

Material**Hazards****Precautions**

HELA Cell Line	Blood borne pathogens	Use BSC, gloves, lab coat safety glasses; Hepatitis B vaccine; sharps precautions; disinfection after work with material
Listeria monocytogenes	Human pathogen, may abort pregnancy	Use BSC, gloves, lab coat safety glasses; disinfection after work with material
Lentivirus	HIV virus; retroviral RNA is converted to DNA by a virally encoded reverse transcriptase enzyme, the DNA transcript is integrated into the host's chromosomal DNA; recombination risk	Use BSC, gloves, lab coat safety glasses; disinfection after work with material; Designated and isolated work area. Warning signs posted. Possible respirator use needed (manipulation dependent); sharps precautions; IBC approval needed
E. coli (K12 strain)	Low; recombinant material	Must report spills and exposures to Biosafety Officer (NIH requirement)
E. coli (0157:H7 strain)	Enterohemorrhagic human pathogen	Use BSC, gloves, lab coat safety glasses; disinfection after work with material
Danio rerio (fish)	No zoonotics, however environmental organisms are known to be an issue with the tank and water	Use gloves and good hand hygiene; maintain the tanks by cleaning them as is necessary
Botulinum toxin	Human and animal pathogen	Limit volume below Select Agent registration limit. Use in BSC; notify Biosafety Officer
Ixodes scapularis (tick)	Lyme disease, babesiosis	Maintain in cages and secondary containment; keep a count of ticks to determine if an escape has occurred; Use sticky barriers to trap possible escapees
Lipopolysaccharide (LPS)	Endotoxin; induces a strong immune response, including inhalation airway inflammation, the progression of asthma, and other forms of airway disease.	Double nitrile gloves, chemical safety goggles, Lab coat. Appropriate PPE should also be used for lower arms such as sleeve covers or securing gloves over the sleeves of laboratory coat. Personnel should not work with LPS if skin is cut or scratched.
Arabidopsis thaliana	Low	Use within containment (growth chamber or greenhouse)

APPENDIX B**(examples)****BSL-2 SOP****Equipment****Hazards****Precautions**

Centrifuge	Aerosols	Containment vessels must be used: sealed rotors, sealable centrifuge cups; screw on tops, etc.; clean centrifuge on a regular schedule and after contamination events.
Sonicator	Aerosols	Keep unit covered when in use; clean regularly; use in a BSC when using pathogens, etc.
Vortex mixer	Droplets and aerosols	Keep items to be vortexed clean (wipe off before vortexing), use mixer in BSC; tightly close vials or caps
Bunsen burner	Aerosols and fire hazards	Do not use in BSC as heat will damage HEPA filter and cause turbulence; Utilize burner away from flammables; causes aerosols so clean work area after every use
Homogenizer; paddle blender, grinder; stomacher	Aerosols	Use systems that are enclosed (aerosols contained) or that can be placed in containment (BSC)
Lyophilizer	Aerosols	Use systems that are enclosed (aerosols contained) or that can be placed in containment (BSC)
Sharps	Needlestick injury; aerosols	Do not bend or break needle; do not re-cap; use needleless systems; Use automatic re-sheathing needles or scalpels; use blunt needles when possible
Flow cytometer	Aerosols; Instrument failures such as clogged sort nozzle or air in the fluidic system can drastically increase aerosol formation.	Biohazardous materials should not be sorted unless suitable containment measures are applied. A droplet containment module should be installed to reduce the risk of exposure to generated droplets and aerosols; utilize filter systems; Maintain equipment
Fermenter	Aerosols	Exhaust gas lines must be fitted with filters; In the event of a fermenter run becoming contaminated, or suspected of being contaminated, the run should be halted immediately and the fermenter and its contents sterilized; check all lines, at the start of each experiment.

