**Biosafety Standard Operating Procedure (SOP)**

**Procedure title:**

***Biosafety Level established for this procedure:***

1. **CONTACT INFORMATION**

|  |  |
| --- | --- |
| Principal Investigator (PI): |  |
| Building/Room(s) covered by this SOP: |  |
| Department: |  |
| SOP Prepared by: |  |
| SOP Revision Date: |  |

1. **SOP SPECIFIC FOR:** *(Select all that apply)*

**Specific laboratory procedure or experiment**

***Examples: DNA/RNA isolation, Protein expression, bacterial/viral cultures, etc.***

**Collection of human specimens**

***Examples: Blood, saliva, hair, nails, etc.***

**Collection of animal specimens**

***Examples: Blood, saliva, hair, nails, etc.***

**General housekeeping**

***Examples: Sterilization, autoclaving, waste disposal, etc.***

1. **PURPOSE AND PROCESS**

1. **HAZARD IDENTIFICATION & EXPOSURE RISKS**
2. **Hazards**: (Organism, pathogen, toxin, chemical hazard, etc.)

1. **Exposure risks**: (Procedural steps that may create a risk of exposure such as animal injections, phlebotomy, aerosols created, centrifugation, etc.)

1. **Exposure controls / Engineering controls:**

|  |  |
| --- | --- |
| SAFETY CONTROL ITEM | LOCATION |
| Biological safety cabinet (BSC) |  |
| Laboratory Fume Hood/Glove Box or other Ventilation Control |  |
| Eyewash/Safety Shower   * Ensure that each is accessible within 10 sec of an exposure event * Ensure that eyepieces are CLEAN and free of debris/mold |  |
| Centrifuge secondary containment (gaskets and buckets) |  |
| First Aid Kit |  |
| Chemical Spill Kit |  |
| Fire Extinguisher |  |
| Fire Alarm Manual Pull Station |  |

1. **Safety References:** *(Papers, product specifications, SDS, training requirements, etc.)*

***Biosafety in Microbiological and Biomedical Laboratories (***[***BMBL***](https://www.cdc.gov/labs/bmbl/index.html)***) 6th Edition***

1. **STEPWISE OPERATING PROCEDURE**
2. ***Guidance on Engineering and Ventilation Controls - Review safety literature and peer-reviewed journal articles to determine appropriate engineering and ventilation controls for your process or experiment.***
3. ***Guidance on Personal Protective Equipment - To assist with PPE:*** [*https://www.cdc.gov/healthcare-associated-infections/media/pdfs/ppe-sequence-p.pdf?CDC\_AAref\_Val=https://www.cdc.gov/hai/pdfs/ppe/ppe-sequence.pdf*](https://www.cdc.gov/healthcare-associated-infections/media/pdfs/ppe-sequence-p.pdf?CDC_AAref_Val=https://www.cdc.gov/hai/pdfs/ppe/ppe-sequence.pdf)***; NOTE: Respiratory protection is generally not required for lab research, provided the appropriate engineering controls are employed.***
4. ***Designated work area(s) are recommended whenever BSL 2 level organisms, carcinogens, acutely toxic materials, or reproductive toxins are used. A designated work area intends to limit and minimize possible sources of exposure to these materials. The entire laboratory, a portion of the laboratory, a biosafety cabinet, or a laboratory fume hood or bench may be considered a designated area.***

***Stepwise description of process or experiment; include potential risks if a step is performed incorrectly or skipped.*** *Describe hazards to the researcher (e.g., aerosol hazard), or to the experiment itself (e.g., potential contamination, etc.).*

1. Don personal protective equipment: *Select all that apply*

appropriate street clothing: long pants, close-toed shoes

gloves (indicate type):

safety goggles  safety glasses  face shield

lab coat  flame-resistant lab coat

other:

1. Describe the next steps in this procedure and include potential hazards.

1. Dispose of biohazardous materials, solutions, cultures, disposables, and contaminated tissues. Describe how you will dispose of these materials, including neutralization steps and how waste will be disposed of. Refer to the [Waste Triage Flowchart](https://ehs.ua.edu/wp-content/uploads/2025/03/Biological-Waste-Triage-Flowchart_Revised10.12.23.pdf).

**Solids:**

**Liquids:**

**Sharps:**

1. Clean and decontaminate work area and lab equipment.

Describe routine cleaning and decontamination steps. Be sure to include type and final concentration of chemical disinfectants, and how long chemical is allowed to SIT before being wiped up.

**Chemical disinfection:**

**‘SIT’ time:**

**Final concentration:**

1. Remove PPE and dispose of in proper hazardous waste container. Wash hands

1. **EMERGENCY PROCEDURES**

**Health-Threatening Emergencies:**

1. ***Fire, explosion, hazardous material spill or release, compressed gas leak, valve failure, etc.***

***Note: For compressed gas leaks, shut off gas supply only if this can be done safely, without risk to personnel.***

* 1. Enact your Lab Safety protocols. Examples: Close fire doors; shut off gas tanks; close lab and office doors.
  2. Alert people in the immediate vicinity. If the situation warrants building evacuation, then activate the local alarm systems.
  3. Evacuate the area and go to your Emergency Assembly Point (EAP):
  4. Remain nearby to advise emergency responders.
  5. Once personal safety is established, Call **emergency contacts** listed on lab signage. After hours, call **UAPD** at **205-348-5454**. Indicate to police that you are experiencing a lab emergency and that they must contact **EHS** at **205-348-5905**.
  6. Provide local notifications (local notifications are listed at the end of this section).

1. ***Injuries and Exposures:*** 
   1. Remove the injured/exposed individual from the area unless it is unsafe to do so because of the victim's medical condition or the potential hazard to rescuers.
   2. Call **UAPD** at **205-348-5454** if immediate medical attention is required.
   3. Call **205-348-5905** to report the exposure to **EHS**.
   4. Administer first aid as appropriate.
   5. Flush contamination from eyes/skin using the nearest emergency eyewash/shower for a minimum of 15 minutes. Remove any contaminated clothing.
   6. Bring copies of SDS/ biohazard documentation to the hospital for any agents that the victim was potentially exposed to.
   7. If a university employee is injured on campus, it must be reported to EHS 205-348-5905 within 2 hours of the incident.
   8. An **Injury or Illness Report form** must also be completed and submitted: <https://ssb.ua.edu/pls/APEX_PROD/f?p=165:1> within 24 hours of the injury.

**Large Spills:**

For hazardous material spills or releases that have impacted the environment (via the storm drain, soil, or air outside the building); for a spill or release (>4L) that cannot be cleaned up by local personnel; or a spill that you are uncomfortable cleaning up:

* 1. Contact **EHS** at **205-348-5905** or the **Biosafety Officer** at **205-348-5941** for guidance.
  2. Cleanup of biohazardous materials is specific to the spilled agent; please call **Biosafety Officer** at **205-348-5941** first.
  3. Provide local notifications: *(see SOP guidance)*

|  |  |
| --- | --- |
| Name: | Emergency phone: |
| Name: | Emergency phone: |
| Name: | Emergency phone: |

**Local Cleanup of Small Spills:**

In the event of a minor spill or release that can be safely cleaned up by local personnel using readily available equipment (absorbent available from EHS in Small Spill Kit) and laboratory PPE:

***Note: For biohazardous spills that produce aerosols, STOP equipment, WALK away, NOTIFY coworkers that equipment is out of service, and WAIT 10 min for aerosol to settle before you safely disinfect the area or equipment. When in doubt, call the Biosafety Officer*** *at* ***205-348-5941.***

1. Notify personnel in the area and restrict access. Report spill to your supervisor.
2. Eliminate all sources of ignition.
3. Review the SDS for the spilled material, in addition to your knowledge of the hazards associated with the material, to determine the appropriate level of protection (do not clean up spills requiring respiratory protection locally).
4. Wearing appropriate personal protective equipment, clean up the spill.
5. Collect spill cleanup materials in a tightly closed container or biohazard waste bag and container.
6. Manage spill cleanup debris as hazardous/biohazardous waste.
7. Submit online waste disposal request to EHS: https://ehs.ua.edu/operations/environmental-programs/hazardous-materials/chemical-storage-facility/request-pickup-of-unwanted-chemicals/

**Lab-Specific Emergency Procedures:** *This section refers to emergency shut down of specialized equipment. (e.g., Electron Microscopes).*

**Building Maintenance Emergencies:** *If a lab emergency is accompanied by a maintenance emergency (e.g., power outage, plumbing leak), emergency responders or EHS will determine if building maintenance is needed once the area is secured.*

1. **WASTE DISPOSAL**

Describe how you will dispose of biohazardous waste, include neutralization steps and how waste will be categorized (Medical, Biohazardous, Chemical). Refer to the [**Waste Triage Flowchart**](https://ehs.ua.edu/wp-content/uploads/2025/03/Biological-Waste-Triage-Flowchart_Revised10.12.23.pdf) for help.

***Solid Waste:***

***Medical Waste:***

***Liquid Waste:***

***Sharps Waste:***

1. **TRAINING REQUIREMENTS**

* Please note that CITI biosafety coursework and that which [EHS assigns through Skillsoft](https://ehs.ua.edu/training/list-of-training-courses/) are separate assignments.
* Investigators, students, and staff must initiate the CITI coursework aided by the [Biosafety CITI Training Login Instructions](https://ehs.ua.edu/wp-content/uploads/2025/05/BIOSAFETY-TRAINING-CITI-Program-Login-instructions_rev.-5-10-2024-_UA-Personnel.pdf).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Required Biosafety Training** ***(check all that apply):***   |  | | --- | | Research Biosafety: Handling Biohazardous Materials (CITI Program) *3yr renewal*  Shipping and Transport of Biological Materials (CITI Program) *3yr renewal*  Review of SDS for chemicals involved in this process/experiment (Lab-specific training)  Review of this SOP (Lab-Specific training)  Other: |  |  |  | | --- | --- | | **Where are training completion records stored?** | | | **Bldg./Rm.:** | **Electronic Location:** | |

1. **TRANSPORT OF BIOHAZARDOUS MATERIALS**

* List specific procedures here if biohazards are transported (within or between buildings). Include appropriate primary and secondary containers. Call the BSO for guidance on proper packaging procedures.
* Please remember that hazardous materials, including biohazards or medical specimens transported off-campus, are subject to DOT restrictions.

***PI Approval of SOP:***

|  |  |
| --- | --- |
| Principal Investigator has reviewed: | PI Name: |
| PI Email: | PI Office (Bldg/Rm): |
| PI Phone: |  |