



UCSD Exposure Control Plan (ECP)

University of California, San Diego
Environment, Health and Safety, 0920
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Name: Human and Animal Established Cell Lines

BSL: 2

1. Mode of Transmission to Humans (e.g. inhalation, inoculation, mucous membrane exposure, etc.):

For Risk Group 2 materials, human disease has been documented. Ingestion, Inoculation, mucous membrane exposure and inhalation are possible modes of transmission.
For Risk Group 1 materials, human disease has not been documented, but best practices are to avoid ingestion, inoculation or contact with mucous membranes or non-intact skin.

2. Description of the Human Disease associated with this agent or vector (including instances of laboratory acquired infections):

Established human cells are covered by the Bloodborne Pathogen Standard and handled at Biosafety level 2. Potential hazards to laboratory workers are presented by cells transformed by viral agents such as Epstein-Barr virus, hepatitis B virus, and human papillomavirus.

Transplantation of allogeneic tissue from one human into another normally leads to a cell-mediated immune response that rejects the transplanted tissue. The following is an exception to this generality.

Laboratory Aquired Infection: While injecting mice, a healthy 19-year old punctured her hand with the needle that was previously used with human colonic adenocarcinoma cell line. The suspension was apparently not injected. Two weeks later a nodule at the point of the needle-stick. Excisional biopsy revealed adenocarcinoma cells. A large excision of the area was performed and the patient has no evidence of recurrence after 4 years. Gugel, E. A., and M. E. Sanders. 1986. Needle-stick transmission of human colonic adenocarcinoma. New England Journal of Medicine. 315:1487. (Letter.)

Non-human primates cells are handled at Biosafety level 2. These cells may contain simian retroviruses or other simian viruses associated with severe human disease (e.g. Herpesvirus simiae, Marburg virus).

While other species of animals can carry disease causing agents (e.g. lymphocytic choriomeningitis virus, hantavirus), established cell lines of other animal species are typically handled at Biosafety level 1 in the absence of known risk factors.

3. Personnel Protection Required (minimum requirement):

| | Laboratory | Vivarium | | Laboratory | Vivarium |
|-------------------|--|-------------------------------------|----------------|--------------------------|-------------------------------------|
| Safety Glasses | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Shoe Covers | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Lab Coat | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Face Shield | <input type="checkbox"/> | <input type="checkbox"/> |
| Gloves | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Cap/Head Cover | <input type="checkbox"/> | <input type="checkbox"/> |
| Goggles | <input type="checkbox"/> | <input type="checkbox"/> | Mask | <input type="checkbox"/> | <input type="checkbox"/> |
| Disposable Gowns | <input type="checkbox"/> | <input type="checkbox"/> | Other | <input type="checkbox"/> | <input type="checkbox"/> |
| Other - Describe: | <i>For Biosafety Level 1, wearing a laboratory coat is recommended but not required.</i> | | | | |

4. Engineering Controls (minimum requirement):

| | Laboratory | Vivarium | | Laboratory | Vivarium |
|--------------------------|--|-------------------------------------|------------------------------|-------------------------------------|-------------------------------------|
| Autoclave | <input type="checkbox"/> | <input type="checkbox"/> | Engineered Sharps Protection | <input type="checkbox"/> | <input type="checkbox"/> |
| BioSafety Cabinets | <input type="checkbox"/> | <input type="checkbox"/> | Sharps Containers | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Closed Centrifuge Rotors | <input type="checkbox"/> | <input type="checkbox"/> | Closed Centrifuge Tubes | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Other | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | |
| Other - Describe: | A Biosafety Cabinet must be used for all aerosolizing procedures | | | | |

5. Disposal Procedures:

Liquids: add bleach to a final concentration of 10% bleach solution (Clorox or other bleach with Cal EPA registration number), let sit for 30 minutes, dispose of in sink (best while running water). Aspirator flasks: bleach is added to aspirator flasks initially so that the final concentration will be 10%. These must be emptied at least weekly.

Solids: disposed of in labeled, double red biohazard bags held in labeled, rigid, covered containers. Transport to biohazard collection area in a closed rigid container for final disposal by EH&S. These must be emptied at least weekly.

6. Disinfection Procedures:

Surface: 10% household bleach solution made up fresh daily (Clorox or other bleach with Cal EPA registration number) allowing 5-minutes contact time.

OR

Surface: 75 ppm of CA EPA approved iodophor (e.g. Wescodyne) allowing 5-minutes contact time.

7. Recommended/Required Vaccinations or other Medical Surveillance:

Hepatitis B vaccination must be made available free of charge to employees with exposure to human blood, unfixed tissue, or body fluids. Principal Investigators must pay the cost of the vaccination.

8. Employee Exposures- first aid procedures:

- a. Eye exposure from splash or aerosols - rinse a minimum of 15 minutes in eye wash or flush area with water.*
- b. Skin exposure - wash area with soap and water for 15 minute.*
- c. Needle stick and/or sharps exposure - wash wound area with soap and water for 15 minute.*
- d. Contamination of clothing - remove the contaminated clothing and place in biohazard bag, shower with the emergency douse shower, and put on clean clothes.*
- e. Spill or release - Monday through Friday, 8a - 4:30p call EH&S at (858-534-3660); after hours call UCSD Police (858-534-4357)*

9. Employee Exposure - seek medical follow-up from the following medical providers: (TAKE THIS ECP WITH YOU)

24-hour walk-in service:

Thornton Hospital Emergency Room (858) 657-7600

UCSD Medical Center (Hillcrest) Emergency Room (619) 543-6400

If medical follow-up is required:

Monday - Friday, 8a - 4:30p:

UCSD Occupational & Environmental Medicine (619) 471-9210

10. Report All Injuries, Illnesses, and Exposures to EH&S:

Complete the information found on "What to Do if a Work-Related Injury or Illness Occurs" (http://blink.ucsd.edu/Blink/External/Topics/How_To/0,1260,4295,00.html)

11. Required Biosafety Training:

EH&S Bloodborne Pathogen Training is required annually for those working with human cells .

Laboratory specific training on hazards, exposure evaluations, and the required precautions for experimental procedures used with this agent - provided by Principal Investigator

12. Lab specific instructions:

Most tissue culture work (splitting, centrifugation, observation, housing)is performed in fume hood using proper attire. 70 % EtOH and 20% bleach is used to decontaminate work surfaces. All contaminated items used in the maintenance of the cell lines is properly disposed of in biohazardous waste containers.