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## 1.0 Contact Information

| | | | |
|---|---|---|---|
| **Principal Investigator:** | Thomas Kukar | **Department:** | Pharmacology |
| **Building:** | | **Room:** | |
| **PI Phone #:** | | **PI Email:** | |
| **Alternate Contact:** | Kathryn Hudson | **Alternate Contact Phone #:** | |
| **Alternate Contact Email:** | | | |
| **SOP Revision Date:** | May 28 2013 | | |

## 2.0 Responsibilities

***Principle Investigators (PIs)***

- Ensure all procedures documented in this standard operating procedures (SOP) are followed by all personnel working in the lab.

***Research Personnel***

- Follow all procedures listed in SOP.

## 3.0 Biological Agents and Other Infectious Material

| Agent | Description | Risk Group | Potential Hazards | Signs & Symptoms | Required Immunizations |
|---|---|---|---|---|---|
| Human cell lines e.g.; HEK 293, human blood, contaminated specimens (brain tissue) | Agents are associated with human disease which is rarely serious – moderate risk. | 2 | Percutaneous injury, ingestion, mucous membrane exposure | N/A | Hepatitis B |
| E.coli bacteria | Not associated with disease in healthy adult humans – low risk | 1 | Ingestion, mucous membrane exposure | Diarrhea and stomach cramps; conjunctivitis | None |
| Adeno associated virus (AAV) | Viral vectors | 2+ | Adenovirus is a pathogen of respiratory, gastrointestinal mucosa and mucous membranes | Cold, flu/pneumonia; conjunctivitis; gastric upset | None |

# 4.0 Introduction to General Safety and Training for the BSL-2 Lab

## 4.1 Required Training

The minimum requirements for qualification to work in the Thomas Kukar BSL-2 lab are:

- Blood Borne Pathogens for Researchers.
- Biosafety Training.
- Research Laboratory Training.
- All training is coordinated through Emory Environmental Health and Safety Office and is taken on-line. Researchers are required to take these courses annually except Biosafety training which is required every 3 years.
- Documentation is to be kept on file in lab.
- Additional training is required for those individuals working with research animals.
- This document will provide the basis of training in conjunction with EHSO training. Refer to the EHSO website or Lab Supervisor (LS)/PI for more information.

## 4.2 Administrative Procedures

It is the responsibility of each employee to carefully consider every action taken in the BSL-2 lab and its potential impact on possible exposure or contamination, and to follow established Standard Operating Procedures (SOPs) and protocols diligently and without variance.

- All employees working in the lab will be will be offered the Hepatitis B inoculation. If declined, then a formal declination form must be submitted to EHSO via the LS.
- No employee will be trained to work in the lab without the express permission of Dr. Kukar.
- New SOPs and protocols must be approved by the PI before initiation.
- Current SOPs and protocols will be reviewed and/or revised by LS/PI annually.

## 4.3 Description of Laboratory

The Laboratory is located in the _ building in rooms __ and __. Animal work is conducted in the Division of Animal Resources in the __ Building located on the __ and __ floors.

## 4.4 General Laboratory Safety

Work with the agent will be performed in the Kukar Lab as well as in Emory's animal facilities department in the __ Building.

- Laboratory employees must immediately notify the LS or PI in case of an accident, injury, illness, or overt exposure associated with laboratory activities.
- No eating, drinking, smoking, handling contact lenses, or applying cosmetics in the lab at any time.
- No animals or minors (persons under the age of 18), or immuno-compromised persons will be allowed to enter the lab at any time.
- Food, medications, or cosmetics should not be brought into the lab for storage or later use. Food is stored outside in areas designated specifically for that purpose.
- No open-toed shoes or sandals are allowed in the laboratory.
- PPE includes gloves, lab coat, and eye protection.
- All skin defects such as cuts, abrasions, ulcers, areas of dermatitis, etc. should be covered with an occlusive bandage.

- Follow all manufacturer's instructions and SOPs when using any of the laboratory equipment.
- Wash hands:
  - After removing gloves, and
  - Before leaving the laboratory.
- Razor blades, scalpels, and hypodermic needles ("sharps") should be discarded into the "sharps" container in lab __. These are disposed of offsite through Stericycle. LS arranges for disposal as needed. Do not recap needles. In lab when in use these should be kept in a petri dish with a lid for safety.
- Work surfaces will be decontaminated as needed with 70% ethanol. Effective dilution is 70-85%. Stocks of ethanol are available in lab. Alcohols are effective against a broad spectrum of bacteria and many viruses. Ethanol is fast acting and leaves no residue and is non-corrosive.
- Cell culture and biological waste: to be decontaminated by autoclaving before disposal. Liquid waste (non-organic) can be decontaminated with bleach, bringing the solution to 10% bleach, and discarded in the sink. No other chemicals can be discarded in the sink. All chemicals are disposed of through EHSO (LS coordinates pick up).
- Bleach is effective against vegetative bacteria, fungi, most viruses at 1:100 dilution. Effective against bacterial spores at 1:10 dilution. Bleach is very corrosive and is rapidly inactivated by organic matter.
- Biomedical waste (human or rodent tissue or bodily fluids) is disposed of through Stericycle, the Emory University contractor. Waste is collected in red bags in lab __ or in the animal facility.

## 4.5 General Biosafety Cabinet Safety

- Turn on the blower in the cabinet at least 10 minutes before placing infectious materials into the hood.
- Check the certification sticker and Magnehelic gauge to verify that the biosafety cabinet is working properly.
- Check the air flow indicator to verify that the air flow is operating properly.
- Gloves must be worn at all times.
- DO NOT disrupt the airflow through the hood by placing ANY item on the grills or by opening the door to the corridor.
- In general, the interior of the hood should be considered to be a contaminated zone, even though every effort is made to keep the surfaces clean, as is consistent with accepted good microbiological practice and sterile technique.
- Clean the inside surfaces of the BSC with 70% ethanol after completion of work.
- Allow the blower to run for at least 10 minutes following use.
- The UV light is turned on at the end of the day (all night). UV lights must be turned off before work begins in the hood. Do not look directly at UV lights as this can cause eye damage.

## 4.6 General Accident Procedures

- Spills - Apply paper towels to absorb the spill, and then soak paper towels with *10% bleach before disposal.* For spills outside the biosafety hood, alert others in the area. Use N95 mask if there is a possibility of harmful aerosols.

- Follow all aspects of the emergency SOPs without exception. Refer to the Emory University "Just in Time" guide by the whiteboard for more information.

# 5.0 Containment Requirements

## 5.1 Laboratory Entry and Exit

Entering the lab to begin work:

- Put on appropriate PPE
- Gather all materials for the experiment.

Exiting Laboratory:

- Before exiting the lab, be sure that all required documentation has been completed, the hood and work area are clean, all contaminated waste materials are disposed of properly, and stocks have been returned to the proper storage area.
- Wash your hands.

## 5.2 Specimen Transport

Transport of biological materials to another building or lab within the same building should be done in a covered container.

## 5.3 Work Within the Laboratory

- Cell Culture Work
  - During cell culture work persons must be wearing *gloves and a lab coat.*
  - Preparation of primary containers of agent stock solutions and manipulations of primary containers of agents should be conducted in a biological safety cabinet.
  - The user should verify inward airflow of the biological safety cabinet before initiating work by checking the Magnehelic.
  - All work should be done within the operationally effective zone of the biological safety cabinet.
  - Care should be taken to avoid contaminating medium or other cell culture reagents.
  - Discard pipets and tips appropriately by re-sleeving serological pipets (where possible) and placing them in the trash underneath the BSC. Collect regular pipet tips in a beaker in the hood and place them in the trash when work is complete. LS will autoclave and dispose of the trash when approximately ¾ full. Secure the top of the bag in a gooseneck fashion and seal with autoclave tape.
  - The interior of the hood should be cleaned periodically.
  - When vacuum lines are used with systems containing agents, they will be protected with in-line filters to prevent entry of agents into the lines, and will be protected by a liquid trap containing bleach. **NOTE: No biological agent-containing material should be allowed into the drain of a sink unless the material has been decontaminated with bleach!**
  - Working outside the Biosafety Cabinet: Working outside the hood includes such actions as transporting samples from the hood to a centrifuge, incubator, sonicator or water bath.

  - Vials or tubes being transported to the centrifuge, water bath, etc. should be in a stable rack. No liquid (biological waste) should be allowed into the sink drain unless it contains a final concentration of 10% bleach.
  - Decontaminate items entering or exiting the BSC with 70% ethanol.
- Adeno-Associated Virus (AAV) – the vector used to inject construct into rodents.
  - AAV aliquots are kept in -80C until use.
  - Injections are performed in ABSL-2 in __: PPE is worn (mask, shoe covers, gloves, gown); surfaces are cleaned before/after procedure; syringe is loaded.
  - Animals in static cages (no openings) are quarantined in __ for 3 days.
  - Cage is changed to transfer animals to the house room in __; dirty cages are bagged and left in __ for proper disposal/cleaning.
  - Animals are euthanized by asphixiation with CO2 and then decapitated. Bagged carcass (proper "body bags") and cage are disposed of in __ fridge and dirty rack respectively. Proper PPE (lab coat, gloves, mask) is used during the procedure and discarded in biohazard bin in __ by the cell culture room.
  - All surfaces are wiped with either 70% ethanol or 10% Chlorox bleach.

# 6.0 Proper Use of Equipment

## 6.1 Biological Safety Cabinets

Class II cabinets (Type A, B1, B2 and B3) provide personnel, environment and product protection. Air is drawn around the operator into the front grille of the cabinet, which provides personnel protection. In addition the downward laminar flow of HEPA filtered air within the cabinet provides protection by minimizing the chance of cross contamination along the work surface of the cabinet. Because cabinet air passes through the exhaust HEPA filer, it is contaminant-free (environmental protection) and may be re-circulated back into the laboratory (Type A) or ducted out of the building (Type B).

- To assure sterility inside the cabinet and establish proper air flow for containment, the blower should be turned on at least ten minutes before infectious materials are to be put into the biosafety cabinet.
- Biosafety cabinets must be certified prior to use. A qualified outside contractor must certify these cabinets annually. Check the certification sticker on the front of the unit to verify your biosafety cabinet's condition.
- The biosafety cabinet air flow ("Magnehelic") gauge should be checked (reading is equal to approximately 0.5 inches) to assure proper operation of the cabinet before placing any materials into it. Readings indicate relative pressure drop across the HEPA filter. Higher readings may, therefore, indicate filter clogging. Zero readings may indicate loss of filter integrity. In either of these cases, notify the Laboratory Manager or PI.
- NEVER place anything over the front or rear grill of a biosafety cabinet.
- Disrupting the airflow into the front grill allows contaminated air from inside the cabinet to blow into the lab or directly at the person sitting at the cabinet. It also allows non-sterile air from the room to blow into the biosafety cabinet over the experiments.

- Materials should be placed in the cabinet so as not to block air flow into the rear grill. Leave a few inches for air to flow around objects. Any disruption of the air flow in the cabinet decreases its effectiveness.
- Before starting your work, make sure that you have everything you need in the cabinet. The fewer times you pull your hands out of the cabinet, the less disruption of the air flow.
- Work should be performed in the center of the work surface of the cabinet whenever possible. Work outward progressing from clean to dirty (contaminated).
- Waste disposal: solid waste. Dispose of waste in the clear polypropylene bag (commonly called a biohazard or autoclave bag) lining a trashcan underneath the BSC. Liquid waste is collected in the trap (containing bleach) underneath the BSC. Liquid waste is decontaminated by adding additional bleach and soaking for approximately 20 minutes before disposal.
- After the cabinet has been emptied, wipe inner surfaces with 70% ethanol. Do not shut down the blower. Check with other lab users before shutting the BSC down and putting the UV light on overnight.
- The bleach in the vacuum traps must be changed when the flask is about ¾ full. To discard trap liquid, first treat with fresh bleach for 20 minutes, and then empty it into the sink.
- The vacuum filters must be replaced if clogged or if liquid makes contact with the filter. Used filters should be placed in the waste to be autoclaved.
- Spills in the BSC: leave the cabinet turned on. Wearing gloves and lab coat, spray or wipe cabinet walls, work surfaces and equipment with disinfectant (70% ethanol). Flood surfaces if necessary and collect excess in drain pans below the work surface. Allow 30 minutes contact time. Soak up excess with paper towels. Ensure that no solid debris is blown into the area below the grille. Surface disinfect all items that may have been spattered before removing them from the cabinet. Discard all clean up materials into biohazard waste container. Wash hands and exposed skin areas with soap and water for 15 minutes. Notify EHSO if the spill overflows into the interior of the cabinet. It may be necessary to do a more extensive decontamination of the cabinet.
- Personal Protective Equipment (PPE): When using a biological safety cabinet, protective clothing, including gloves and a long-sleeved body covering (gown, laboratory coat, smock, coverall, or similar garment) should be worn so that hands and arms are completely covered to prevent contamination of cultures, skin and street clothing.
- Eye protection should be worn when handling infectious organisms or chemicals.
- These requirements also apply to anyone working in the area while someone else is working at the biosafety cabinet.

## 6.2 Incubators

- Upright $CO_2$ Incubators:
  - Located in 5171. Set at 37°C with 5% $CO_2$.
  - Temperature should be checked each day by all users.
  - Operation manuals are located in a green binder in room __.
  - Be sure that there is sufficient water in the pan at the bottom of the

incubator. dd$H_2O$ is kept in lab for this purpose. Pour water directly into the base of the incubator. There is no pan.
    - If an alarm is sounding, check the panel for the identifying blinking light.
    - If there is no obvious reason for the alarm, contact the Lab Manager or PI.
    - The "CO2 Low" (or High) message indicates a deviation from 5% CO2. Check the hose from the wall to the unit.
    - The "tank farm" must be checked for empty tanks once/week.
    - Decontaminate incubators at least every 6 months using the CONTRACON PROCEDURE in the manual (Chapter 9). This requires the unit to be out of commission for approximately 36 hours so check with other lab users first and clean one unit at a time. Remove <u>everything</u> from the unit as the decontamination procedure requires the unit to be heated to 90°C.
- Shaker/Incubator:
    - Turn off when not in use.
    - Usually set to 37°C.
    - Make sure containers are securely closed. There is a rack to hold centrifuge tubes in the incubator.
    - Flasks should be covered with an aluminum foil cap and secured to the shaking platform using the various clamps provided. Speak to LM if you need to fit additional clamps.
    - Clean up spills straight away using 70% ethanol and paper towels. Dispose of waste as biohazardous waste.

## 6.3 Water Bath

The water bath should be monitored for water level, and filled with <u>distilled water only</u>. The large portion takes 5 liters of water and the small portion 2 liters. The large portion is set permanently to 37°C. The smaller portion is used for higher temperatures and is switched off when not in use. Put a label on the lid to warn other lab users of temperature setting/heat. To prevent growth of any organisms, water should be treated with algicide at the appropriate dilution (see vendor instructions on the bottle). Water baths are cleaned by LM approximately every 2-3 months.

## 6.4 Centrifuges

- For work requiring a centrifuge spin at 4°C turn the centrifuges on half an hour before you need them to allow the temperature to drop properly. Turn them off at the end of the day.
- Always ensure the centrifuge is properly balanced. If not an ugly noise will ensue (and an error message).
- For the large centrifuge: an additional rotor is kept at 4°C that allows for faster spins. Speak to LM if unsure how to go about changing the rotor.
- Make sure your centrifuge caps are closed tightly. Any spills should be cleaned up straight away using 70% ethanol, paper towels and wear gloves. Dispose of as biohazardous trash. A stock of autoclave trash bags of various sizes can be found in room___.

## 6.5 Autoclave

- Autoclaves use pressurized steam to destroy microorganisms, and are the most dependable system available for the decontamination of laboratory waste and the sterilization of laboratory glassware, media and reagents. For efficient heat transfer, steam must flush the air out of the autoclave chamber. Before using the autoclave, check the drain screen at the bottom of the changer and clean it if it is blocked. If the sieve is blocked with debris, a layer of air may form at the bottom of the autoclave preventing efficient operation.
- Container selection: polypropylene bags or biohazard or autoclave bags. These bags are tear resistant but can be punctured or burst in the autoclave. Therefore before autoclaving the bag should be placed in a rigid polypropylene container. These bags are impermeable to steam so for this reason gather the top of the bag loosely into a gooseneck tie and secure with autoclave tape. This will create an opening through which steam can escape.
- Polypropylene containers and pans – polypropylene is a plastic capable of withstanding autoclaving but resistant to heat transfer. Therefore, materials contained in a polypropylene pan will take longer to autoclave than the same materials in a stainless steel pan. To decrease the time required to sterilize material in these containers select a container with the lowest sides and widest diameter possible for the autoclave.
- Stainless steel containers and pans – stainless steel is a good conductor of heat and is less likely to increase sterilizing time, though is more expensive than polypropylene.
- Preparation and loading of materials:
- Fill liquid containers only half full.
- Loosen caps or use vented closures.
- Always put bags of biological waster into pans to catch spills.
- Position biohazard bags on their sides with the bag neck closed loosely.
- Leave space between items to allow steam circulation.
- Household dishpans melt in the autoclave. Don't use them.
- Cycle selection:
    - Use liquid cycle (slow exhaust) when autoclaving liquids to prevent contents from boiling over.
    - Select fast exhaust cycle for glassware.
    - Use fast exhaust and dry cycle for wrapped items.
- Time selection:
    - Take into account the size of the articles to be autoclaved. A 2 liter flask containing 1 liter liquid takes longer to sterilize than four 500mL flasks each containing 250mL of liquid.
    - Material with a high insulating capacity (eg. animal bedding, high sided polyethylene containers) increases the time needed for the load to reach sterilizing temperatures. Therefore when autoclaving racks of pipet tips and tubes of microcentrifuge tubes try not to stack them more than two in height.
    - Biohazardous waste bags should be autoclaved for 50 minutes to assure adequate decontamination.
- Removing the load:
    - Check the chamber pressure is zero.

  - Wear lab coat, eye protection, heat insulating gloves and closed toe shoes.
  - Stand behind the door (or to one side of it if a sash door) when opening it.
  - Slowly open door only a crack. Beware of the rush of steam.
  - After the slow exhaust cycle, open autoclave door and allow liquids to cool for 20 minutes before removing.
- Monitoring and breakdown:
  - In case the machine is broken speak to the Pharmacology Departmental office or Paula Heath (departmental accountant) to report the problem and arrange for a service call.
  - Emory Facilities arranges for periodic testing of the autoclaves to ensure effectiveness.

## 6.6 Chemical Fume Hood

Laboratory fume hoods serve to control exposure to toxic, offensive or flammable vapors, gases and aerosols. Fume hoods are the primary method of exposure control in the laboratory.

- Place apparatus and equipment as far back as possible in hood for safety and optimal performance. Equipment should be placed a minimum of 8 inches inside the hood. Keep electrical connections outside of hood.
- Ensure that equipment or materials do not block the baffle vents in the back of the hood.
- When using a large apparatus inside the hood, place the equipment on blocks, when safe and practical, to allow air flow beneath it.
- Do not place electrical apparatus or other ignition sources inside the hood when flammable liquids or gases are present. Keep in mind that liquids with low flash points may ignite if they are near heat sources such as hot plates or steam lines.
- When using the fume hood, keep your face outside the plane of the hood sash and remain alert to changes in air flow.
- Work at least 6 inches back from the face of the hood. A stripe on the bench surface is a good reminder.
- Always use splash goggles and wear a full face shield if there is possibility of an explosion or eruption.
- Do not make quick motions into or out of the hood, use fans, or walk quickly by the hood opening. All of these will cause airflow disturbances which reduce the effectiveness of the hood.
- Substitute less hazardous or less volatile chemicals where possible.
- Look for process changes that improve safety and reduce losses to the environment (e.g. more accurate chemical delivery systems vs. pouring volatile chemicals from bottles).
- Develop a process to evaluate research proposals ahead of time for potential emissions and look for opportunities to reduce them.
- Limit chemical storage in fume hoods. Keep the smallest amount of chemicals in the hood needed to conduct the procedure at hand.
- Store hazardous chemicals such as flammable liquids in an approved safety cabinet.

- Do not allow hazardous waste to accumulate in the fume hood. Discuss with LS to arrange for disposal of waste on a regular basis (3 months) or when bottles are 2/3 full, whichever comes sooner.
- Keep caps on chemical reagent bottles tight and check fitting on laboratory glassware to minimize vapor loss.
- Always use good housekeeping techniques to maintain the hood at optimal performance levels. Excessive storage of materials or equipment can cause eddy currents or reverse flow resulting in contaminants escaping from the hood.
- Proper Sash Use:
    - The sash should be kept closed, except when working within the hood is necessary, to contain and protect from chemical vapors, splashes, or explosions.
    - Use horizontal sliding sash for partial protection during hazardous work.
    - Keep the slots of the hood baffles free of obstruction by apparatus or containers.
    - Keep the hood sash closed as much as possible to maximize the hood's performance. Keep the sash closed when not in use to maximize energy conservation.
    - Hoods should be evaluated by the user before each use to ensure adequate face velocities and the absence of excessive turbulence.
    - In case of exhaust system failure while using a hood, shut off all services and accessories and lower the sash completely. Leave the area immediately and contact EHSO.
    - **The required face velocity is 100 feet per minute (0.5 m/sec)**. This velocity is capable of controlling most low-velocity cross drafts and turbulence created by normal work practices at the face of the hood. All hoods should have a sticker designating this maximum safe sash height. Keep the sash at the identified appropriate level to ensure optimal face velocity. When working with open chemicals, reduce the sash as much as possible to maximize hood performance.
    - Regular testing of the fume hood should be carried out by EHSO every 12 months. A sticker on the front of the fume hood indicated when an inspection was last performed.

### 6.7 Licor Odyssey Imaging System

### 6.8 Epoch plate reader

### 6.9 EVOS fluorescence microscope

### 6.10 Blitz system

- Training and supervision to be provided by PI and/or Laboratory Personnel.

## 7.0 Emergency Equipment

### 7.1 Fire Extinguisher are located in ___ and ___.

- Fire extinguishers should be used only if the fire is small and confined to one small area! USE JUDGEMENT IN THIS! DO NOT CREATE A LIFE-

THREATENING SITUATION WHILE TRYING TO EXTINGUISH A FIRE!

- To operate, pull the pin to release the handle.
- Stand at a safe distance from the fire (as directed on the fire extinguisher).
- Aim the nozzle at the base of the fire, squeeze the handle to discharge the agent, and sweep completely left and right until a few seconds after seeing no fire.
- Familiarize yourself with the PASS instructions on the wall next to the fire extinguisher. This details how to operate a fire extinguisher.
- Maintenance: Fire extinguishers are inspected annually by an external contractor and monthly by Campus Services. LM should check the gauge periodically to ensure operational status.

### 7.2 Emergency Eyewash Station

Located in lab _. LS is responsible for checking operational status once a month.

### 7.3 Repairs and Service

Speak to LS in the event that a piece of equipment requires service or repair.

## 8.0 Operational Procedures

### 8.1 Inventory Control Systems

- LM keeps track of stocks and reagents in lab.
- Spreadsheets and databases are kept to ensure tracking of purchased items.
- Inventories: hard copies posted in the lab; electronic copy on the lab shared server for reference.
- Inventories are maintained for the following by the LM:
  - Chemicals.
  - Antibodies.
  - Recombinant proteins.
  - Lab consumables and supplies.
  - Cell plugs.

## 9.0 Biological Waste Disposal

| Waste | Disposal Procedures |
|---|---|
| Solid Waste | Biological waste: place in polypropylene bag for autoclaving and then disposal in regular trash. For cell culture work there is a receptacle located underneath the BSC in __.<br>Supplies of autoclave bags are located in __.<br>LM coordinates autoclaving and disposal of biological waste.<br>A small amount of biomedical waste (rodent or human tissue/bodily fluids) is generated in lab and is collected in RED biohazard bags for collection and disposal off site by Stericycle. LM coordinates.<br>Biomedical waste generated through rodent work in the Animal Facility in Whitehead Building is collected in red bags and disposed of through DAR. |
| Sharps Waste | Use sharps disposal box located beneath LM bench. Disposal off site through Stericycle. |

| | |
|---|---|
| Liquid Waste | Chemicals – treat as hazardous waste. Disposal through EHSO coordinated through LM. Waste is to be properly labeled using stocks of labels in the EHSO binder in lab. Stocks of empty brown glass bottles are kept in __ for waste collection.<br>Biological waste from work in the BSC - collect in liquid trap. Bleach to disinfect (for 30 minutes) then dispose of down the sink. Flush with plenty of water.<br>Biological waste from work outside the BSC: use bleach to disinfect media contaminated with bacteria, allow to soak for 30 minutes then dispose of down the sink. |

# 10.0 Safety Checks and Emergency Procedures

## 10.1 Incident Reporting

- All incidents, major or minor, must be reported to the Emory People Soft Reporting System.
- EHSO will follow up on any reported incident in an attempt to improve laboratory safety and its reporting system.
- For all first aid procedures, refer to the Just in Time – Guide to Campus Emergencies.

## 10.2 Management of Spills

- Apply paper towels to absorb the spill, and then soak paper towels with 10% bleach or 70% ethanol. For spills outside the biosafety hood, alert others in the area. Use N95 mask if there is a possibility of harmful aerosols. We have a PFA spill kit in __ for emergency use.
- Notify the PI. The PI will contact EH&S and Campus Health if there was an exposure.
- Spills in the lab should be reported to the EHSO Spill Response Team – (404) 727-2888.

## 10.3 Management of Accidental Exposures

- In the event of an exposure to an infectious agent or material:
    - Intact skin
        - Remove contaminated clothing.
        - Vigorously wash contaminated skin for 15 minutes with soap and water; there is a safety shower in the corridor outside lab.
    - Broken, cut, or damaged skin or puncture wound
        - Remove contaminated clothing.
        - Vigorously wash contaminated skin for 15 minutes with soap and water; there is a safety shower in the corridor outside of lab.
        - Inform PI/ LS and seek medical attention Follow Emory Emergency guidelines on the "Just in Time" guide housed in lab. For non-emergency treatment contact Employee Health Services at room D219 Emory University Hospital (686-8589).
        - Call Emory Campus Emergency on 404-727-6111 or 911 in case of emergency.
    - Eye

- Immediately flush eyes for at least 15 minutes with water, using an eyewash by the sink in room -__.
- Hold eyelids away from your eyeball and rotate your eyes so that all surfaces may be washed thoroughly

o Ingestion or Inhalation
- Inform PI/LS and seek medical attention as above.
- Do not induce vomiting unless advised to do so by a health care provider.

## 11.0 Sign Off Documentation

### 11.1 Principle Investigator Certification

I hereby certify that I have reviewed these practices and procedures and they represent the current operating practices in my laboratory.

| Principal Investigator Name | Principal Investigator Signature | Date |
|---|---|---|
| | | |

### 11.2 Personnel Certification

We, the undersigned, have reviewed these practices and procedures, have been trained in the appropriate methods and practices for handling potentially infectious material and agree to follow the stated practices and procedures. We understand that we must review and document compliance with these practices and procedures on an annual basis.

| Personnel Name | Personnel Signature | Date |
|---|---|---|
| | | |
| | | |
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