



Institutional Biosafety Committee

Wayne State University Institutional Biosafety Committee

Reducing Biohazard Exposure Risks When Working With Human Cell Lines and Human Tissue in Rodents

The Wayne State University Institutional Biosafety Committee (IBC) has established the following procedures to be implemented when human cell lines or human tissues or human tumors are injected or implanted into experimental laboratory rodents. The intent is to protect lab animal staff and research staff from potential biological hazards when these projects are conducted. Human cell lines are a potential biological hazard, as defined by the CDC and OSHA. Established cell lines are considered less of a biological safety hazard than new (primary) cell lines that have not had pathological testing performed. Therefore new cell lines will be handled with an extra level of precaution when used in laboratory animals. Animal Biosafety Level 2 (ABSL-2) practices will be followed when rodents are injected/ implanted with human cell lines (new or established), human tissues or human tumors.

The following practices will apply to all Principal Investigators, research staff and Division of Laboratory Animal Resources (DLAR) staff when working with human cell lines and/ or human tissues or tumors in rodents in the animal facilities:

1. Established, well-characterized human cell lines: Autoclave cage and bedding at first cage change one week following introduction of human cells. After one week, cage and bedding are handled per standard ABSL-1 practices. All carcasses of animals exposed to human cells must be disposed of in a red biohazard carcass bag and placed in the yellow biohazard waste container in the DLAR.
2. Primary cells, new cell lines, and tissues: Require human pathogen screening (at a minimum HCV, HBV, HIV) by established methods – once information is available, IBC Chair and Biosafety Officer (BSO) will review; if acceptable then waste/disposal procedures can follow established cell line bedding handling procedures described above. The IBC suggests the use of h-IMPACT II screening (<https://www.idexxbioanalytics.com/h-impact-human-pathogen-testing>) or equivalent. Assays chosen must have lower limits of detection comparable to FDA approved assays.
3. Established cell lines, primary cells, new cell lines, or tissue with screening Information: If an animal dies unexpectedly or develops clinical signs of illness or tumor ulceration during the experiment, autoclave cage and bedding that housed these animals.
4. Primary cells, new cell lines, tissue without documentation, or cells/ tissue with identified/ known pathogens: Treat as potentially infectious for the duration of the project; autoclave cages and bedding for the duration of the project. PIs will be encouraged to provide pathogen screening information and will be made aware of the alternative (autoclaving cage and bedding for the duration – and the cost they will have to reimburse to DLAR for this service).

Please consult the WSU Biosafety Officer and DLAR veterinarians if you intend to use human cells/tissues in non-rodent animal models.