | | | | |  | | | | |  | |  | | |
| **E** | **Special Practices: Work with Genetically Modified *Drosophila* spp.** | | | | | | **Yes** | | | | | **No** | | **Comments/Notes** | | |
| E1 | Ensure doors are kept closed when working with genetically modified *Drosophila* and that doors of the laboratory facilities are only opened to enter or exit the facility. | | | | | |  | | | | |  | |  | | |
| E2 | Ensure that fly cultures are handled in a manner that minimizes the escape of transgenic flies. | | | | | |  | | | | |  | |  | | |
| E3 | If present, ensure that windows are fixed shut or fly screens are installed. | | | | | |  | | | | |  | |  | | |
| E4 | Ensure exhaust vents or air returns are protected by filters, screens or other material to prevent flies from escaping. | | | | | |  | | | | |  | |  | | |
| E5 | Ensure fly traps are in use and monitored regularly (liquid/solid attractants may be used). | | | | | |  | | | | |  | |  | | |
| E6 | If there is an adjacent office or a break room, fly traps are recommended in those spaces as well. | | | | | |  | | | | |  | |  | | |
| E7 | Ensure insect diets are kept in sealed containers. | | | | | |  | | | | |  | |  | | |
| E8 | Ensure fly morgues are capped when not in use and labelled as waste. | | | | | |  | | | | |  | |  | | |
| E9 | Ensure culture bottles are clearly labelled with the strain, date of transfer and initials of lab personnel who handled the bottle | | | | | |  | | | | |  | |  | | |
| E10 | Ensure that the *Drosophila* lab has minimum furniture and is maintained clean and free of clutter. Plants, aquarium etc. not allowed in the fly rooms | | | | | |  | | | | |  | |  | | |
| E11 | Ensure flies are frozen (per IBC requirements) or autoclaved prior to disposal. | | | | | |  | | | | |  | |  | | |
| E12 | Ensure an effective pest management program is in place to prevent other insects from entering the facility (e.g. cockroaches, houseflies, spiders etc.) | | | | | |  | | | | |  | |  | | |