Semi-Annual PACUC Inspections

As many of you are aware, PACUC is required by federal regulations to conduct semi-annual inspections of animal housing areas as well as laboratories where live animals are taken to have procedures conducted on them.

These unannounced inspections take place during the months of March/April/May and September/October/November. Beginning with the March 2011 inspections, PACUC will begin conducting more in-depth inspections of animal housing and laboratory areas. The need for these more-in-depth inspections arose from several issues identified during fall 2010’s AAALAC-I site visit where several non-compliance items were identified by the site visitors. Some issues identified were expired controlled substances, personnel not aware of the occupational health program, laboratory areas in disarray where animal procedures were performed, and personnel not aware of appropriate PPE needed for working with animals.

PACUC has implemented check sheets for animal housing and laboratory areas that members of the committee will be using as a guide for conducting semi-annual inspections. These check sheets are attached for your information so that you are aware of what the committee members will be looking for when conducting inspections.

Lisa Snider, CPIA
PACUC Administrator
**Prevention of Rodent Health Issues**

Since December of 2009, mouse colonies at Purdue University have experienced an outbreak of Mouse Hepatitis Virus in a single large mouse colony and an outbreak of Mouse Parvovirus potentially involving two mouse colonies. These disease issues cost the affected investigators both time and funding. Sentinel animal testing provided by the Laboratory Animal Program monitors both rat and mouse colonies for disease. Sentinel mice are tested quarterly and rats are tested semi-annually. In addition, the following policy and guideline were approved by the Purdue Animal Care and Use Committee to prevent inadvertent introduction and spread of disease into mouse and rat colonies at Purdue University.

The policy concerns importation of rats and mice from non-vendor sources and the guideline addresses testing of cell lines and tissues experimentally implanted into rodents. Be aware that two of the most common sources of mouse diseases are from importing mice from non-vendor sources and from the use of cell lines or tissues implanted experimentally that have been unknowingly infected with rodent pathogens.

Please review the policy **Importation of Rats and Mice to Purdue** and the guideline **Testing Cell Lines for Rodent Infectious Agents** below.

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**Importation of Rats and Mice to Purdue**

In order to prevent the inadvertent introduction of disease into rat and mouse colonies at Purdue University, certain minimal requirements are expected to be met prior to shipment of rats and mice from non-approved sources. Some animal facilities at Purdue University may have more stringent requirements.

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**Definitions**

Approved sources: Commercial vendors such as Harlan, Jackson Laboratory and Charles River Laboratories which house closed colonies of rats and mice and maintain intensive health monitoring programs would be considered an approved source.

Non-approved sources – Includes any institution outside of Purdue University such as a university, college, research company or foundation that may donate, transfer, or sell rats or mice to a PACUC-approved research project at Purdue University.

**Procedure for Importation of Rats and Mice to Purdue:**

- Sentinel health reports for the past 12 months from the institution shipping the animals must be faxed to the Laboratory Animal Program (LAP) office at 765-496-2415 or emailed to Peggy O’Neil at peggyoneil@purdue.edu
- The sentinel health report must include, as a minimum, test results for ectoparasites (e.g., fur mites) and endoparasites (e.g., pinworms) in addition to a serologic panel of results including pathogens tested for in Purdue’s sentinel program.
- The sentinel health information will be reviewed by a LAP veterinarian and whether or not health status is acceptable will be determined.
- If the health status is acceptable for shipment, an Animal Requisition Form, must be completed and returned to Lori Bugher at lbugher@purdue.edu
- Upon acceptance and approval of the Animal Requisition Form, permission to ship will then be granted.
- All shipping arrangements and housing arrangements for imported animals are the responsibility of the Principle Investigator and the Facility Manager where the animals will be housed.

Continued on next page....
Remember to always contact the appropriate facility manager to assure all requirements for entry are met and that appropriate housing will be available when animals arrive.

**Testing Cell Lines For Rodent Infectious Agents**

Research rodents are readily infected by a number of viruses and bacteria which may produce disease and/or significantly alter experimental data. To successfully prevent spread of such agents, it is important that the microbiologic status of rodents housed within research facilities be periodically evaluated.

Many infectious agents of rodents can be carried in cell lines and tissues which, when implanted into naive host animals, may serve as a source of infection. To minimize the likelihood of inadvertent infection of specific pathogen-free rodents with these agents, tumors, tissues, cell lines, and ascites fluid should be evaluated for contamination prior to experimental use in vivo.

Two methods are currently available for testing of biological substances to be implanted in rodents, namely the Mouse Antibody Production (MAP) test or through use of PCR-based testing such as the Infectious Microbe PCR Amplification Test (IMPACT).

The mouse antibody production (MAP) test is a procedure used to test for the presence of murine viruses and bacteria in transplantable samples. In this procedure, disease-free mice are inoculated with a sample of the material being tested and housed in isolation for 4-6 weeks. At the end of this time, serum is collected from the mice and assayed for the presence of specific antibodies to a panel of viruses and bacteria of murine origin. The test may be conducted by the investigator or by a commercial firm such as Charles River Laboratories, Inc. and can be adapted for materials to be implanted into rats, guinea pigs, and hamsters as well as mice.

The University of Missouri Research Animal Diagnostic Laboratory (RADIL) currently offers a faster and less expensive alternative to MAP testing through use of their IMPACT PCR-based testing. For DNA and RNA viruses, they have demonstrated comparable or improved sensitivity of virus detection compared to the MAP test and offer a turn-around time of approximately 10 business days.

MAP/IMPACT testing of materials to be implanted into mice often includes assays for the following viruses and bacteria:

<table>
<thead>
<tr>
<th>Virus/Agent</th>
<th>Type</th>
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<tbody>
<tr>
<td>Mouse parovirus</td>
<td>Pneumonia virus of mice</td>
</tr>
<tr>
<td>Mouse hepatitis virus</td>
<td>Minute virus of mice</td>
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<tr>
<td>Reovirus type 3</td>
<td>Ectromelia virus</td>
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<tr>
<td>Lymphocytic choriomeningitis virus</td>
<td>K virus</td>
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<tr>
<td>Mouse cytomegalovirus</td>
<td>Hantaan virus</td>
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<tr>
<td>Mycoplasma pulmonis</td>
<td>Mouse adenovirus</td>
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<tr>
<td>Lactate dehydrogenase elevating virus</td>
<td>Polyoma virus</td>
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<tr>
<td>Mouse thymic virus</td>
<td>Rotavirus</td>
</tr>
<tr>
<td>Theiler's mouse encephalomyelitis virus (GDVII)</td>
<td>Sendai virus</td>
</tr>
<tr>
<td>Murine Norovirus</td>
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</tbody>
</table>

The Laboratory Animal Program can offer investigators advice in testing of samples. Additional panels are available for rat pathogens. MAP/IMPACT testing results of individual samples obtained should be forwarded to the Laboratory Animal Program for disease surveillance purposes.

Further information on the effects of some infectious agents on research can be found at: [http://www.lal.org.uk/pdffiles/gvsolas.pdf](http://www.lal.org.uk/pdffiles/gvsolas.pdf)

Peggy O’Neil, DVM
Guidelines for the Daily Husbandry of Sentinel Rodents

Descriptions of rodent health monitoring programs often recommend the use of sentinel animals for detecting pathogens in an animal population. Sentinel rodents are animals with a known microbiological status that are introduced into an experimental population for the purpose of colony surveillance for common pathogens (e.g. viruses, Mycoplasma, internal and external parasites, etc.).

Procedures for Housing and Maintenance

Handling of sentinel animals (e.g. cage changing, examination, etc.) should be performed after care has been provided for all other animals in the room. It is very important that colony animals are not handled after sentinel animals.

The cages housing sentinel animals should always be placed on the lowest shelf of the cage rack to maximize exposure to airborne movement of particles and fomites.

Sentinel animals should be housed on a composite sample of soiled bedding obtained from cages in the colony room. A sample (tablespoon) from each soiled cage should be placed in a cage with clean bedding for the sentinels to be transferred to at each cage changing. This will maximize their exposure to potentially harmful agents.

Sentinel animals should be maintained in same-sex groups or if fighting occurs individually housed.

Sentinels should be housed in the same room (and systematically rotated) for a minimum of six weeks prior to being used for screening.

It is recommended that sentinel animals be housed in open cages (without filter tops) to maximize exposure to any potential agents in the macroenvironment.

Carol Dowell, Training Coordinator

Implementation of Coeus IACUC Software

In January 2008, I travelled to Boston, Massachusetts, to attend the first meeting of a working group interested in developing software to run an IACUC (Institutional Animal Care and Use Committee). This working group consists of several individuals from institutions and/or companies throughout the United States. I am the chair of this working group and have been working on the development of this software for the past three years. This software will allow the PACUC office to place items on a monthly agenda, create minutes, send protocols full or designated review, and allow PACUC members to electronically receive and review submissions.

So what does implementation of this software mean for the principal investigator? All protocol, amendment, annual reviews, and triennial submissions will be done electronically using this system. There will be no more paper copies. All submissions, reviews, and communications between the PACUC office and the PI will be done electronically.

As of this writing, I do not have an implementation date that I can share with you. I am currently doing extensive testing of the software to work out any “bugs” and then it will be implemented in a small pilot test in select departments on campus for further testing. I will keep you updated as to the progress being made. As an implementation date is finalized, that date will be shared with you.

Lisa Snider
PACUC Administrator

<table>
<thead>
<tr>
<th>Meeting Date</th>
<th>Deadline Date for Protocol Submission</th>
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<tbody>
<tr>
<td>April 20</td>
<td>March 30 @ 5:00 p</td>
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<tr>
<td>May 18</td>
<td>April 27 @ 5:00 p</td>
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