Standard Operating Procedure

Biosafety Level 2

Section 1 – Lab-Specific Information

Department:	Biology
Date SOP was written:	10/3/2019
Principal Investigator:	Vincent Martin
Internal Lab Safety Coordinator/Lab Manager:	Smita Amarnath & Nicholas Gold
Location covered by this SOP:	*GE S126.00 GENOME FOUNDRY / MICROBIAL SIDE*

Section 2 – General Rules about Using the Facility

- Personnel can only handle instrumentation on which they have been trained.
- Instrument training is provided by the Platform Coordinators only.
- Trained users can bring with them no more than one untrained observer at a time.
- Users should act in a responsible manner and refrain from tampering with ongoing experiments on other instruments.
- Instrument reservations should be made in advance using the on-line booking system found at https://bookings.fungalgenomics.ca/.
- After using an instrument, personnel must log their activity (date, name, comments) in the digital log file found at http://biofoundry.concordia.ca/.
- The glass door dividing the Microbial Side from the Mammalian Side should never be opened unless it is needed as an emergency exit.

Section 3 – Biosafety Level 2 Requirements

- The laboratory supervisor must enforce the institutional procedures that control access to the laboratory.
- Lab staff must wash their hands after working with potentially hazardous materials and before leaving the laboratory.
- Eating, drinking, smoking, handling contact lenses, applying cosmetics, and storing food for human consumption is not be permitted in laboratory areas. Food must be stored outside the laboratory area in cabinets or refrigerators designated and used for this purpose.

- Mouth pipetting is prohibited; mechanical pipetting devices must be used.
- Perform all procedures to minimize the creation of splashes and/or aerosols.
- Plastic ware should be substituted for glassware whenever possible.
- An effective integrated pest management program is required.
- Animal and plants not associated with the work being performed must not be permitted in the laboratory.
- An eyewash station must be readily available.

Section 4 –Microbial Agent Awareness

The laboratory supervisor must ensure that laboratory personnel receive appropriate training regarding their duties and demonstrate proficiency in standard and special microbiological practices before working with BSL2 agents.

Personnel must receive annual updates or additional training new biohazards are added or other lab changes occur.

All persons entering the laboratory must be advised of the potential hazards and meet specific personal protection requirements.

Section 5 – Personal Protective Equipment (PPE)

At a minimum, gloves, outerwear (single use when directly handling high hazards), eye protection.

The Principal Investigator must ensure that laboratory personnel receive appropriate training regarding biohazardous agents, the tasks that involve handling or exposure to biohazards, the type of required personal protective equipment, and demonstrate proficiency in utilizing this equipment.

Lab staff must receive annual updates or additional training when procedures or hazards change.

Protective laboratory coats for laboratory use must be worn while working with hazardous materials. Remove protective clothing before leaving for non-laboratory areas. Do not take laboratory clothing home for washing.

Eye and face protection (goggles, face shield or other splatter guard) is used for anticipated splashes or sprays of infectious or other hazardous materials when the microorganisms must be handled outside the Biosafety Cabinet or containment device.

Nitrile glove are preferred as they protect against bio-agents, chemical exposure, and reduce the potential for allergic reaction

- Change gloves when contaminated or if glove integrity is compromised. Remove gloves and wash hands when work with hazardous materials has been completed and before leaving the

laboratory. Do not wash or reuse disposable gloves. Dispose used gloves with other contaminated laboratory waste.

- Gloves must not be worn outside the laboratory.

Section 6 – Sharps

Sharps are items that are capable of puncturing, cutting, or abrading the skin: glass and plastic pipettes, broken glass, test tubes, petri dishes, razor blades, needles, syringe with needle. Careful management of needles and other sharps are of primary importance. Needles must not be bent, sheared, broken, recapped, removed from disposable syringes, or otherwise manipulated by hand before disposal. Lab staff that routinely works with sharps and handle sharps waste should use appropriate personal protective equipment, tools, barrier protection, or engineering controls to protect themselves.

Section 7 - Spill Decontamination

Spill contingencies must be planned in advance. For example, what supplies and equipment should you maintain in your area to assist you in the event of an accidental spill, e.g., personal protective equipment, disinfecting solutions, spill control materials.

Risk Group 2 Biohazards Spills:

Evacuate the room immediately, close doors, remove all contaminated clothing, and decontaminate body surfaces. Contact EH&S for decontamination instructions.

Allow enough time (at least 30 minutes) for droplets to settle and aerosols to be reduced by the ventilation system before entering.

Don protective clothing and approved respiratory protective equipment.

Decontaminate the spill with an appropriate disinfectant (*e.g.*, 1:10 solution of household bleach in water).

Decontaminate and dispose of contaminated items.

Following cleanup, responders should wash or shower with a germicidal soap.

Section 8 – Decontamination

Decontaminate work surfaces after completion of work and after any spill or splash of potentially infectious material with 10% bleach solution or 70% ethanol or other appropriate disinfectant.

Decontaminate all cultures, stocks, and other potentially infectious materials before disposal.

Materials to be decontaminated outside of the immediate laboratory must be placed in an biohazard bag and kept secured until decontaminated.

Equipment must be decontaminated before repair, maintenance, or removal from the laboratory.

Decontaminate all spills, equipment, counters, and other surfaces. A 10% bleach solution or 70% ethanol can be used to disinfect and a strong detergent and water rinse may remove most drug residues. Repeating the cleaning steps will provide addition drug removal.

Decontamination materials need to be available in case of a spill during transportation.

Section 9 – Waste Disposal Procedures

Biological waste must be managed separately from chemical waste. The most common example where chemical waste is mistaken for biological waste is agarose gel contaminated with ethidium bromide. This type of material should always be managed as chemical waste. When both chemical and biological waste types exist, the biological agent(s) should be treated first. Once the biological agents have been deactivated by either autoclave or chemical disinfection, the remaining chemical waste should be submitted on a Hazardous Materials Pickup Request Form.

Laboratory Security

All laboratory personnel have a responsibility to protect university property from misuse and theft of hazardous materials, particularly those that could threaten human health. At a minimum, the following security measures should be employed in all campus laboratories:

- The laboratory door must remain locked when not occupied; even for short periods of time.
- Always feel free to question anyone that enters the lab that you do not know and ask to see identification if necessary.
- If you see anything suspicious or someone displays suspicious behavior, immediately report it to the Campus Security by dialing (514) 848-2424 extension 3717.
- Any sensitive information or particularly hazardous biological agents should not be stored out in the open where anyone can readily have access to them. These types of materials must be stored in a secure location and lab personnel must be present when these materials are in use.

Section 10 – Documentation of Safety Training (signature of all users is required)

- Prior to conducting any work in the BSL2 laboratory, designated personnel must provide training to his/her laboratory personnel specific to the hazards involved in working with this substance, work area decontamination, and emergency procedures.
- The Principal Investigator must provide his/her laboratory personnel with a copy of this SOP.

- The Principal Investigator must ensure that his/her laboratory personnel have attended appropriate laboratory safety training or refresher training annually.

I have read and understand the content of this SOP.

I agree to contact my Supervisor if I have any questions or if I plan to make modifications to this procedure.

Repeated failures to follow the guidelines can result in loss of access and privileges.

Name	Signature	Date

Name	Signature	Date

Name	Signature	Date

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