|  |
| --- |
| **EHSS Use Only** |
| **Protocol Number** |  |
| **Biosafety Level** |  |
| **IBC Review Required** | **Yes** [ ]  **No** [ ]  |
| **Date Approved** |  |
| **Approved By** |  |
| **Renewal Date** |  |

INSTRUCTIONS: Complete the gray fields below. Advance to the next field by using the mouse or the arrows in the keypad (up, down, left, or right). Avoid using “Tab” throughout this document.

**Biohazardous Material Use Application**

**Application Type:** **[ ]  NEW** **[ ]  RENEWAL [ ]  AMENDMENT**

**Protocol Title:**

**Date:**

**Section 1. Contact Information**

|  |  |
| --- | --- |
| **Principal Investigator**  |  |
| **Department** |  |
| **Email** |  |
| **Phone** |  |
| If an individual is completing this application on behalf of the Principal Investigator, complete the information below. |
| **Name** |  |
| **Role/Title** |  |
| **Email** |  |

**Section 2. Research Summary**

Provide a brief summary of the research you will be conducting using biohazardous materials under this protocol. The summary should be written for a non-scientist to understand. Include the purpose and objectives of the research. Please define all abbreviations and acronyms.

# **Section 3. Recombinant and Synthetic DNA and RNA** **[ ]  Not Applicable**

INSTRUCTIONS: Expand and complete sections 3-11 as appropriate for your protocol. If any of these sections do not apply, check “Not Applicable” in the section header. To expand a section, hover over the section header, and click on the arrow that appears to the left of the header.

1. Which of the following are applicable to this protocol?

|  |  |  |
| --- | --- | --- |
| **YES** | **NO** |  |
| [ ]  | [ ]  | Construction and/or use of synthetic DNA/RNA (probes, oligonucleotides) |
| [ ]  | [ ]  | Creation of c-DNA/genomic libraries |
| [ ]  | [ ]  | DNA/RNA sequencing |
| [ ]  | [ ]  | Use of gene editing technology (CRISPR, Cas9) |
| [ ]  | [ ]  | Gene drive modified organisms (see definition in question 4) |
| [ ]  | [ ]  | Expression of oncogenic genes |
| [ ]  | [ ]  | Expression of genes toxic to animals or humans |
| [ ]  | [ ]  | Use of baculovirus |
| [ ]  | [ ]  | Adeno-associated virus containing plasmid |
| [ ]  | [ ]  | Adeno virus containing plasmid |
| [ ]  | [ ]  | Retrovirus containing plasmid |
| [ ]  | [ ]  | Lentivirus containing plasmid |
| [ ]  | [ ]  | Use of recombinant or synthetic DNA/RNA in microorganisms |
| [ ]  | [ ]  | Use of recombinant or synthetic DNA/RNA in cells |
| [ ]  | [ ]  | Use of recombinant or synthetic DNA/RNA in animals |
| [ ]  | [ ]  | Use of recombinant or synthetic DNA/RNA in plants |
| [ ]  | [ ]  | Use of recombinant or synthetic DNA/RNA in humans |

2. **Vector Information.** Provide the information associated with each vector used in this protocol.

|  |  |  |
| --- | --- | --- |
| Vector Name | Purpose | Host |
| EXAMPLE: pET-28a(+) | Expression | Bacterial |
|       |  | If other, please list |
|       |  | If other, please list |

Note: To add more rows, click in the cell that is farthest to the right in the bottom row, a small plus (+) symbol will appear. Click on the plus (+) at the bottom right corner of the table to add an additional row. Repeat steps as necessary.

3. **Insert Information.** Provide the genus and species of the organism(s) from which the insert (gene) is derived and a brief description of the biological function or activity of the intended product(s).

4. **Gene Drive Modified Organisms.** According to the *NIH Guidelines*, the definition for gene drive is “a technology whereby a particular heritable element biases inheritance in its favor, resulting in the heritable element becoming more prevalent than predicted by Mendelian laws of inheritance in a population over successive generations.” Provide an explanation why experiment(s) outlined in this protocol would be classified as gene drive modified organisms.

5. Review all categories outlined in the [NIH Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules](https://osp.od.nih.gov/wp-content/uploads/NIH_Guidelines.pdf). Which of the following are applicable to this protocol?

|  |  |  |
| --- | --- | --- |
| **Response** | **Category** | **Experiment** |
| **YES** | **NO** | Section III-A | Deliberate transfer of a drug resistance trait to microorganisms that are not known to acquire the trait naturally if such acquisition could compromise the ability to control disease agents in humans, veterinary medicine, or agriculture |
| [ ]  | [ ]  |
| [ ]  | [ ]  | Section III-B | Cloning DNA, RNA, or synthetic nucleic acids that encode for toxins lethal to vertebrates at an LD50 < 100ng/kg body weight |
| [ ]  | [ ]  | Section III-C | Transfer of recombinant or synthetic nucleic acid molecules, or DNA or RNA derived from recombinant or synthetic nucleic acid molecules into human research participants |
| [ ]  | [ ]  | Section III-D (Section III-E) | * Experiments involving whole animals, and transgenic animals
* Experiments involving whole plants or microbial pathogens associated with plants
* Large-scale work (>10L) regardless of biosafety level
* Experiments involving influenza viruses
* Experiments involving Gene Drive Modified Organisms
* Experiments using Risk Group 3, Risk Group 4, or Restricted Agents as Host-Vector Systems
* Experiments using DNA from Risk Group 3, Risk Group 4, or Restricted Agents cloned into nonpathogenic prokaryotic, lower eukaryotic or tissue culture Host-Vector Systems
* Infectious DNA or RNA viruses or defective DNA or RNA viruses in the presence of helper virus in tissue culture systems
 |
| [ ]  | [ ]  | Section III-F | * Experiments involving most Risk Group 1 materials
* Recombinant or synthetic DNA from a prokaryotic host and propagated in the same host
* Experiments that do not present a significant risk to health or the environment
* Experiments using recombinant or synthetic nucleic acid molecules cloned into nonpathogenic prokaryotic, lower eukaryotic or tissue culture Host-Vector Systems
* Recombinant or synthetic nucleic acid molecules containing less than one-half of any eukaryotic viral genome
 |

|  |
| --- |
| **EHSS/IBC Comments:** |
|  |

# **Section 4. Microorganisms [ ]  Not Applicable**

1. Which of the following are applicable to this protocol?

|  |  |  |
| --- | --- | --- |
| **YES** | **NO** |  |
| [ ]  | [ ]  | Bacteria |
| [ ]  | [ ]  | Yeast |
| [ ]  | [ ]  | Fungi |
| [ ]  | [ ]  | Parasites |
| [ ]  | [ ]  | Live Virus  |
| [ ]  | [ ]  | Other, specify:       |

2. **Microorganism Information.** Provide the information associated with each microorganism used in this protocol.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *Genus species* | Name of Strain | Manufacturer(Vendor/Collaborator) and Product Number | Biosafety Level | Largest Scale and Units (anticipated) |
| EXAMPLE: *Escherichia coli* | BL21(DE3) | ThermoFisher Scientific, C600003 | BSL-1 | 500 mL |
|       |       |       |  |       |
|       |       |       |  |       |

Note: To add more rows, click in the cell that is farthest to the right in the bottom row, a small plus (+) symbol will appear. Click on the plus (+) at the bottom right corner of the table to add an additional row. Repeat steps as necessary.

3. **Live Virus Information.** Provide the information associated with each live virus used in this protocol.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Virus Name | Name of Strain | Manufacturer(Vendor/Collaborator) and Product Number | Propagation Host | Biosafety Level | Largest Scale and Units (anticipated) |
| *EXAMPLE:*Hepatitis A | HM175/18f | ATCC, VR-1402 | Animal cells (FRhK-4) | BSL-2 | 250 mL |
|       |       |       |       |  |       |
|       |       |       |       |  |        |

Note: To add more rows, click in the cell that is farthest to the right in the bottom row, a small plus (+) symbol will appear. Click on the plus (+) at the bottom right corner of the table to add an additional row. Repeat steps as necessary.

|  |
| --- |
| **EHSS/IBC Comments:** |
|  |

# **Section 5. Use of Plants or Plant Products [ ]  Not Applicable**

1. Which of the following are applicable to this protocol?

|  |  |  |
| --- | --- | --- |
| **YES** | **NO** |  |
| [ ]  | [ ]  | Importation of Plants and/or Plant Products\* |
| [ ]  | [ ]  | Importation of Foreign Soil (outside of the United States)\* |
| [ ]  | [ ]  | Invasive Species |
| [ ]  | [ ]  | Transgenic plants created at the University |
| [ ]  | [ ]  | Transgenic plants created by others outside of the University |

 \*Import permit or additional documentation is required.

2. **Invasive Species and Transgenic Plant Information**. Provide the information associated with each invasive species and/or transgenic plant used in this protocol.

|  |  |  |  |
| --- | --- | --- | --- |
| *Genus species* | Name of Strain | Manufacturer(Vendor/Collaborator) and Product Number | Biosafety Level |
| EXAMPLE: *Arabidopsis thaliana* | Laboratory strain, WT | Ward’s Science, 470002-736 | BSL-1P |
|       |       |       |  |
|       |       |       |  |

Note: To add more rows, click in the cell that is farthest to the right in the bottom row, a small plus (+) symbol will appear. Click on the plus (+) at the bottom right corner of the table to add an additional row. Repeat steps as necessary.

|  |
| --- |
| **EHSS/IBC Comments:** |
|  |

# **Section 6. Established, Primary, and Stem Cells [ ]  Not Applicable**

1. Which of the following are applicable to this protocol?

|  |  |  |
| --- | --- | --- |
| **YES** | **NO** |  |
| [ ]  | [ ]  | Established cells/cell lines sourced from animals |
| [ ]  | [ ]  | Established cells/cell lines sourced from humans |
| [ ]  | [ ]  | Extraction of cells from animal organs and/or tissues |
| [ ]  | [ ]  | Extraction of cells from human organs and/or tissues |
| [ ]  | [ ]  | Primary cells from animals |
| [ ]  | [ ]  | Primary cells from humans |
| [ ]  | [ ]  | Induced pluripotent stem cells from any source |
| [ ]  | [ ]  | Human embryonic stem cells |
| [ ]  | [ ]  | Other cell types, specify:       |

#### *6.1 Established Cells and Cell Lines [ ]  Not Applicable*

1. **Established Cell and Cell Lines.** Provide the information associated with each established cell line used in this protocol.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Source  | Name of Cell Line | Description | Manufacturer(Vendor/Collaborator) and Product Number | Biosafety Level |
| *EXAMPLE*Human | HEK-293T/17 | Isolated from embryo kidney tissue | ATCC, CRL-11268 | BSL-2 |
|       |       |       |       |  |
|       |       |       |       |  |

Note: To add more rows, click in the cell that is farthest to the right in the bottom row, a small plus (+) symbol will appear. Click on the plus (+) at the bottom right corner of the table to add an additional row. Repeat steps as necessary.

|  |
| --- |
| **EHSS/IBC Comments:** |
|  |

#### *6.2 Primary Cells [ ]  Not Applicable*

1. **Primary Cells.** Provide the information associated with each type of primary cell(s) used in this protocol.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Source  | Name of Cell Line | Description of Cell Line | Manufacturer(Vendor/Collaborator) and Product Number | Biosafety Level |
| *EXAMPLE*Human | Osteoclasts | Osteoclasts precursors containing a mixed population of osteoblasts and osteoclasts | LonzaCatalog #: 2T-110 | BSL-1 |
|       |       |       |       |  |
|       |       |       |       |  |

Note: To add more rows, click in the cell that is farthest to the right in the bottom row, a small plus (+) symbol will appear. Click on the plus (+) at the bottom right corner of the table to add an additional row. Repeat steps as necessary.

|  |
| --- |
| **EHSS/IBC Comments:** |
|  |

#### 6.3 *Induced Pluripotent Stem Cells [ ]  Not Applicable*

1. **Induced** **Pluripotent Stem Cells (iPSCs).** Provide the information associated with each type of induced pluripotent stem cell(s) used in this protocol.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Source  | Name of Cell Line | Description of Cell Line | Manufacturer(Vendor/Collaborator) and Product Number | Biosafety Level |
| *EXAMPLE*Human | iPSC-derived Mesenchymal Stem Cells (BYS0112) | iPSCs that have been differentiated into multipotent stromal cells | ATCC (Product # ACS-7010) | BSL-2 |
|       |       |       |       |  |
|       |       |       |       |  |

Note: To add more rows, click in the cell that is farthest to the right in the bottom row, a small plus (+) symbol will appear. Click on the plus (+) at the bottom right corner of the table to add an additional row. Repeat steps as necessary.

2. **Induced Pluripotent Stem Cell (iPSC) Activities.** Which of the following are applicable to this protocol?

|  |  |  |
| --- | --- | --- |
| **YES** | **NO** |  |
| [ ]  | [ ]  | *In vitro* culturing, passaging, differentiation, and storage  |
| [ ]  | [ ]  | *In vitro* organoid research |
| [ ]  | [ ]  | Modelling specific stages of embryonic development (i.e. amnion formation, neural tube development, development of primordial germ cells, placental structures, 2D or 3D models of gastrulation or post-gastrulation events) |
| [ ]  | [ ]  | Modelling continuous processes of embryonic development (i.e. any sequence of events leading to the creation of the primitive streak) |
| [ ]  | [ ]  | Generating iPSC lines |
| [ ]  | [ ]  | Banking or distributing iPSC lines or embryos |
| [ ]  | [ ]  | *In vitro* culturing and/or creation of intact human embryo(s) |
| [ ]  | [ ]  | *In vitro* gametogenesis without fertilization  |
| [ ]  | [ ]  | Introducing iPSCs into animals and/or humans |

|  |
| --- |
| **EHSS/IBC Comments:** |
|  |

#### *6.4 Human Embryonic Stem Cells [ ]  Not Applicable*

1. **Human Embryonic Stem Cells (hESC).** Provide the information associated with each human embryonic stem cell line used in this protocol.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name of Cell Line | Manufacturer and Product Number (or NIH Registry Number) | Are there restrictions on the hESC line(s) identified by the NIH?  | Are there restrictions on the hESC line(s) identified by the Provider?  | Biosafety Level |
| *EXAMPLE*Shef 3 | University of Sheffield, NIHhESC-10-0077 | No | No | BSL-2 |
|       |       |  |  |  |
|       |       |  |  |  |

Note: To add more rows, click in the cell that is farthest to the right in the bottom row, a small plus (+) symbol will appear. Click on the plus (+) at the bottom right corner of the table to add an additional row. Repeat steps as necessary.

2. **If any restrictions are identified by the NIH and/or Provider, specify:**

3. **Human Embryonic Stem Cell (hESC) Source.**

|  |  |  |
| --- | --- | --- |
| **YES** | **NO** |  |
| [ ]  | [ ]  | hESCs to be obtained are registered with the NIH |
| [ ]  | [ ]  | hESCs to be obtained from a reputable, domestic cell bank/repository |

4. **Human Embryonic Stem Cell (hESC) Activities.** Which of the following are applicable to this protocol?

|  |  |  |
| --- | --- | --- |
| **YES** | **NO** |  |
| [ ]  | [ ]  | *In vitro* culturing, passaging, differentiation, and storage  |
| [ ]  | [ ]  | *In vitro* organoid research |
| [ ]  | [ ]  | Modelling specific stages of embryonic development (i.e. amnion formation, neural tube development, development of primordial germ cells, placental structures, 2D or 3D models of gastrulation or post-gastrulation events) |
| [ ]  | [ ]  | Conducting NIH or Provider restricted activities |
| [ ]  | [ ]  | Modelling continuous processes of embryonic development (i.e. any sequence of events leading to the creation of the primitive streak) |
| [ ]  | [ ]  | Generating hESC lines |
| [ ]  | [ ]  | Banking or distributing hESC lines or embryos |
| [ ]  | [ ]  | *In vitro* culturing and/or creation of intact human embryo(s) |
| [ ]  | [ ]  | Procurement of gametes, blastocysts, embryos, or cells for hESC generation |
| [ ]  | [ ]  | In vitro gametogenesis without fertilization  |
| [ ]  | [ ]  | Introducing hESCs into animals and/or humans |

|  |
| --- |
| **EHSS/IBC Comments:** |
|  |

# **Section 7. Non-Human Derived Materials [ ]  Not Applicable**

1. Which of the following are applicable to this protocol?

|  |  |  |
| --- | --- | --- |
| **YES** | **NO** |  |
| [ ]  | [ ]  | Fluids (blood, saliva, urine, etc.) |
| [ ]  | [ ]  | Tissues |
| [ ]  | [ ]  | Organs |
| [ ]  | [ ]  | Bones |
| [ ]  | [ ]  | Other material type, specify:       |

2. **Non-Human Derived Material Information.** Provide the following information about each type of non-human derived material used in this protocol.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Type of Material | Name and Source of Material | Manufacturer(Vendor/Collaborator) and Product Number | Biosafety Level | Largest Scale and Units (anticipated) |
| EXAMPLE: Fluid | Pig Blood | Collaborator | BSL-1 |  |
|       |       |       |  |  |
|       |       |       |  |  |

Note: To add more rows, click in the cell that is farthest to the right in the bottom row, a small plus (+) symbol will appear. Click on the plus (+) at the bottom right corner of the table to add an additional row. Repeat steps as necessary.

|  |
| --- |
| **EHSS/IBC Comments:** |
|  |

# **Section 8. Human Derived Materials [ ]  Not Applicable**

1. Which of the following are applicable to this protocol?

|  |  |  |
| --- | --- | --- |
| **YES** | **NO** |  |
| [ ]  | [ ]  | Bodily fluids (blood, saliva, urine, etc.) |
| [ ]  | [ ]  | Tissues |
| [ ]  | [ ]  | Organs |
| [ ]  | [ ]  | Bones |
| [ ]  | [ ]  | Other material type, specify:       |

2. **Human Derived Material Information.** Provide the following information about each type of human derived material used in this protocol.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Type of Material | Name of Material | Manufacturer(Vendor/Collaborator) and Product Number | Biosafety Level | Largest Scale and Units (anticipated) |
| EXAMPLE: Organs | Heart | Collaborator | BSL-2 |  |
|       |       |       |  |  |
|       |       |       |  |  |

Note: To add more rows, click in the cell that is farthest to the right in the bottom row, a small plus (+) symbol will appear. Click on the plus (+) at the bottom right corner of the table to add an additional row. Repeat steps as necessary.

|  |
| --- |
| **EHSS/IBC Comments:** |
|  |

# **Section 9: Select Agents and Biological Toxins [ ]  Not Applicable**

1. Which of the following are applicable to this protocol?

|  |  |  |
| --- | --- | --- |
| **YES** | **NO** |  |
| [ ]  | [ ]  | [Excluded Select Agent and/or Toxin](https://www.selectagents.gov/sat/exclusions/index.htm), if yes, specify:       |
| [ ]  | [ ]  | [Select Agent and/or Toxin](https://www.selectagents.gov/sat/list.htm), if yes, specify:       |
| [ ]  | [ ]  | Other Biological Toxin, if yes, specify:       |

2. **Select Agent and Biological Toxins**. Provide the information associated with each select agent and/or toxin used in this protocol.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name of Select Agent and/or Toxin | Quantity | Manufacturer(Vendor/Collaborator) | Product Number | Biosafety Level |
| *EXAMPLE*Saxitoxin | 100 mg | National Research Council Canada | CRM-STX-g | BSL-2 |
|       |       |       |       |  |
|       |       |       |       |  |

Note: To add more rows, click in the cell that is farthest to the right in the bottom row, a small plus (+) symbol will appear. Click on the plus (+) at the bottom right corner of the table to add an additional row. Repeat steps as necessary.

|  |
| --- |
| **EHSS/IBC Comments:** |
|  |

# **Section 10: Vertebrate Animals [ ]  Not Applicable**

1. Has Institutional Animal Care and Use Committee (IACUC) approval been received for this protocol?

2. If yes, provide the protocol number for reference:

3. **Vertebrate Animals**. Provide the information associated with the vertebrate animals used in this protocol.

|  |  |  |
| --- | --- | --- |
| Type of Animal | Description | Manufacturer(Vendor/Collaborator) |
| *EXAMPLE*Mouse | C57BL/6J, Strain 000664, Male | The Jackson Laboratory |
|       |       |       |

Note: To add more rows, click in the cell that is farthest to the right in the bottom row, a small plus (+) symbol will appear. Click on the plus (+) at the bottom right corner of the table to add an additional row. Repeat steps as necessary.

|  |
| --- |
| **EHSS/IBC Comments:** |
|  |

# **Section 11: Human Subjects [ ]  Not Applicable**

1. Has Institutional Review Board (IRB) approval been received for this protocol?

2. If yes, provide the protocol number for reference:

|  |
| --- |
| **EHSS/IBC Comments:** |
|  |

INSTRUCTIONS: Expand and complete all remaining sections 12-21. To expand a section, hover over the section header, and click on the arrow that appears to the left of the header.

# **Section 12. Experimental Methods**

1. Describe the types of experiments being performed with the biohazardous materials outlined in the above-mentioned sections. Include all procedures involving biohazardous materials with respect to the research goals described in section 2.

1. **BSL-2 AND ABOVE**: Complete a biohazardous materials standard operating procedure (SOP) and submit for approval with this protocol. Provide details and outline each type of experiment to be conducted in the lab under this protocol. An [SOP template](https://ehss.syr.edu/laboratory-safety/biosafety/biosafety-forms/) is available for use.

|  |
| --- |
| **EHSS/IBC Comments:** |
|  |

# **Section 13: Hazards and Controls**

* 1. *Sharps Hazards*

1. Does this protocol involve any the use of any sharps?

|  |  |  |
| --- | --- | --- |
| **YES** | **NO** |  |
| [ ]  | [ ]  | Needles |
| [ ]  | [ ]  | Syringes with non-removable needles |
| [ ]  | [ ]  | Scalpels |
| [ ]  | [ ]  | Glass Slides |
| [ ]  | [ ]  | Razor Blades |
| [ ]  | [ ]  | Other sharps, specify:       |

2. Select all controls that will be implemented when working with sharps in your lab space (check all that apply):

[ ]  Not Applicable. The protocol does not involve the use of any sharps.

[ ]  Selected sharps will meet the criteria of “safe sharps”, which include an engineering feature to reduce the hazard during and after use.

[ ]  Used needles will not be recapped and will be disposed of immediately after use.

[ ]  Plasticware will be substituted for glassware whenever possible.

[ ]  Other sharps controls, specify:

*13.2 Aerosol-Generating Hazards*

1. Does this protocol involve any aerosol-generating techniques or equipment?

|  |  |  |
| --- | --- | --- |
| **YES** | **NO** |  |
| [ ]  | [ ]  | Pipetting  |
| [ ]  | [ ]  | Stirrers/Mixers |
| [ ]  | [ ]  | Vortex |
| [ ]  | [ ]  | Stationary or Shaking Incubator |
| [ ]  | [ ]  | Aspirator |
| [ ]  | [ ]  | Orbital Shaker |
| [ ]  | [ ]  | Centrifugation |
| [ ]  | [ ]  | Sonicator |
| [ ]  | [ ]  | Homogenizer |
| [ ]  | [ ]  | Blender |
| [ ]  | [ ]  | French Press |
| [ ]  | [ ]  | Cell Sorter / Flow Cytometer |
| [ ]  | [ ]  | Automation (Pipetting) / Robotics |
| [ ]  | [ ]  | Other, specify:       |

2. Select all controls that will be implemented when working with aerosol-generating techniques or equipment in your lab space (check all that apply):

[ ]  Not Applicable. The protocol does not involve aerosol-generating techniques or equipment.

[ ]  Aerosol-generating techniques will be performed in a biosafety cabinet (BSC).

[ ]  During centrifugation, controls such as safety cups and/or sealed rotors will be used.

[ ]  A sonicator enclosure will be used to contain aerosols from an open container during sonication.

[ ]  Tubes, flasks, beakers, etc. will be capped or sealed when performing aerosol-generating techniques outside of a biosafety cabinet.

[ ]  Other controls, specify:

*13.3 Non-Biological Hazards*

1. Does this protocol involve any additional, non-biological hazards?

|  |  |  |
| --- | --- | --- |
| **YES** | **NO** |  |
| [ ]  | [ ]  | Autoclave |
| [ ]  | [ ]  | Liquid Nitrogen |
| [ ]  | [ ]  | Hazardous Chemicals |
| [ ]  | [ ]  | Laser Use (Class 3B or Class 4) |
| [ ]  | [ ]  | Radiation Use (Radiation Producing Equipment or Radioactive Materials) |
| [ ]  | [ ]  | Other, specify:       |

2. Select all controls that will be implemented when working with the above-mentioned hazards in your lab space (check all that apply):

[ ]  Not Applicable. The protocol does not involve the non-biological hazards mentioned above.

[ ]  Water and heat-resistant gloves will be used for all autoclave operations.

[ ]  Water-resistant cryogenic gloves will be used during procedures involving liquid nitrogen.

[ ]  Hazardous chemical use will comply with the requirements outlined in the [University’s Laboratory Chemical Safety Plan](https://ehss.syr.edu/laboratory-safety/chemical-safety/laboratory-chemical-safety-plan/).

[ ]  Laser use will comply with the requirements outlined in the [University’s Laser Safety Program](https://ehss.syr.edu/laboratory-safety/laser-safety/laser-safety-program/).

[ ]  Radiation use will comply with the requirements outlined in the [University’s Radiation Safety Program](https://ehss.syr.edu/laboratory-safety/radiation-safety/radioactive-materials/).

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| --- |
| **EHSS/IBC Comments:** |
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# **Section 14. Personal Protective Equipment**

1.Which personal protective equipment will be used to protect researchers from exposure to biohazardous materials in the lab (check all that apply):

|  |  |  |
| --- | --- | --- |
| **YES** | **NO** |  |
| [ ]  | [ ]  | Reusable lab coat |
| [ ]  | [ ]  | Disposable lab coat |
| [ ]  | [ ]  | Safety glasses |
| [ ]  | [ ]  | Safety goggles |
| [ ]  | [ ]  | Face shield |
| [ ]  | [ ]  | Gloves |
| [ ]  | [ ]  | Shoe covers |
| [ ]  | [ ]  | Respiratory Protection (use of a respirator or N-95 mask) |
| [ ]  | [ ]  | Other, specify:       |

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| **EHSS/IBC Comments:** |
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# **Section 15. Transport**

1. Does this protocol involve transport of any biohazardous materials?

|  |  |  |
| --- | --- | --- |
| **YES** | **NO** |  |
| [ ]  | [ ]  | On-campus (within the same building) |
| [ ]  | [ ]  | On-campus (between buildings) |
| [ ]  | [ ]  | Off-campus (local locations, i.e., SUNY Upstate Medical) |
| [ ]  | [ ]  | Domestic shipments |
| [ ]  | [ ]  | International shipments |

2. Select all controls that will be implemented when transporting biohazardous materials in your lab space (check all that apply):

[ ]  Not Applicable. The protocol does not involve the transport of biohazardous materials.

[ ]  Transportation of biohazardous materials will be placed into a labeled, sealable container that is easy to decontaminate.

[ ]  Biohazardous materials will not be transported using personal vehicles or public transportation.

[ ]  All biohazardous materials shipments will be coordinated through EHSS. An [Intent to Ship Form](https://its-forms.syr.edu/frevvo/web/tn/SUFS/u/b84a200a-2af7-4a7c-b2b0-f8f5f1759436/app/_Cw7poUugEeyUrKIDlmBUZQ/flowtype/_e4-3EDquEe2Vjv0rleImHw/popupform?_gl=1*16c5mdo*_ga*MjAxNDk0MzA1OS4xNjQ4NDgzNzM3*_ga_QT13NN6N9S*MTY5NjAxODMyMC4zNzguMS4xNjk2MDE4NTI5LjU4LjAuMA..) will be completed at least 24 hours prior to shipping.

|  |
| --- |
| **EHSS/IBC Comments:** |
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# **Section 16. Biohazardous Material Procurement and Transfer**

1. The laboratory confirms it will implement the following procedures to properly account for biohazardous materials in the lab:

[ ]  Biohazardous materials will not be transferred to another lab, including a collaborating lab, at Syracuse University, or another institution without prior approval from EHSS.

[ ]  Biohazardous materials will not be procured from an outside source, another lab, or collaborator at Syracuse University without having an approved IBC application to possess and use the materials.

|  |
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| **EHSS/IBC Comments:** |
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# **Section 17. Inventory Control and Security Measures**

1. The laboratory confirms it will implement the following procedures to properly account for and secure biohazardous materials in the lab (select all that apply):

[ ]  Laboratory personnel will keep an accurate inventory of stocks and confirm its accuracy on a routine basis.

[ ]  Laboratory personnel will notify EHSS of intent to possess any new type(s) of biohazardous material.

[ ]  The entrance to laboratories containing biohazardous materials will be locked.

[ ]  Only trained personnel will have access to biohazardous material(s) use and storage areas.

[ ]  Storage areas (freezers, refrigerators, etc.) located in shared areas will be locked.

[ ]  Other, specify:

|  |
| --- |
| **EHSS/IBC Comments:** |
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# **Section 18. Decontamination and Waste Management Procedures**

*18.1 Surface Decontamination*

1. The laboratory will implement the following surface decontamination procedures in the lab (select all that apply):

[ ]  Ethanol (70-90 %) will be used to routinely disinfect surfaces.

[ ]  Isopropyl alcohol (70-90 %) will be used to routinely disinfect surfaces.

[ ]  10% bleach solution will be used to routinely disinfect surfaces.

[ ]  Other disinfectant will be used, specify:

[ ]  The disinfectant has been verified to inactivate the organism or material.

[ ]  The disinfectant will be applied to surfaces for the correct contact time.

[ ]  Surface decontamination will be conducted after each lab experiment or at the end of each day.

[ ]  Surfaces will be decontaminated after a spill or splash.

*18.2 Biohazardous Liquid Waste*

1. The laboratory will implement the following procedures prior to disposing of biohazardous liquid waste down the drain (select all that apply):

[ ]  10 % bleach solution will be used to deactivate biohazardous liquid waste for a minimum of 30 minutes prior to drain disposal.

[ ]  Other disinfectant will be used to deactivate biohazardous liquid waste for a minimum of 30 minutes prior to drain disposal, specify:

[ ]  The disinfectant has been verified to inactivate the organism or material.

[ ]  All deactivated biohazardous liquid waste will be disposed of down the sink drain.

[ ]  Biohazardous liquid waste will not be generated in the lab space.

*18.3 Biohazardous Solid Waste*

1. The laboratory will implement the following procedures to help ensure the proper disposal of biohazardous solid waste (select all that apply):

[ ]  All solid waste contaminated with biohazardous materials will be disposed of as regulated medical waste (RMW).

[ ]  Contaminated waste will not be disposed of into the regular trash.

[ ]  The lab will contact EHSS for RMW pickups when the box is 75% full.

[ ]  Biohazardous solid waste will not be generated in the lab space.

*18.4 Biohazardous Sharps Waste*

1. The laboratory will implement the following procedures to help ensure the proper disposal of biohazardous sharps waste (select all that apply):

[ ]  A labeled, puncture-proof, sealable container will be used for sharps disposal.

[ ]  The lab will contact EHSS for sharp container pickups when the container is 75% full.

[ ]  Biohazardous sharps waste will not be generated in the lab space.

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| **EHSS/IBC Comments:** |
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# **Section 19. Biohazardous Materials Use and Storage Locations**

1. Provide the locations (building and room number) for the following: primary work location, biosafety cabinet location, storage, and analysis for the type of biohazardous materials used.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Room Use  | Building(s) and Room Number(s) | Type of Biohazardous Materials Used | Additional Biohazardous Materials Used | **EHSS USE ONLY****Biosafety Level** |
| Primary Work Location(s) |       |  |  |  |
| Biosafety Cabinet Location(s) |       |  |  |  |
| Storage Area(s) |       |  |  |  |
| Analysis Room(s) |       |  |  |  |
|       |       |  |  |  |

Note:

(1) To add more rows, click in the cell that is farthest to the right in the bottom row, a small plus (+) symbol will appear. Click on the plus (+) at the bottom right corner of the table to add an additional row. Repeat steps as necessary.

(2) An additional document may be included at the end of this protocol as an Excel spreadsheet, a floor plan, a map, etc. to describe where all biohazardous materials are used, stored, and/or analyzed, if preferred.

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| --- |
| **EHSS/IBC Comments:** |
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# **Section 20. Training Requirements and Lab Personnel**

1. The laboratory will implement the following procedures to ensure laboratory personnel are trained prior to working with biohazardous materials (select all that apply):

[ ]  Initial EHSS [biosafety training](https://its-forms.syr.edu/frevvo/web/tn/SUFS/u/356b3aac-4b02-456e-9751-952ba64d7f48/app/_uujYAGwwEeWxmM5q6-jqow/formtype/_58HMcNujEeic_sT0ysp2EQ/popupform?_gl=1*12jyil9*_ga*MjAxNDk0MzA1OS4xNjQ4NDgzNzM3*_ga_QT13NN6N9S*MTY5NDU0MTg2Ny4zNjQuMS4xNjk0NTQxOTk2LjUyLjAuMA..) will be completed by all lab personnel prior to working with biohazardous materials.

[ ]  EHSS biosafety refresher training will be completed on an annual basis by all lab personnel working with biohazardous materials.

[ ]  The PI will provide in-lab training on the SOP(s) associated with this protocol to all lab personnel working with biohazardous materials.

2. Provide a list of all lab personnel who will initially be involved in this protocol.

|  |  |  |
| --- | --- | --- |
| Name | SUID | Role |
|       |       |  |
|       |       |  |
|       |       |  |

Note: To add more rows, click in the cell that is farthest to the right in the bottom row, a small plus (+) symbol will appear. Click on the plus (+) at the bottom right corner of the table to add an additional row. Repeat steps as necessary.

|  |
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| **EHSS/IBC Comments:** |
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# **Section 21. Signature**

EHSS will review this application and contact the Principal Investigator with comments or concerns.

Any research involving BSL-2 (or higher) biohazardous materials, human materials, and and/or recombinant nucleic acids covered under the *NIH Guidelines* requires review and approval by the Institutional Biosafety Committee (IBC) prior to initiation. EHSS will notify the PI if the application requires IBC approval.

I confirm that all information provided in this document are true and complete to the best of my knowledge.

Signature of Principal Investigator:

Date:

Send all completed protocols to ehss@syr.edu

# **Section 22. Terms and Conditions of Approval**

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| --- |
| **EHSS/IBC Comments:** |
|  |

*Updated July 2025*