UC Santa Cruz Environmental Health & Safety

Exposure Control Plan: Human cells and cell lines

This plan is designed to help protect employees by eliminating or minimizing their occupational exposure to pathogens potentially present in unfixed human cells. Human cells are to be handled following Biosafety Level 2 precautions (*Cal/OSHA Bloodborne Pathogens Standard, Title 8, Code of California Regulations, Section 5193; Biosafety in Microbiological and Biomedical Laboratories (BMBL) 5th Edition*).

Exposure Determination:

This plan applies to all personnel that may reasonably come into direct contact with human cells. This includes Principal Investigators, visiting researchers, staff, graduate and undergraduate students and ancillary support staff that work in research labs where human cells are present. Exposure may occur by any method known for agents (i.e. HIV, HCV, HBV etc.) that may be present in untested human cells (e.g. inhalation, inoculation, mucous membrane exposure, etc.).

Training Requirements:

Bloodborne Pathogens training, as it pertains to human cells, must be conducted at the time of initial assignment to tasks where occupational exposure may take place and at least annually thereafter. EH&S offers laboratory biosafety and bloodborne pathogen training on a routine basis: http://ehs.ucsc.edu/training_classes/lab_safety_training.php

Safe Practices:

- **PPE:** Minimum PPE includes disposable gloves, protective eye ware and lab coat. Additional PPE may be required for "high risk" procedures such as those with the potential for aerosol generation.
- Engineering controls: Manipulation of human cells requires secondary containment whenever possible. Safety Equipment should include: Biological Safety Cabinets (Class II), safety cups/sealed rotors for centrifuges, liquid-tight transport containers.
- **Sharps:** Limit sharps use at all times. Sharps should only be used when justified by the procedure and when no reasonable alternative exists. Any sharp object with the potential for puncturing skin (needles, blades etc.) must be handled and disposed of according to institutional policy.

http://ehs.ucsc.edu/lab_research_safety/biosafety.php http://ehs.ucsc.edu/lab_research_safety/pubs/bio/Sharps%20Matrix_3_2009.pdf http://www.dir.ca.gov/dosh/dosh_publications/bbpfct.pdf

Contaminated Waste Disposal:

Any items contaminated with human cells shall be disposed as outlined below:

- Solid Contaminated Wastes (non-sharps)
 - Containers and secondary containers must be closeable and prevent leakage and protrusion.
 - Containers must be labeled with the word BIOHAZARD and include the international biohazard symbol. Labels must be predominantly fluorescent orange or orange-red labels and symbols in contrasting colors.
 - Bags containing contaminated waste are color-coded **red** and labeled as a BIOHAZARD with the international biohazard symbol.

- Any contaminated metal or glass must go in a Sharps containers that meets the following:
 - o Rigid
 - o Puncture resistant
 - o Leak-proof on the sides and bottom
 - o Labeled with the international Biohazard Symbol and the word Biohazard
 - Closeable and sealable so that when sealed, the container is leak resistant and incapable of being reopened without great difficulty.
- Contaminated waste shall be disposed of according to institutional policy: <u>http://ehs.ucsc.edu/waste_management/biohazard_and_medical.php</u>

Hazard Communication:

- A sign incorporating the universal biohazard symbol must be posted at the entrance to the laboratory. Posted information must include: the laboratory's biosafety level, the supervisor's name (or other responsible personnel), telephone number, and required procedures for entering and exiting the laboratory.
- Warning labels with the Biohazard Symbol and the word Biohazard must be on all refrigerators, freezers and other equipment used to store or transport human cells.



Decontamination:

Decontaminate all equipment and working surfaces after experiments or spills with an appropriate disinfectant. Products registered with the Environmental Protection Agency (EPA) as tuberculocides or as effective against HIV and HBV are appropriate. In order to be effective, use disinfectants according to all label instructions.

Housekeeping:

Keep a written cleaning and decontamination schedule.

Laundry: Clean, launder, and/or dispose of lab coats when they become contaminated. Use disposable lab coats or coordinate with a vendor to rent and launder coats. Don't take lab coats home to wash!

Hepatitius B Vaccine:

All potentially exposed personnel must be offered the Hep B vaccine. It must be made available within 10 days of initial assignment, free of cost and at a reasonable time and place. Vaccination consists of a 3-dose series. The second and third doses are typically given 1 and 6 months after the initial dose, but a missed dose does not require the entire series to begin again. Employees may refuse the vaccine, but they need to be properly informed of its benefits through appropriate training. Those who decline must complete the vaccine declination form:

http://ehs.ucsc.edu/lab_research_safety/pubs/bio/HepBform_2009_decline.pdf

Exposure Incident:

Take the following first aid procedures in the event of employee exposure:

- Eye Exposure from splash or aerosols rinse a minimum of 15 minutes in eye wash or flush area with water.
- Needle stick and/or Sharps Exposure wash wound area with soap and water.

Every effort must be made to evaluate high-risk exposures and potentially administer post-exposure prophylaxis as soon as possible after the exposure incident.

Post Exposure Evaluation and Follow-up:

Injured employees should receive a confidential medical evaluation at the Santa Cruz Occupational Medical Center (SCOMC) or the Dominican Hospital Emergency Room as soon as possible after the incident. Non-employee (unpaid) student researchers may report to the UCSC Student Health Center for evaluation. Report exposure incidents to your supervisor, EH&S and the SCOMC immediately upon recognizing post exposure evaluation is needed. Fill out an Employer's Report of Injury within 24 hours of notification.

Santa Cruz Occupational Medical Center 831-457-7118 610 Frederick St Santa Cruz CA 95062 Dominican Emergency Room 831-462-7710 1555 Soquel Drive Santa Cruz CA 95065

http://risk.ucsc.edu/forms/IncidentInvestigation.pdf

Sharps Injury Log:

Injured employees and supervisors need to fill out a Sharps Injury Log form for all sharps injury exposure incidents, within 14 days of the incident. A copy of the form is given to the employee, and the original is submitted to EH&S for evaluation and follow-up. http://ehs.ucsc.edu/lab_research_safety/pubs/bio/UCSC%20Sharps%20Injury%20Log.pdf Principal Investigator: _____

Lab Group Participant List:

<u>Print Name</u>	Job Title/Descirption	<u>Signature</u>	Date
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