

Biological Safety Survey

Date Performed: _____ Lab / Room: _____ Biosafety Level: _____

P.I. / Supervisor: _____ Lab type: _____ HBA/rDNA: _____

Procedure: Evaluate each of the following laboratory items according to the requirements of the 5th Edition of the HHS/CDC publication Biosafety in Microbiological and Biomedical Laboratories (BMBL), the NIH Guidelines for recombinant DNA Research and the UTRGV Biological Safety Handbook. Place a check in the appropriate space for Y (Yes), N (No), N/O (Not Observed), or N/A (Not Applicable). Enter comments in the space provided.

	Y	N	N/O	N/A	COMMENTS
Standard Microbiological Practices					
1. Laboratory supervisor enforces institutional policies that control access to the laboratory. (BMBL BSL 1,2,3), NIH rDNA App. G-II (A-1-a, B-1-a, B-2-b)					
2. Persons wash their hands after working with potentially hazardous materials and before leaving the laboratory. (BMBL BSL 1,2,3), NIH rDNA App. G-II(A-1-f, B-1-f, C-1-e)					
3. No eating, drinking, smoking, handling contact lenses, applying cosmetics, and storing food/drink for human consumption. Food/drink is stored outside the laboratory area in cabinets and refrigerators designated for that purpose. (BMBL BSL 1,2,3), NIH rDNA App. G-II(A-1-e, B-1-e, C-1-d)					
4. Mouth pipetting is prohibited and only mechanical pipetting devices are used. (BMBL BSL 1,2,3), NIH rDNA App. GII(A-1-d, II-B-1-d,II- C-1-c)					
5. Policies for the safe handling of sharps, such as needles, scalpels, pipettes, and broken glassware have been developed and implemented. Whenever practical , laboratory supervisors have adopted improved engineering and work practice controls that reduce risk of sharps injuries (BMBL BSL 1,2,3)					
6. Careful management of needles and other sharps are of primary importance. Needles are not bent, sheared, broken, recapped, removed from disposable syringes, or otherwise manipulated by hand before disposal. (BMBL BSL 1,2,3), NIH rDNA App. GII (B-2-j, C-2-p needle-locking syringes or syringe-needle unit are used for injection or aspiration of fluids of organisms containing rDNA molecules)					
7. Used disposable needles are carefully placed in conveniently located puncture resistant containers used for sharps disposal (BMBL BSL 1,2,3) NIH rDNA App. GII(B-2-j)					
8. Non-disposable sharps must be placed in a hard walled container for transport to a processing area for decontamination, preferably by autoclaving. (BMBL BSL 1,2,3) NIH rDNA App. GII(B-2-j)					

	Y	N	N/O	N/A	COMMENTS	
9.					Broken glassware must not be handled directly. Instead, it must be removed using a brush and dustpan, tongs, or forceps. Plasticware is substituted for glassware whenever possible. (BMBL BSL 1,2,3)	
10.					All procedures are performed to minimize the creation of splashes and/or aerosols. (BMBL BSL 1,2,3), NIH rDNA App. G-II (A-1-g, B-1-g, C-1-f)	
11.					Work surfaces are decontaminated after completion of work and after any spill or splash of potentially infectious material with appropriate disinfectant. (BMBL BSL 1,2,3), NIH rDNA App. G-II(A-1-b, B-1-b, C-1-a)	Disinfectant used?
12.					All cultures, stocks, and other potentially infectious materials are decontaminated before disposal using an effective method. (BMBL BSL 1,2,3), NIH rDNA App. G-II (A-1-c,B-2-l,C-1-b,C-2-n (waste))	Methods used?
13.					Materials to be decontaminated outside the immediate laboratory are placed in a durable, leak-proof, container and secured for transport. (BMBL BSL 1,2,3), NIH rDNA App. G-II(A-2-a, B-2-a,C-2-b)	
14.					Materials to be removed from the facility for decontamination are packed in accordance with applicable local, state, and federal regulations. (BMBL BSL 1,2,3)	
15.					A sign incorporating the universal biohazard symbol is posted at the entrance to the laboratory when infectious materials are present. Posted information must include the laboratories biosafety level, supervisor's name (or other responsible person), telephone number, and required procedures for entering and exiting the laboratory. Agent information is posted according to institutional policy. (BMBL BSL 1,2,3), NIH rDNA App. G-II(B-2-d,C-2-e)	
16.					An effective integrated pest management program is in place. (BMBL BSL 1,2,3), NIH rDNA App. G-II-A-2-b, B-2-e, C-2-h)	
17.					The laboratory supervisor has ensured that the laboratory personnel receive appropriate training regarding their duties, the necessary precautions to prevent exposures, and exposure evaluation procedures. Personnel receive annual updates or additional training when procedural or policy changes occur. (BMBL BSL 1,2,3)	
18.					Personnel health status may impact an individual's susceptibility to infection, ability to receive immunizations or prophylactic interventions. Therefore, all laboratory personnel and particularly women of child bearing age have been provided with information regarding immune competence and conditions that may predispose them to infections. Individuals having these conditions have been encouraged to self-identify to the institution's healthcare provider for appropriate counseling and guidance. (BMBL BSL 1,2,3)	
Special Practices (None required for BSL-1 and ABSL-1)						
19.					All persons entering the laboratory must be advised of the potential hazards and meet specific entry/exit requirements (BMBL BSL 2,3), NIH rDNA App. G-II(B-2-c, C-2-cd (PI has final responsibility for assessing who can enter the lab)	

		Y	N	N/O	N/A	COMMENTS
20.	Laboratory personnel are provided medical surveillance and offered appropriate immunizations for agents handled or potentially present in the laboratory.(BMBL BSL 2,3)					
21.	Institutional policies and procedures have been established which describe the collection and storage of serum sample from at-risk personnel. (if applicable) (BMBL BSL 2,3) NIH rDNA App. G-II(B-2-l, C-2-r)					
22.	A laboratory specific biosafety manual has been prepared and adopted as policy. The biosafety manual is available and accessible. (BMBL BSL 2,3) NIH rDNA App.G-II (B-2-m, C-2-s)					
23.	The laboratory supervisor must ensure that laboratory personnel demonstrate proficiency in standard and special microbiological practices before working with BSL-2 and/or 3 agents. (BMBL BSL 2,3)					
24.	Potentially infectious materials is placed in durable, leak proof container during the collection, handling, processing, and transport within a facility. (BMBL BSL 2,3)					
25.	Laboratory equipment is routinely decontaminated, as well as, after spills, splashes, or other potential contamination. (BMBL BSL 2,3)					
26.	Spills involving infectious materials are contained, decontaminated, and cleaned up by staff properly trained and equipped to work with infectious material. (BMBL BSL 2,3)					
27.	Equipment is decontaminated before repair, maintenance, or removal from the laboratory. (BMBL BSL 2,3)					
28.	Incidents that may result in exposure to infectious materials is immediately evaluated and treated according to procedures described in the laboratory safety manual. All such incidents are reported to the laboratory supervisor. Medical evaluation, surveillance, and treatment is provided and appropriate records maintained. (BMBL BSL 2,3) NIH rDNA App. G-II(B-2-k, C-2-q) (Spills and accidents that result in overt exposure to organisms containing rDNA molecules are immediately reported to the IBC and NIH/OBA.)					
29.	Animals and plants not associated with the work being performed is not permitted in the laboratory. (BMBL BSL 2,3), NIH rDNA App. G-II(B-2-g, C-2-l)					
30.	All procedures involving the manipulation of infectious materials that may generate an aerosol is conducted within a BSC or other physical containment device. (BMBL BSL 2,3)					
31.	Work with open vessels is not conducted on the bench. When a procedure cannot be performed within a BSC, a combination of personal protective equipment and other containment devices, such as a centrifuge safety cup or sealed rotor, must be used. (BMBL BSL 3) NIH rDNA App. G-II-C-2-f)					

	Y	N	N/O	N/A	COMMENTS
Safety Equipment					
32.					BSC model/SN, certification date:
Special containment devices/equipment, such as BSCs are generally not required at BSL-1. Properly maintained BSCs (preferable class II), other appropriate personal protective equipment, or other physical containment devices are used whenever procedures with a potential for creating infectious aerosols or splashes are conducted. These may include pipetting, centrifuging grinding, blending, shaking, mixing, sonicating, opening containers of infectious materials, inoculating animals intranasally, and harvesting infected tissues from animals or eggs, (BMBL BSL 2), NIH rDNA App. G-II-B-3-a-(1)					
33.					
Properly maintained BSCs (preferable class II), other appropriate personal protective equipment, or other physical containment devices are used whenever high concentrations or large volumes of infectious agents are used. (BMBL BSL 2), NIH rDNA App. G-II-B-3-a-(2)					
34.					
All procedures involving the manipulation of infectious materials must be conducted within a BSC (preferably Class II or Class III), or other physical containment devices. (BMBL BSL 3), NIH rDNA App. G-II-C-3-a, G-II-C-2-g(BL2,BL3 - work surfaces of BSC and other containment equipment are decontaminated when work with rDNA organisms is finished, plastic back paper toweling in BSC facilitates cleanup.)					
35.					
Protective laboratory coats, gowns, smocks, or uniforms designated for laboratory use must be worn while working with hazardous materials. Protective clothing is removed before leaving for non-laboratory areas (eg., cafeteria, library, administrative offices). Protective clothing is disposed of appropriately, or deposited for laundering by the institution. It is recommended that laboratory clothing not be taken home. (BMBL BSL 2), NIH rDNA App. G-II-B-2-f					
36.					
Protective clothing with a solid front such as tie-back or wrap around gowns, scrub suits, or coveralls are worn by workers when in the laboratory. Protective clothing is not worn outside the laboratory. Reusable clothing is decontaminated with appropriate disinfectant before being laundered. Clothing is changed when contaminated. (BMBL BSL 3), NIH rDNA App. G-II-C-2-i					
37.					
Eye and face protection (goggles, mask, face shield, or other splatter guard) is used for anticipated splashes or sprays of infectious or other hazardous materials. Eye and face protection must be disposed of with other contaminated laboratory waste or decontaminated before reuse. Persons who wear contact lenses must also wear eye protection. (BMBL BSL 2,3)					
38.					
Gloves are worn to protect hands from exposure to hazardous materials. Glove selection is based on an appropriate risk assessment. Alternatives to latex gloves are available. Gloves must not be worn outside the laboratory. (BMBL BSL 2,3) NIH rDNA App. G-II(B-2-h,C-2-j)					
39.					
Gloves are changed when contaminated, integrity has been compromised, or when otherwise necessary. Two pairs of gloves are worn when appropriate. (BMBL BSL 2,3)					

	Y	N	N/O	N/A	COMMENTS
40.					Gloves are removed and hands are washed when work with hazardous materials has been completed and before leaving the laboratory. (BMBL BSL 2,3)
41.					Disposable gloves are not washed or reused. Used gloves are disposed of with other contaminated laboratory waste. Hand washing protocols are rigorously followed. (BMBL BSL 2,3)
42.					Eye, face, and respiratory protection must be used in rooms containing infected animals. (BMBL BSL 2,3) NIH rDNA App. G-II-C-2-k Laboratory Facilities (Secondary Barriers)
43.					Laboratories should have doors for access control. (BMBL BSL-1)
44.					Laboratory doors should (BSL-2)/ must (BSL-3) be self closing and have locks in accordance with the institutional policies. (BMBL BSL/ABSL 2,3)
45.					Laboratory must be separated from other areas that are open to unrestricted flow within the building. (BMBL BSL/ABSL 3), NIH rDNA App. G-II-C-4-a
46.					Access to the laboratory is restricted to entry by a series of two self-closing doors. (BMBL BSL/ABSL 3), NIH rDNA App. G-II-C-4-a
47.					A clothing change room (anteroom) may be included in the passageway between the two self-closing doors. (BMBL BSL 3)
48.					Laboratories must have a sink for hand washing. (BMBL BSL 1,2,3), NIH rDNA App. G-II(A-4-d,B-4-d,C-4-e) The sink may be (BSL2)/must be (BSL3) manually, hands free, or automatically operated. It should be located near the exit door. At BSL/ABSL3, if the laboratory is segregated into different laboratories, a sink must be available for hand washing in each zone and additional sinks may be required as determined by the risk assessment.
49.					The laboratory must be designed so that it can be easily cleaned (and decontaminated – BSL2,3). Carpets and rugs in laboratories are not appropriate (BSL 1) / not permitted (BSL 2,3). (BMBL BSL/ABSL3), NIH rDNA App. G-II(A-4-a,B-4-a)
50.					Seams, floors, walls, and ceiling surfaces should be sealed. Spaces around doors and ventilation openings should be capable of being sealed to facilitate space decontamination. (BMBL BSL/ABSL-3) NIH rDNA App. G-II(C-4-b)
51.					Floors must be slip resistant, impervious to liquids, and resistant to chemicals. Consideration should be given to the installation of seamless sealed resilient or poured floors, with integral cove bases. (BMBL BSL3/ABSL-3) NIH rDNA App. G-II(C-4-b)
52.					Walls should be constructed to produce a sealed smooth finish that can be easily cleaned and decontaminated. (BMBL BSL/ABSL 3) NIH rDNA App. G-II(C-4-b)
53.					Ceilings should be constructed, sealed, and finished in the same general manner as walls. (BMBL BSL/ABSL 3) NIH rDNA App. G-II(C-4-b)

	Y	N	N/O	N/A	COMMENTS
54.					Decontamination of the entire laboratory should be considered when there is gross contamination of the space, significant changes in laboratory usage, for major renovations, or maintenance shutdowns. Methods and materials used to decontaminate the laboratory must be based on the risk assessment of the biological agents used. (BMBL BSL/ABSL 3)
55.					Laboratory furniture must be capable of supporting anticipated loads and uses. Spaces between benches, cabinets, and equipment should be (BSL1,2) / must be (BSL3) accessible for cleaning. Bench tops must be impervious to water and resistant to heat, organic solvents, acids, alkalis, and other chemicals. Chairs used in laboratory work must be covered with a non-porous material that can be easily cleaned and decontaminated with appropriate disinfectant. (BMBL BSL/ABSL1,2,3) NIH rDNA App. G-II(A-4-b,c; B-4-b,c; C-4-c,d)
56.					Laboratories windows that open to the exterior should be(BSL-1)/must be (BSL-2) fitted with screens. NIH rDNA App. G-II(A-4-e,B-4-e). Laboratory windows that open to the exterior are not recommended. At BSL-3, all windows in the laboratory must be sealed. (BMBLBSL-3/ABSL-3, NIH rDNA App. G-II(C-4-f).
57.					BSCs must be installed so that fluctuations of the room air supply and exhaust do not interfere with proper operations. BSCs should be located away from doors, windows that can be opened (BSL2only), heavily traveled areas, and other possible airflow disruptions. (BMBL BSL/ABSL 2,3)
58.					Vacuum lines should be protected with High Efficiency Particulate Air (HEPA) filters, or their equivalent. Filters must be replaced as needed. Liquid disinfectant traps may be required. (BMBL BSL 2,3) NIH rDNA App. G-II(C-2-o).
59.					An eyewash station must be readily available. (BSL2). At BSL-3, an eyewash station must be readily available in the laboratory. (BMBL BSL/ABSL3)
60.					No specific requirements on ventilation systems at BSL2 but new facilities should consider mechanical ventilation systems that provide inward airflow without recirculation to spaces outside the laboratory. At BSL3, a ducted ventilation system is required and must provide directional airflow by drawing air into the laboratory from "clean" areas toward "potentially contaminated" areas. The laboratory is designed such that under failure conditions the airflow will not be reversed. (BMBL BSL3/ABSL-3), NIH rDNA App. G-II(C-4-i).
61.					Laboratory personnel must be able to verify directional airflow. A visual monitoring device which confirms directional air flow must be provided at the laboratory entry. Audible alarms should be considered to notify personnel of air flow disruption. (BMBL BSL 3/ABSL-3) NIH rDNA App. G-II(C-4-i).
62.					The laboratory exhaust air must not re-circulate to any other area of the building. (BMBL BSL/ABSL3) NIH rDNA App. G-II(C-4-i).

	Y	N	N/O	N/A	COMMENTS
63.					The laboratory building exhaust air should be dispersed away from occupied areas and from building air intake locations or the exhaust air must be HEPA filtered. (BMBL BSL/ABSL 3) NIH rDNA App. G-II(C-4-i).
64.					HEPA filtered exhaust air can be safely re-circulated into the laboratory if the cabinet is tested and certified at least annually and operated according to manufacturer's recommendations. BSCs can be connected to the laboratory exhaust system by either a thimble connection or a direct (hard) connection. Provisions to assure proper safety cabinet performance and air system operation must be verified. (BMBL BSL 2,3) Class III BSC must be hard connected up through the second exhaust HEPA filter of the cabinet. Supply air must be provided in such a manner that prevents positive pressurization of the cabinet. (BMBL BSL/ABSL 3) NIH rDNA App. G-II(C-4-j).
65.					A method for decontaminating all laboratory wastes should be available in the facility (e.g., autoclave, chemical disinfection, incineration, or other validated decontamination method). (BMBL BSL/ABSL 2,3) NIH rDNA App. G-II(B-4-f, C-4-h).
66.					Equipment that may produce infectious aerosols must be contained in devices that exhaust air through HEPA filtration or other equivalent technology before being discharged into the laboratory. These HEPA filters should be replaced at least annually. (BMBL BSL 3)
67.					Facility design consideration should be given to means of decontaminating large pieces of equipment before removal from the laboratory. (BMBL BSL 3)
68.					Enhanced environmental and personal protection may be required by the agent summary statement, risk assessment, or applicable local, state or federal regulations. Enhancements could include: an anteroom for clean storage of equipment and supplies with dress-in, shower out capabilities; gas tight dampers; final HEPA filtration of the laboratory exhaust air; laboratory effluent decontamination; advanced access controls; decontamination ports; bag-in/bag-out capability. The HEPA filter housing should allow for leak testing of each filter and assembly. The filters and housing should be certified at least annually. (BMBL BSL 3/ABSL-3)
69.					The BSL-3 facility design, operational parameters, and procedures must be verified and documented prior to operation. Facilities must be re-verified and documented at least annually. (BMBL BSL 3/ABSL-3)
Animal Biosafety: Additional Requirements					
70.					Floor drains must be maintained and filled with water, and/or appropriate disinfectant to prevent migration of vermin and gases. BMBL ABSL-3
71.					Cages are washed in a mechanical cage washer. The mechanical cage washer has a final rinse temperature of at least 180o F. Cages should be autoclaved or decontaminated prior to removal from the ABSL-3 space. BMBL BSL-3
72.					Illumination is adequate for all activities, avoiding reflections and glare that could impede vision. BMBL BSL-3

	Y	N	N/O	N/A	COMMENTS
73. Emergency eyewash and shower are readily available; location determined by risk assessment. BMBL BSL-3					
74. Previous deficiencies adequately resolved?					
75. There are no additional safety concerns?					

Training (indicate date of training)

Last Name	First Name	UTRGV Employee ID	CITI	Laboratory Safety	Biological Safety (BSL-2)	Specific Training

Any unsatisfactory safety condition or concern must be relayed to the appropriate the Laboratory PI.

SIGNATURES

This facility has been evaluated against criteria specified in the HHS/CDC publication 5th Edition Biosafety in Microbiological and Biomedical Laboratories (BMBL), NIH Guidelines for Research Involving rDNA Molecules, and the UTRGV Biological Safety Handbook.

Evaluated by: _____

Date evaluated: _____