Guiding Principle

Biological materials such as cell lines, tumors and other biologics of rodent origin that will be introduced into rodents used at North Dakota State University must be tested for and certified free of murine pathogens before they may be utilized.

Requirements

The Guide, Eighth Edition, page 113, “Appropriate procedures should be in place for disease surveillance and diagnosis….Procedures for disease prevention, diagnosis, and therapy should be those currently accepted in veterinary and laboratory animal practice.”

The Public Health Service (PHS) Policy-U.S. Government Principles for the Utilization and Care of Vertebrate Animals Used in Testing, Research, and Training, page 4, “Procedures involving animals should be designed and performed with due consideration of their relevance to human or animal health, the advancement of knowledge, or the good of society. The animals selected for a procedure should be of an appropriate species and quality and the minimum number required to obtain valid results.”

Background

Experimental treatment of rodents with externally-sourced, rodent origin, or rodent exposed transplantable tumors, cell lines or other biologics (i.e. hybridomas, germplasm, antibodies, blood products, or ascites fluid) represent a potential biosecurity breach for animal facilities. These biological materials may harbor murine pathogens that, when introduced into a rodent, can propagate and spread to other animals in the animal. In some cases, the pathogen can be zoonotic and infect humans. A consistent effort should be made to protect research and research animals from unintentional introduction of pathogens. Many rodent research models are at risk of confounding data when adventitious (typically subclinical) infections are acquired in study animals. Often providers of biologics do not provide adequate pathogen testing. These products have been implicated in rodent facility disease outbreaks.
Procedures

1. Biologics that REQUIRE testing prior to in vivo rodent use:
   a. Murine-derived cell lines, transplantable tumors, serum, tissues, body fluids, antibody preparations and hybridomas originating from rodent colonies outside of NDSU.
   b. Non-murine (including human) derived cell lines, transplantable tumors, serum, tissues, body fluids, antibody preparations and hybridomas that have been passed through rodents or have been exposed to rodents.

2. Possible exemptions from testing requirements; *Exemptions must be approved by the NDSU AV and IACUC Offices.*
   a. If the murine biological material is derived from donor animals located in the same facility and room as the recipient animals.
   b. Non-murine derived biological material that have NOT passed through rodents or exposed to murine products.
   c. Commercially obtained biological material for which the vendor can supply negative screening results for murine pathogens.

3. Pathogen Testing-Recommended Testing Laboratories
      i. IMPACT Rodent Pathogen Testing
         1. IMPACT Mouse Profiles
            a. IMPACT II
         2. IMPACT Rat Profiles
            a. IMPACT V
      i. Rodent Infectious Agent Panels
         1. Mouse Essential Panel
         2. Rat Essential Panel
   c. Other laboratories may be used but must be pre-approved by the IACUC and AV Offices.

4. Reporting-information on the proposed use of rodent cell lines/biologicals must be provided on the Institutional Animal Care and Use (IACUC) protocol form. Copies of the cell-line/biologics testing results must be submitted with the protocol form.

PI responsibilities
a. PIs are responsible for the cost of testing all externally-sourced, rodent origin or rodent exposed cell lines or biologics before using in live rodents at NDSU.
b. Biologicals intended to be used in live rodents must be disclosed and listed on an approved IACUC protocol form or amendment
c. Documentation of testing for pathogens can be submitted with the protocol or submitted directly to the IACUC Administrator or AV.
d. PIs should contact the testing laboratory for the preferred method of sample submission.

**Agents to be excluded**

Mice – materials to be injected into mice must test negative for all of the following agents:

- *Mycoplasma* spp.
- *Mycoplasma pulmonis*
- Sendai virus
- Mouse hepatitis virus
- Minute virus of mice
- Mouse parvovirus (MPV 1-5)
- Theiler’s murine encephalomyelitis virus
- Murine norovirus
- Reovirus 3
- Mouse rotavirus
- Ectromelia virus
- Lymphocytic choriomeningitis virus
- Polyoma virus
- Lactate dehydrogenase-elevating virus
- Mouse adenovirus (MAD1, MAD2)

Rats – materials to be injected into rats must test negative for all of the following agents:

- *Mycoplasma* spp.
- *Mycoplasma pulmonis*
- Pneumonia virus of mice
- Kilham’s rat virus
- Toolan’s H1 virus
- Rat parvovirus
- Lymphocytic choriomeningitis virus
- Rat cytomegalovirus
- Sendai virus
- Rat coronavirus
Rat minute virus
Sialodacryoadenitis virus
Seoul virus
Mouse adenovirus
Reovirus 3
Rat theilovirus
Date: __________________________

Protocol #: __________________________

Primary Investigator: __________________________ Email/Phone __________________________

Laboratory Contact: __________________________ Email/Phone __________________________

In which animal facility and room will this biological material be used? __________________________

The biological material is:

1) Murine-derived: Yes  No

If yes, is it derived from donor animals located in the same facility and room as the recipients (or approved room within the same facility with the same health status)?

Yes  No  Facility and Room No.:

2) Non-Murine (including human) derived cell lines

Yes  No
If yes, has it been passaged through rodents or exposed to murine products?

Yes  No

If yes, was it passaged through rodents or exposed to murine products in the same room as the recipients or approved room within the same facility with the same health status?

Facility and Room No.: __________________________

Samples submitted

Name Description / Origin Media

Example: Hep93C Human hepatocellular carcinoma line/PBS

Attach additional sheets if necessary

Additional comments: