

Biomedical Engineering Research Hazards Safety Report

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1. Potential hazards in the research projects:

Class A: High pressure – CO₂ cylinder, liquid nitrogen tank

Class B: Flammable materials – 70% and 100% ethanol

Class D2: Long-term toxic effects – Cholera toxin, hydrocortisone

Class D1B: Toxic material causing immediate and serious toxic effects - Adenine

Class E: Corrosive materials

Radiation: Laser – Microscopes

Electrical: High voltage enclosed – Laser sources

Extreme low temperature – Liquid nitrogen

Potential falling objects – Items on shelves and cupboards

Biohazards – CP-A, CP-B and AT2 (Barrett's Esophageal Cells: BSL-2)

Very bright light – UV light, microscope light

Loud noise

Radioactive Isotope

2. Routine Operating Procedures:

Wear appropriate PPE before beginning lab work including lab coat with taped down sleeves and gloves. Bandage any open wounds and wear closed toed shoes and pants. Do not wear contacts in the lab. I will be handling BSL-2 cells in a BSL2 biological safety cabinet. Set up the BSC with necessary reagents and containers prior to starting lab work. Remember to always spray gloves and containers with 70% ethanol before going into the BSC and incubator. When lab work is completed, biohazardous waste should be tied inside the plastic bag in the BSC then disposed of in the red bin labeled "Biohazard". Check and refill incubator with autoclave water routinely and remove garbage every Friday. Biohazardous waste aspirator will be filled with 100% bleach every Friday, then poured down the sink and rinsed well with water on Monday. Wipe the working surface with 70% ethanol and wash hands with antibacterial hand wash after all lab work.

3. Emergency Preparation (Note: for immediate assistance, dial 5555 (the Biophotonics Facility is located in the hospital))

In case of fire, assess the cause and danger of the fire. If the fire is small, use the fire extinguisher beside the entrance doors while keeping your body near the exit in case of sudden change. If the fire is large, alert surrounding staff, pull the fire alarm, and take the stairs to

evacuate the building. In case of a chemical spill, obtain the appropriate spill kit on the wall next to the fridge. The first aid kit is also beside the spill kit. Cover the spill with the appropriate absorbent material, spray disinfectant on top of it and let it sit for 30 minutes. Discard the waste in the biohazardous waste bin and wipe down the area with disinfectant. If the chemical gets on yourself or in your eyes, the shower station is located beside the deconvolution room and the eyewash station is next to the sink. Check the MSDS sheet for further treatment instructions pertaining to the chemical spilled. Report all incidences to immediate supervisor.