



Office of Environmental Health & Safety

**Laboratory Safety Inspection**

**BSL-1 Laboratories**

<b>a</b>	Principle Investigator Instructor/Laboratory Supervisor	
<b>b</b>	Inspection Date(s)	
<b>c</b>	Inspector's Name(s)	
<b>d</b>	Proposal Number	
<b>e</b>	Proposal Title	
<b>f</b>	Laboratory Location	

Biosafety Level 1 is suitable for work involving well-characterized agents not known to consistently cause disease in healthy adult humans, and of minimal potential hazard to laboratory personnel and the environment. The laboratory is not necessarily separated from the general traffic patterns in the building. Work is generally conducted on open bench tops using standard microbiological practices. Special containment equipment or facility design is neither required nor generally used. Laboratory personnel have specific training in the procedures conducted in the laboratory and are supervised by a scientist with general training in microbiology or a related science.

Item	Question	Response			Comments	Ref.
		Yes	No	N/A		
<b>A Standard Biological Safety</b>						
1	Access to the laboratory is limited or restricted at the discretion of the laboratory director when experiments or work with cultures and specimens are in progress.					CDC/BMBL
2	Persons wash their hands after they handle viable materials, after removing gloves, and before leaving the laboratory					CDC/BMBL
3	Eating, drinking, smoking, handling contact lenses, applying cosmetics, and storing food for human use are not permitted in the work areas. Persons who wear contact lenses in laboratories should also wear goggles or a face shield. Food is stored outside the work area in cabinets or refrigerators designated and used for this purpose only.					CDC/BMBL

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4	Mouth pipetting is prohibited; mechanical pipetting devices are used.					CDC/BMBL
5	Policies for the safe handling of sharps are instituted.					CDC/BMBL
6	All procedures are performed carefully to minimize the creation of splashes or aerosols.					CDC/BMBL
7	Work surfaces are decontaminated at least once a day and after any spill of viable material.					CDC/BMBL
8	All cultures, stocks, and other regulated wastes are decontaminated before disposal by an approved decontamination method such as autoclaving. Materials to be decontaminated					CDC/BMBL
9	A biohazard sign must be posted at the entrance to the laboratory whenever infectious agents are present. The sign must include the name of the agent(s) in use and the name and phone number of the investigator.					CDC/BMBL
10	An insect and rodent control program is in effect.					CDC/BMBL
<b>B No Special Practices Necessary</b>						
<b>C Safety Equipment (Primary)</b>						
1	Special containment devices or equipment such as a biological safety cabinet are generally not required for manipulations of agents assigned to Biosafety Level 1					CDC/BMBL
2	It is recommended that laboratory coats, gowns, or uniforms be worn to prevent contamination or soiling of street clothes.					CDC/BMBL
3	Gloves should be worn if the skin on the hands is broken or if a rash is present. Alternatives to powdered latex gloves should be available.					CDC/BMBL

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4	Protective eyewear should be worn for conduct of procedures in which splashes of microorganisms or other hazardous materials is anticipated.					CDC/BMBL
<b>4 Laboratory Facilities</b>						
1	Laboratories should have doors for access control					CDC/BMBL
2	Each laboratory contains a sink for handwashing					CDC/BMBL
3	The laboratory is designed so that it can easily cleaned. Carpets and rugs in laboratories are not appropriate.					CDC/BMBL
4	Bench tops are impervious to water and are resistant to moderate heat and the organic solvents, acids, alkalis, and chemicals used to decontaminate the work surface and equipment.					CDC/BMBL
5	Laboratory furniture is capable of supporting anticipated loading and uses. Spaces between benches, cabinets, and equipment are accessible for cleaning.					CDC/BMBL
6	If the laboratory has windows that open to the exterior, they are fitted with fly screens.					CDC/BMBL
<b>6 Emergency Preparedness</b>						
a	Are first aid supplies clearly labeled and current with respect to shelf life?					CDC/BMBL
b	Are emergency contact telephone numbers (fire, etc.) posted on or near the telephone?					CDC/BMBL
c	Are eyewash and shower facilities available and unobstructed?					CDC/BMBL
d	Are eyewash stations flushed weekly?					CDC/BMBL
e	Is an emergency warning system, including a fire alarm, available in the event of an incident?					CDC/BMBL
f	Are emergency procedures and evacuation routes known by all employees?					CDC/BMBL

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g	Are fire extinguishers immediately accessible, and do all employees know their location?					CDC/BMBL
h	Are fire extinguishers visually inspected for certification and leakage if gauge is present?					CDC/BMBL
i	Are emergency lights available and functional?					CDC/BMBL
j	Are emergency exits clearly marked, free from obstruction, and unlocked?					CDC/BMBL
k	Are doors, passageways, or stairways that are neither exits nor access to exits marked as "Not an Exit"					CDC/BMBL
<b>7 Personal Protective Equipment</b>						
d	Are gloves used in the laboratory? If so, circle types of gloves used <b>Latex:</b> biohazard, acid; <b>Nitrile:</b> biohazard, solvent; <b>Butyl:</b> solvent; <b>PVA:</b> solvent; <b>Neoprene:</b> solvent; <b>PVC:</b> solvent; <b>Insulated:</b> hot or cold surfaces					CDC/BMBL
f	Do employees wear eye/face protection during laboratory operations? If so, circle type used. <b>Safety:</b> impact, UV, laser; <b>Goggles:</b> chemicals; <b>Full-face shield:</b> hazardous chemicals, biohazard splash, UV					CDC/BMBL
g	Have employees been trained in the selection and use of eye/face protection?					CDC/BMBL
i	Is equipment properly labeled warning of noise hazard?					CDC/BMBL
k	Are appropriate and properly fitting laboratory coats or smocks available for all laboratory workers?					CDC/BMBL
l	Are lab coats worn in the laboratory, removed before exiting the laboratory, and not worn in non-laboratory areas?					CDC/BMBL
m	Do all employees in the laboratory wear close-toed shoes?					CDC/BMBL
n	Are employees instructed in proper first-aid & other emergency procedures?					CDC/BMBL

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<b>8 Radiation Safety</b>						
a	Are radioactive isotopes used in this laboratory? If so, list isotopes in comments.					CDC/BMBL
b	Do only authorized users handle radioactive compounds?					CDC/BMBL
c	Do personnel conduct required periodic radiation monitoring?					CDC/BMBL
d	Do authorized users wear personal monitoring devices (badges)?					CDC/BMBL
e	Have personnel been trained in radioactive materials spill control/clean-up procedures?					CDC/BMBL
f	Have personnel been trained in radioactive waste disposal procedures?					CDC/BMBL
<b>9 Compressed Gas Cylinders</b>						
a	Are compressed gases used in this laboratory? If so, list gases in comments.					CDC/BMBL
b	Are tanks properly identified?					CDC/BMBL
c	Are all gas cylinders secured to prevent falling?					CDC/BMBL
d	Are empty gas cylinders labeled Empty or MT?					CDC/BMBL
e	When gas cylinders are not in use, is the valve cap securely in place to protect the valve stem and valve?					CDC/BMBL
f	Is a non-adjustable cylinder wrench available for connecting and disconnecting gas cylinders?					CDC/BMBL
g	Have personnel required to move, disconnect, and connect compressed gas cylinders been formally trained to do so? ( <i>Compressed Gas Association</i> requirement.)					CDC/BMBL
<b>10 Electrical Safety</b>						

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a	Have you experienced any electrical problems in your laboratory? If so, explain in comments.					CDC/BMBL
b	Does high-voltage equipment have proper labels warning of the hazard?					CDC/BMBL
c	Are cords and plugs regularly inspected for wear and fraying, and repaired when necessary?					CDC/BMBL
d	Are electrical cords run from equipment to outlets so as to prevent trip/safety hazards?					CDC/BMBL
e	Are electrical cords run through doors, windows, under carpeting, or above ceilings?					CDC/BMBL
f	Is there an adequate number of fixed receptacles provided to eliminate the need for extension cords?					CDC/BMBL
g	Is access to electrical panels unobstructed? (36-inch clearance is required)					CDC/BMBL
h	Are all circuit breaker boxes appropriately labeled?					CDC/BMBL
i	Do employees know the location of circuit boxes relevant to their laboratory?					CDC/BMBL

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<b>11 Hazardous Materials and Chemical Management</b>						
a	Do employees have access to the Chemical Hygiene Plan, and is their evidence that they have read it?					CDC/BMBL
b	Is a current inventory of hazardous chemicals used within the laboratory available?					CDC/BMBL
c	Are hard copies and/or electronic access of manufacturer Material Safety Data Sheets (MSDS) for hazardous chemicals readily available to all employees at all times?					CDC/BMBL
d	Do employees understand how to use MSDSs to determine the toxic, flammable, and other hazardous properties of chemicals being used?					CDC/BMBL
e	Is there a written protocol for chemical spills available and have all employees reviewed it?					CDC/BMBL
f	Is a certified, ventilated chemical fume hood available for use with volatile chemicals?					CDC/BMBL
g	Have laboratory procedures involving powerful oxidizing agents, such as perchloric acid, been reviewed by the Chemical Section Chief? (Refer to <i>Oxidizing Chemicals</i> , NCID 2002 Chemical Hygiene Plan)					CDC/BMBL
h	Are chemical storage containers inspected periodically for rust, corrosion, or leakage?					CDC/BMBL
i	Are damaged containers removed/disposed of immediately?					CDC/BMBL
j	Are containers of hazardous or frequently used chemicals stored below eye level?					CDC/BMBL
k	Are reagent bottles or containers kept from protruding over shelf edges?					CDC/BMBL
l	Are shelves level and stable and shelving units securely fastened to the wall or floor?					CDC/BMBL
m	not in use and available only to authorized personnel?					CDC/BMBL

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n	Are chemicals kept in airtight bottles, rather than in beakers or open vessels?					CDC/BMBL
o	Are chemicals kept from direct exposure to sunlight or localized heat?					CDC/BMBL
p	Are containers of corrosive chemicals stored in trays or cabinets large enough to contain spillage or leakage?					CDC/BMBL
q	Are chemical storage cabinets with highly volatile or odorous compounds ventilated?					CDC/BMBL
r	Are NFPA-approved safety cabinets used for storage of flammable liquids? (These may be metal or wooden, as long as they meet NFPA and OSHA design standards.)					CDC/BMBL
s	Are chemicals stored compatibly by reactive class (e.g., flammables with flammables, oxidizers with oxidizers)? (Refer to <i>Chemical Handling Guidelines</i> , NCID 2002 Chemical Hygiene Plan)					CDC/BMBL
t	Are the quantities of flammable chemicals limited to the amount needed for current work and storage of excess flammables not permitted?					CDC/BMBL
u	Are flammables kept away from any source of ignition, such as flames, heat, or sparks, including electrical equipment or instrumentation that could spark or arc?					CDC/BMBL
v	Are only laboratory-approved (intrinsically safe) refrigerators used for storing volatile flammable liquids?					CDC/BMBL
w	Are bottle carriers used for transporting large reagent bottles?					CDC/BMBL
x	Are solutions of inorganic hydroxides (e.g., NaOH) stored in polyethylene containers rather than glass?					CDC/BMBL
y	Are peroxide-forming chemicals (ethers, selected hydrocarbon solvents) stored in airtight containers in a dark, cool, and dry place, and properly discarded before date of expected peroxide formation?					CDC/BMBL



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z	Are poisonous and highly toxic compounds stored according to the nature of the chemical, with appropriate security measures?					CDC/BMBL
aa	If your lab produces chemicals and solutions for a laboratory outside of yours, do you comply with a hazard communication program?					CDC/BMBL
ab	Are NFPA hazard labels and identification system used for labeling all dangerous chemicals?					CDC/BMBL
ac	Are all containers clearly labeled as to their contents and labels are firmly attached to containers?					CDC/BMBL
ad	Are labels legible, in English, and free of encrustation or contamination?					CDC/BMBL
ae	Are all containers/samples stored in refrigerators/freezers properly labeled ?					CDC/BMBL
af	Do all container labels include date of receipt?					CDC/BMBL
ag	Are all hoods functioning at 150 lfm (linear feet/minute)?					CDC/BMBL
ah	Are hoods neat, free of junk, and is there plenty of workspace? If asbestos lined, is the lining flaking?					CDC/BMBL
ai	Do employees complain about dizziness, headaches, nausea, irritation or other factors of discomfort when they use solvents or other chemicals?					CDC/BMBL
aj	Is there a dermatitis problem? Do employees complain about dryness, irritation or sensitization of the skin?					CDC/BMBL

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<b>12 Hazardous Waster Management</b>						
a	If you store hazardous waste in or around your laboratory, does the area have secondary containment (another container, like a pan, capable of holding approximately the volume of the largest hazardous waste container inside it)?					CDC/BMBL
b	Have personnel disposing of hazardous chemical waste received training and certification to do so? If so, list certified personnel in comments.					CDC/BMBL
c	Are hazardous chemicals properly disposed of through the hazardous chemical waste disposal program?					CDC/BMBL
d	Is a chemical response cabinet readily accessible to your laboratory for spill and/or release cleanup where hazardous materials are used or stored?					CDC/BMBL
e	Are chemical waste receptacles properly marked and easily located?					CDC/BMBL
<b>13 Wastewater Management</b>						
a	Does your laboratory make sure to submit all hazardous and potentially hazardous substances for hazardous waste pickup, and not pour them down the drain?					CDC/BMBL
c	Do workers from your laboratory notify the Section Chief and/or Lab Director immediately if any hazardous substance is poured down the drain?					

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<b>14</b>	<b>Pollution Prevention</b>					

Item	Question	Response			Comments	Ref.
		Yes	No	N/A		
a	Does someone in your laboratory periodically take inventory of all chemicals in the laboratory to remove all unused or unusable (age, contamination) chemicals?					CDC/BMBL
<b>15 Training and Safety References</b>						
a	Personnel have been trained in the procedures to be used and the training is documented					
b	Emergency procedures are in writing and understood by all					
c	All rDNA projects are registered with the IBRDSC					
d	A copy of the NIH Guidelines for Research involving Recombinant DNA Molecules is available in the lab					
e	Emergency procedures are in writing and understood by all					

Item	Question	Response			Comments	Ref.
		Yes	No	N/A		
<b>16 Reviewers Summary</b>						
a	Summarize review findings below					
b	Indicate final disposition or recommendations below:					

Biological Safety Coordinator: \_\_\_\_\_ Date: \_\_\_\_\_

Principle Investigator \_\_\_\_\_ Date: \_\_\_\_\_