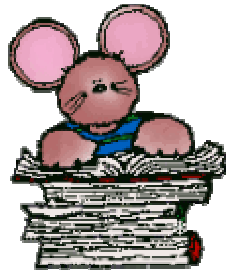


Animal Source

Biosecurity has become the catchword of the times.

Laboratory animal biosecurity includes all measures taken to prevent, contain and eradicate unwanted infectious agents. A major component of the laboratory animal biosecurity plan at PSU is the ARP rodent health surveillance program (for more information see page 3 of this issue).

However, no plan will be effective without the help of all parties involved. This issue of *Animal Source* contains important information for animal users on the prevention and control of unwanted infectious agents in laboratory animals.



Biosecurity: What you can do to help keep your rodents healthy

Laboratory animal rodents are susceptible to a variety of infectious agents that may be transmitted via human carriers. Humans may carry the organisms as part of their microbiological flora or they may simply act as mechanical vectors transporting the organism from another animal to rodents in the lab. Following a few simple precautions can help prevent the inadvertent contamination of your laboratory rodents with an unwanted infectious agent.

1. Limit exposure to pet rodents and reptiles
 - a. Wild and pet rodents are frequently infected with many of the bacteria, parasites and viruses that we are attempting to keep out of the animal facilities. Students and employees

Continued on page 2

PSU Animal Resource Program

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*Visit the ARP
website at
www.research.psu.edu/arp
for answers to your
animal use questions*

*AAALAC site visit to
PSU is July 29
through July 31,
2003*

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Biosecurity, continued from page 1

- may inadvertently carry these infective agents into the laboratory and transmit them to research rodents.
- b. Reptiles such as turtles and snakes normally harbor bacteria such as *Salmonella* and *Mycoplasma*. Some of these bacteria are transmissible to rodents and may cause serious disease.
 - c. Students and employees who work with laboratory animals should be encouraged not to own pet rodents or reptiles. If this is not possible, they should arrange for other family members to care for their animals.
2. Visitors to the animal facility should not have had recent contact (within 24 hours) with either pet or laboratory rodents.
 3. Do not bring outside sources of food, bedding or equipment into the animal facility. It may be tempting to supply your rodents with food or toys obtained from your home or local stores, however, these items may be contaminated with infectious agents. For example, seeds sold for wild bird feeding may contain wild rodent feces that can serve as a source of infectious material.
 4. Limit access to breeding colonies.
 - a. Only designated personnel should enter breeding colony rooms.
 - b. The flow of people and supplies should always be from clean (uninfected) to dirty (infected or unknown status) rooms. Go to <http://www.research.psu.edu/arp/facilities.shtml> for more information on personnel movement and animal room status.
 5. Correctly use protective clothing and equipment
 - a. Wear clean shoe covers when entering an animal room. Do not wear shoe covers in the hallways or from room to room.
 - b. Wear a clean lab coat or disposable gown when handling animals. Do not wear the same coat or gown in more than one animal room.
 - c. Wear disposable gloves when handling animals. Change gloves between rooms and in some circumstances, between animals.

For more information on how you can help protect your lab animals please contact an ARP veterinarian.

Attending Vet for Ag/Wildlife Appointed



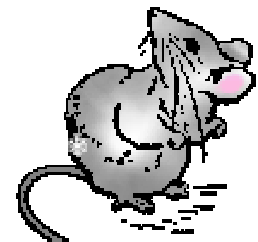
ARP is pleased to announce that Jacob Werner has accepted the position of PSU Attending Veterinarian for Agricultural Animals and Wildlife. The Attending Veterinarian provides guidance and oversight for the care and use of agricultural animals and wildlife used to support teaching, research, and extension programs at PSU.

Dr. Werner obtained his veterinary medical degree from the University of Pennsylvania and completed an internship in large animal veterinary medicine at the Virginia-Maryland Regional College of Veterinary Medicine. He was employed in private mixed animal practice in central Pennsylvania prior to accepting his position at PSU.

Rodent Health Surveillance

The PSU Animal Resource Program conducts an ongoing health surveillance and disease prevention program for all of its University Park laboratory animal facilities. This program includes restrictions on the introduction of animals from off campus sources and periodic testing of animals for selected infectious agents. Investigators can help insure the success of our health monitoring efforts by familiarizing themselves with the basics of how the program works. For more information on the rodent health surveillance program go to <http://www.research.psu.edu/arp/diseases.shtml>.

Parvoviruses are occasionally found to infect mice in some of the ARP animal facilities. It is important that investigators and their students and employees be aware of the hazards of infection with mouse parvoviruses. With that in mind we are reprinting the following article that appeared in the Winter 2003 issue of Animal Source.



Parvoviruses of Mice

Parvoviruses are single-stranded DNA viruses that are commonly found in laboratory mouse colonies and are extremely resistant to environmental degradation. Mice Minute Virus (old name: Minute Virus of Mice) and Mouse Parvovirus (MPV) are antigenically distinct parvoviruses whose natural host is the mouse (*Mus musculus*). Both viruses are shed in the feces and urine and are transmitted by either direct contact or contact with virus contaminated fomites. In general, parvoviruses are species specific and are not transmitted to other than the natural host species.

Mice Minute Virus (MMV) infection in immunocompetent mice results in a short-lived infection with recovery. Experimental infection with MMV in immunodeficient mice results in a leukopenia due to suppression of hemopoietic progenitors (1). MPV infection in immunocompetent mice leads to a persistent infection of lymphoid tissues, especially the mesenteric lymph nodes. These natural infections with MPV are subclinical but are reported to cause immunomodulation (2).

Diagnosis of infection with either virus can be accomplished by serology or PCR based testing (3). PCR testing is also used to screen cultured cells or other biological materials from mice for the presence of either virus. There is no treatment for infection with these viruses. Prevention and control are accomplished through decontamination procedures using sterilization and parvoviracidal disinfectants. Infection in a colony may be eliminated by rederivation using embryo transfer or caesarian section to repopulate the colony with uninfected mice.

References:

1. Segovia JC, Gallego JM, Bueren JA, Almendral JM (1999) Severe leukopenia and dysregulated erythropoiesis in SCID mice persistently infected with the parvovirus minute virus of mice. *J Virol* 73(3) 1774-84.
2. McKisic MD, et al (1998) Mouse parvovirus infection potentiates allogeneic skin graft rejection and induces syngeneic graft rejection. *Transplantation* 65(11), 1436-46.
3. Livingston RS, et al (2002) Serodiagnosis of mice minute virus and mouse parvovirus infections in mice by enzyme-linked immunosorbent assay with baculovirus-expressed recombinant VP2 proteins. *Clin Diagn Lab Immunol* 9(5), 1025-31.

Animal Resource Program

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AAALAC consultants
will be visiting
the University Park
animal facilities
July 29 – July 31, 2003.

The Animal Resource Program (ARP) is committed to providing PSU faculty, staff and students with high quality, cost-effective research animal resources. In addition to suitable housing facilities and animal husbandry services for animals used in biomedical research, ARP provides veterinary and diagnostic services, personnel training and expertise in laboratory animal technology and medicine. ARP veterinarians are also available to participate in collaborative research projects with PSU investigators. Areas of interest include animal behavior and welfare, infectious disease, and pathology.

Rodent Surgery Workshop to be held August 8

ARP will be offering a 3 hour workshop from 8:30 – 11:30 am on August 8, 2003 to provide research personnel with the opportunity to learn and apply basic surgical concepts and techniques used in rodent surgery. This will include practice in handling surgical instruments, surgical knot tying and suture patterns initially using inanimate models. Participants will then perform two surgical procedures on an anesthetized mouse using aseptic technique.

To make this session as informative and productive as possible, the student to instructor ratio will be low (2-3:1) and participants will be expected to view instructional material on compact disc (provided by ARP) prior to attending the workshop. Prior surgical experience is not required and instructors will demonstrate procedures before participants attempt to complete them.

Attendance is limited and registration at least one week before the date of the workshop is required to allow ample time for participants to view the prerequisite CD. Please call the ARP office (865-1495) for more information and to register to attend.

