Institutional Animal Care and Use Committee (IACUC)

Policy on Pathogen Screening of Biologic Materials

Date of IACUC Review and Approval: April 5, 2019

I. **Purpose:** The Brown University IACUC has developed this policy to provide guidance on pathogen screening of biologic materials (e.g., tumors, tissue, serum, cell lines, etc.) that may be introduced into experimental animals. This screening is required in order to minimize the potential introduction of infectious diseases into rodent colonies, and to protect the health of humans from zoonotic agents.

II. **Background:** Research biologics of rodent or human origin are often introduced into research animals as part of an investigative procedure. Screening of these agents must be performed to confirm that biologics are free of infectious agents and are originating from the appropriate host species. Biological materials of rodent origin such as cell lines, tissues, and tumors have been documented as the cause for accidental introduction of pathogens, in particular viral infections, into animal colonies. In many cases, the infectious agents produce no clinical signs, but may produce physiologic changes that may alter or invalidate research results. This can have serious detrimental effects on experimental results, as well as jeopardizing the health of animals and people. Many rodent pathogens cause either subclinical disease that alter rodent immune function and confound cancer, infectious disease and immunologic research or, as in the case of Lymphocytic Choriomeningitis Virus, may be transmitted as a zoonotic disease to humans. A tumor inoculated into nude mice was the source of an LCMV outbreak with human illness reported in 1992 (Biggar, 1992). In rare cases, severe, uncontrollable clinical disease may require depopulation of entire colonies. In the spring of 1995, for example, all mice housed at the Naval Medical Research Institute had to be depopulated due to an outbreak of Ectromelia virus that was introduced into the colony via mouse serum (Dick, 1996). A second outbreak occurred in the U.S. in 1999 was specifically related to virus-contaminated mouse serum imported from China (Lipman, 1999).

III. **Policy:** Biological materials such as cell lines and their products that will be introduced into rodents housed in Brown University rodent colonies **must** be tested for and certified free of specified pathogens before they may be used in rodents. **Please note that many vendors do not fully test or certify their compounds.**
The following are examples of biologics that should be tested:

- Rodent derived cell lines OR cell lines of non-rodent origin that have been passaged through rodents
- Transplantable tumors
- Tissues
- Serum
- Embryonic stem cells (ES or ESC)
- Bodily fluids (e.g. sperm, ascites fluid)
- Basement membrane matrix (e.g., Matrigel)
- Hybridomas
- Antibody preparations that have been passaged through rodents or that have been exposed to rodents outside of Brown University.

Human derived cell lines will be handled at the BSL-2 biohazard level using Universal Precautions for blood-borne pathogens, and therefore testing is NOT required.

If the lab is using fresh tissue directly harvested from in-house animals, no additional testing is needed.

The agents linked in the following lab panels (IDEXX and Charles River Labs) under “Testing” represent those pathogens that pose the greatest risk to rodent colonies.

IV. **Testing**:

Testing can be completed either through IDEXX laboratories or Charles River Diagnostics laboratories. The following test panels are recommended by the Animal Care Veterinary Staff based on the potential to impact experimental results, the potential of transmission to other animals within the colony, and the prevalence of the agent. Please contact the Animal Care office directly to make arrangements for the testing of biologic materials.

http://www.idexxbioresearch.com/impact-pcr-0

Mouse Impact I panel

Rat Impact V panel


Mouse Essential Panel

Rat Essential Panel
V. **References:**


5. Cornell University Policy on Tumor and Cell Line Testing


7. Emory University Policy on Pathogen Screening of Biological Material

