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

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 animals. 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 at an extra level of precaution when used in laboratory animals. Animal Biosafety level 2 (ABSL-2) practices will be followed when animals 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 the animal facilities:

1. Established, well-characterized human cell lines – autoclave first bedding change, typically after one week. After one week, dump bedding at Biobubble stations and collect in red bins for OEHS disposal.

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 from RADIL, Inc. [http://www.radil.missouri.edu/Health_Monitoring/h-IMPACT_Profile/index.html](http://www.radil.missouri.edu/Health_Monitoring/h-IMPACT_Profile/index.html) 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 throughout 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).