During the most recent USDA inspection of the Parnassus Campus animal areas, the University was cited for housekeeping violations relating to dirty cages being left in hallways and public areas in the Animal Towers and MR I & II buildings. This practice increases the chance of cross-contamination, and the potential spread of diseases among rodent populations. Please:

1. Do not place any cages or equipment in the hallways.
2. Do not discard gloves, paper towels, face masks, etc. in the cages.
3. Discard all other items such as paper towels, disposable gloves, and protective clothing in trash containers, or in red Biohazard containers, as appropriate.

In an effort to make it easier for Investigators to dispose of soiled cages and related equipment, LARC has placed red sani-trucks with covers on several floors of the Animal Tower as well as the fifth floor of the MR II Building.

4. Use these trucks for cages and equipment only (e.g. water bottles, cage tops, wire lids, etc.). Close the covers after you have placed the items in the bin.
5. If you are in an area where there are no red trucks in the vicinity, take the cages to the nearest truck, or the cage wash area located on the second floor.

NEW LARC SIGNAGE SYSTEM

In an ongoing effort to facilitate research activities at UCSF, and increase awareness of campus personnel and visitors, LARC has adopted a new color-coded signage system. In order to utilize a system familiar to all, we have adopted the color scheme in place on our streets and highways:

- Neon Green: Instructional / Informational
- Neon Yellow: Caution
- Neon Red: Warning

These signs are intended to provide important information relevant to animal or human health. Please take a moment and review the signs in areas where you work with animals.

We have also laminated and posted departmental Standard Operating Procedures (SOPs) for your reference. These documents are printed on blue paper and can be found in all applicable areas.
The Report of the AVMA Panel on Euthanasia does not provide specific recommendations for the euthanasia of prenatal or neonatal animals. The following guidelines are suggested to assist individual Animal Care and Use Committees at the NIH in reviewing proposals that involve the use of rodent fetuses or neonates.

Fetuses:

a) Fetuses up to 14 days in gestation: Neural development at this stage is minimal and pain perception is considered unlikely. Euthanasia of the mother or removal of the fetus should ensure rapid death of the fetus due to loss of blood supply and non-viability of fetuses at this stage of development.

b) Fetuses 15 days in gestation to birth: The literature on the development of pain pathways suggests the possibility of pain perception at this time. Whereas fetuses at this age are not sensitive to inhalant anesthetics, euthanasia may be induced by the skillful injection of chemical anesthetics. Decapitations with surgical scissors, cervical dislocation, or rapid freezing (immersion in liquid nitrogen) are acceptable physical methods of euthanasia. When chemical fixation of the whole fetus is required, fetuses should be anesthetized prior to immersion in or perfusion with fixative solutions.

Anesthesia may be induced by hypothermia (1) of the fetus, by injection of the fetus with a chemical anesthetic, or by deep anesthesia of the mother with a chemical agent, that crosses the placenta, e.g., pentobarbital. The LARC veterinarian should be consulted for considerations of fetal sensitivity to specific anesthetic agents. When fetuses are not required for study, the method chosen for euthanasia of a pregnant mother must ensure rapid death of the fetus.

Neonates:

a) Up to 14 days of age: Acceptable methods for the euthanasia of neonatal mice and rats include: injection of chemical anesthetics (e.g., pentobarbital), decapitation, or cervical dislocation. Additionally, these animals are sensitive to inhalant anesthetics; e.g., methoxyflurane (used with appropriate safety considerations). Immersion in liquid nitrogen may be used only for newborns; pups older than one day should be anesthetized prior to freezing with liquid nitrogen. Similarly, anesthesia should precede immersion or perfusion with chemical fixatives. Anesthesia may be induced by inhalant or injectable anesthetics; the LARC veterinarian should be consulted for appropriate agents and dosages. Alternatively, when adequately justified, hypothermia (1) may be used to induce anesthesia in pups younger than six days.

b) Older than 14 days: Follow guidelines for adults.

In all cases, the person performing the euthanasia must be fully trained in the appropriate procedures.


RINGWORM

Dermatophytosis, also known as ringworm, is a common zoonotic (transmissible from animals to humans) fungal infection of the skin. It can also be transmitted from humans to animals, animal to animal, and human to human. Several species of dermatophytes can cause infection in laboratory animals such as cats, dogs, non-human primates, rabbits and rodents. Clinical signs in animals are evidenced by hairloss and/or crusty skin lesions primarily found around the head and neck. Any animal displaying these symptoms should be reported to a member of the LARC veterinary staff at 476-2204.

Humans contract ringworm by direct contact with infected animals or indirect contact with contaminated equipment or materials. Animals can be sub-clinical carriers of dermatophytes and can be every bit as contagious as animals presenting with clinical signs. Infection in humans is usually evidenced by circumscribed, rough lesions that are red at the periphery and occur on the arms and hands or any area of the body that has come into direct contact with the organism. Lesions are usually self-limiting, or in persistent cases, are responsive to prescribed topical anti-fungal medication. Although ringworm is relatively benign, systemic infections have been reported in immunocompromised people. Staff with suspect skin problems should contact Employee Health and Occupational Services at 885-7580.

Dermatophyte spores can exist in the environment on inanimate objects in animal rooms and labs for months or years even when no animals are present. Because ringworm is insidious, it is recommended that personnel entering animal rooms routinely wear gloves when handling animals, followed by washing hands before leaving an animal area. Proper sanitation of labs and related experimental equipment is important for reducing exposure to ringworm and any other zoonotic agent. A 2% dilution of bleach or full strength Chlorhexidine solution (Nolvasan, Hibiclens) is recommended for general sanitation. A veterinarian may prescribe a more concentrated bleach solution for limited applications when ringworm fungi have been diagnosed.
The Charles River Professional Staff participates in a variety of lab animal issues, both within Charles River and in conjunction with the lab animal community. Over the past two to three years, we have gathered a significant amount of information on "Scaly Skin" disease in nude mice.

Mice visibly affected by Hyperkeratosis have often been considered unsuitable for research use because of the sometimes striking scaly appearance and reported weight loss. Studies conducted by researchers from Charles River Laboratories, Burroughs Wellcome Co., and the University of Washington in Laboratory Animal Science, April 1995, confirmed Hyperkeratosis-associated coryneform (HAC) as a cause of bacterial Hyperkeratosis in nude mice and provided some insight into the biology of the organism.

Following are highlights of the results of those studies. Copies of the entire article can be obtained by contacting Charles River Laboratories, 251 Ballardvale Street, Wilmington, MA 01887, Attention: Technical Assistance, 1-800-338-9680.

Both immunocompetent and immuno-deficient mice, whether hairless or haired, can be infected with the organism. Only hairless mice, both athymic and euthymic, developed Hyperkeratosis in this study, suggesting that the immune function may not be the only factor in the genesis of bacterial Hyperkeratosis; hairlessness may be a contributing factor as well.

Infection was transmitted by direct body contact of infected mice with uninfected mice and through latex gloves, suggesting that fomites and asymptomatic carriers, including immunocompetent hirsute mice, may serve as a source of HAC infection in the laboratory animal environment.

Other stocks of mice were susceptible to infection with the HAC. CD-1® mice, including those heterozygous for the nude gene, and SKH-1 mice became infected when housed with infected nude mice. In addition, two of the four immunocompetent SKH-1 hairless mice in this study developed Hyperkeratosis detectable at necropsy. All four of the SKH-1 mice also had histopathologic changes similar to those observed in the natural outbreak and in the inoculation experiments done in this study.

No difference was noted between the males and females with regard to gross or microscopic lesion incidence or severity.

Skin culture was a more sensitive method than buccal culture for detecting infection.

The HAC organism could be isolated from all cases of the disease and the organism could be recovered in pure culture from the experimentally infected animals.

Considerable caution is indicated in ascribing too much diagnostic importance to the gross appearance of the skin. Clinical signs are NOT specific as Hyperkeratotic appearance of nude mice may not always be due to an infectious cause.

The incidence of infection is much greater than the incidence of the disease.

The HAC is distinguished from most of the pathogenic corynebacteria by its lack of fermentation of sugars with the CORYNE strip.

HAC may represent a new series of Corynebacterium, but the possibility that the bacterium is a variant of C. Bovis, which it closely resembles, cannot be completed excluded.

Histologic examination was more sensitive than gross examination for detecting lesions and correlated well with culture results.

Generally, either all or none of the animals within an individual cage were infected.

Infection with HAC appeared to be persistent and highly transmissible. Infection was readily transmitted by cohabitation, by direct contact, and by contaminated gloves. Transmission also occurred when animals were maintained in previously contaminated rooms, even when clean, non-sterilized micro-isolator units were used.

Mice maintained in a semi-rigid isolator, with sterilized water and irradiated feed and bedding, remained free of the infection throughout the 3-week experiment. Isolators, therefore may provide the most desirable means of maintaining animals in an infection-free status in a contaminated facility.

Infected mice were treated with antibiotics in the drinking water, although infection apparently was not cleared because signs reappeared after treatment ceased.

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NEW CAR / LARC LOGBOOKS

As many of you are aware, LARC & CAR have completed the new Logbook for use by all Principal Investigators engaged in animal research at UCSF. The Logbook is intended to centralize information and documentation related to an Investigator’s animal studies; it includes, for example, sections for CAR-approved protocols and related correspondence, approved modifications and/or renewals, relevant CAR policies, the LARC newsletter, and more.

We anticipate and hope that you will find these logbooks useful. If you have not yet received your copy, or would like additional copies, please contact David Smith at 502-1751 and we will be happy to provide a logbook(s) to you.

Visit Our Web Site At http://www.larc.ucsf.edu
CAR CORNER

CHAIR UPDATE

As most researchers know by now, Mary Dallman, Ph.D., Professor of Physiology, has been appointed Co-Chair of the CAR. The position of Co-Chair was created to help with the enormous volume of work that the CAR has had to undertake these last few months and is expected to continue for some time. Dr. Dallman, who has previously served as CAR Chair and a long-term member, will be sharing responsibilities with the current Co-Chair, John Taylor, Ph.D., Professor of Physiology at Gladstone Institutes. Dr. Taylor has been serving as Chair since October 1998. Linda Noble, Ph.D., Associate Professor of Neurological Surgery, will continue in her role as Vice Chair.

RECOVERY SURGERY ON RODENTS IN APPROVED LABS

Space in the lab in which recovery surgery occurs on rats and mice should be clearly marked off by a taped line demarcating the surgical area, which is to be kept clean. Within that area, there may be no outdated drugs or materials. Any outdated materials that may be used in the same room for post-mortem work must be labeled clearly: “not for use in living animals”.

UPDATED CAR WEBSITE

Please take a look at “What’s New!” on the updated CAR website (www.ucsf.edu/ora/car). The information is current and includes new policies, Y2K deadlines for application submissions and an easy-to-use form for adding new personnel. Two new and timely policies include the current requirements for education and training in the use of animals in research at UCSF as well as policies and procedures for reporting animal care and use concerns. The CAR applications (both initial and renewal) as well as the information and instructions for completing the forms have also been revised to be more user friendly. Finally, the section following “What’s New!” includes several updated guidelines that researchers may find helpful.