Sample Laboratory Biosafety Manual for Microbiological Activities

 According to the CDC Biosafety in Microbiological and Biomedical Laboratories (BMBL) 6th Edition found at:

[Biosafety in Microbiological and Biomedical Laboratories—6th Edition](https://www.cdc.gov/labs/pdf/SF__19_308133-A_BMBL6_00-BOOK-WEB-final-3.pdf)

***“Each laboratory should develop or adopt a biosafety or operations manual that identifies the hazards that will be encountered, and that specifies practices and procedures designed to minimize or eliminate exposures to these hazards.  Personnel should be advised of special hazards and should be required to read and follow the required practices and procedures.  A scientist trained and knowledgeable in appropriate laboratory techniques, safety procedures, and hazards associated with handling infectious agents or materials must be responsible for the conduct of work with any infectious agents or materials.  This individual should consult with biosafety or other health and safety professionals with regard to risk assessment.”*** (BMBL, 6th Edition, Section IV, Page 33, Laboratory Biosafety Level Criteria).

A laboratory Biosafety Manual should be readily available to guide investigators, technicians, and collaborators in both routine and emergency operations involving rDNA or infectious materials. It should also be accessible to safety and emergency response personnel in the event of an incident, accident, or emergency within a specific lab area. The manual should be a working document, reviewed periodically and updated as needed, ensuring it is easily accessible to all personnel working in areas handling infectious and/or recombinant agents. Ideally, it should be kept in or near the work area for immediate reference.

A signature sheet should be included in the lab Biosafety Manual to document that the personnel working with infectious and/or recombinant agents have read and understood the provided materials and information. The signature sheet should also include the dates when personnel reviewed the materials. (As per the BMBL, training updates are required at least annually – see above.)

A loose-leaf binder that can easily accommodate changes or new materials is the recommended option for maintaining a laboratory Biosafety Manual.

**The laboratory biosafety manual should be a living, working document that is an important resource for personnel engaged in the activities using biological and / or rDNA materials.   Its primary focus should be to provide pertinent information to help execute the operations of the lab in a safe and professional manner.**

Contact the ORICS (2-3224, [comply@ksu.edu](mailto:comply@ksu.edu)) if you have questions or need information regarding the laboratory biosafety manual**Sample Laboratory Biosafety Manual (Template)**

**Administrative Information:**

      Key Personnel: (provide current contact information for all key personnel) i.e. phone #, etc

Principle Investigator:

Co-Investigator(s):

Technicians:

      Building and Lab Room Number:

      Biological / rDNA agent in use:

      Date Manual Prepared:

   Date of items last modified:

* IBC Registration Document Title, Number(s), and Date Approved:
  + A copy of the IBC Registration Document should be included in the Biosafety Manual

      IACUC Protocol Number (if applicable):

      Containment (Biosafety) Level Assigned:

 BSL-1

 Animal BSL-1

 BSL-2

 Animal BSL-2

 BSL-3

 Animal BSL-3

 Other

      **Biological Agent Information**:

* Biological Agents in Use:
* Agent specific SDS sheets and agent information (If available):
* Susceptible population:
* Route of infection:
* Infective dose:
* Clinical sign of infection:
* Treatment:
* Prophylaxis:
* Helpful links below:

- Public Health Agency of Canada

(<http://www.phac-aspc.gc.ca/msds-ftss/index-eng.php>)

- Center for Food Security and Public Health (<http://www.cfsph.iastate.edu/DiseaseInfo/imagedatabase.htm>)

- Center for Disease Control and Prevention (<http://www.cdc.gov/OD/ohs/biosfty/bmbl5/bmbl5toc.htm>)

* Agent Location and Storage: (specify location and containment equipment for each agent by room, freezer, incubator, hood, etc.)
* Occupational Health Information: (include targeted fact sheets that specify the agent, and information on occupational risks that may be posed by the agent.  The animal care and use website has a number of fact sheets on occupational risks that could serve as examples for fact sheets for your activities – please consult the Fact Sheets located within the Occupational Health and Safety page)

* **Agent Risk Assessment for Specific Agent and Project**

A comprehensive risk assessment is a critical element of the biosafety manual.  The PI and the research team are responsible for identifying what the risks are for lab personnel or others working with the agent in the laboratory.  Examples might be sharps hazards, aerosol hazards, animal bites or exposures, spills, splashes, etc.

* **Safety and Security/Standard Operating Procedures (SOP’s)**

(include copies of applicable SOPs in the binder for things like decontamination, disposal, security, emergency procedures, handling procedures, etc.)

* Location of spill clean-up kit:
* Agent spill clean-up procedure:
* PPE required: (include PPE requirements for lab access with no agent manipulation, agent manipulation, agent manipulation with potential aerosol production, animal handling, etc.).
* Infectious waste disposal: (Describe for disposal of liquid and solid waste.)
* Sharps policy:
* Aerosol reduction: (Describe specific procedures that will be utilized to prevent aerosol production in the lab.)
  + - **Security Provisions:**

(describe agent security procedures appropriate to assigned agent BSL level)

      **Emergency Procedures**:

(list procedures to be followed in case of an accident such as a spill, injection, ingestion, aerosolization, splash, etc.)

* Other agent specific actions:

         Known first aid procedures

         Effective disinfectants / neutralizing agents (include location in lab)

         Known resistance traits introduced into agent(s)

         Known symptoms associated with exposures to this agent(s)

      **Emergency Notification**:

1.      Call primary investigator (phone #)

2.      Call Campus Police, Security, emergency medical personnel, etc (phone #’s)

       **Training:**

  Records of appropriate training (technical, safety, procedural, etc.) of lab personnel should be included in the Biosafety Manual.  If maintained elsewhere, these records must be available for review by regulatory and compliance personnel.

       **Institutional Notification Requirement:**

It is the PI’s responsibility to make the appropriate notifications in the event of an occupational exposure, laboratory accident, or loss of potential containment. The IBC and EH&S must be notified of any incidents or adverse events involving biological agents or toxins.

\*This manual should be available for review by appropriate campus and / or regulatory personnel upon request

**Signature Page for Laboratory Personnel**

 My signature below affirms that I have received appropriate training for working with the organism(s) described in this biosafety manual, and I have read and understand the contents of this manual.  I know the locations of all safety devices and equipment appropriate for the safe handling and decontamination of this/these organism(s).

  Signature                                                          Date

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