NUS Institutional Animal Care & Use Committee

IACUC Newsletter

Issue 3, Nov 2008

IACUC Forms

Are you breeding animals for research?

Researchers who intend to breed their own animals for scientific purposes are required to submit an "**Application to maintain a breeding colony**" form in addition to the existing "**Application to use animals for research**" form. Principal Investigators (PIs) are advised to consult Laboratory Animal Centre (LAC) prior to the submission.

Part 2 of the original Procedure C form, "Protocol specific breeding" has been replaced by a separate and dedicated breeding protocol form.

Why the need for a separate form? This is to:

a) enable Centre for Animal Resources (CARE) and other departments which have non-protocol specific breeding programmes to submit a breeding protocol as all animal care and use programmes have to be IACUC approved;
b) facilitate identification of protocols involving breeding;
c) provide information of the species / strains being bred. PIs who are interested in animals of a certain genetic structure can be expeditiously updated on the availability of the specific animals in NUS;
d) facilitate the process of supplying animals bred by one PI to another, without the need to submit an amendment each time the PI agrees to supply the animals;
e) have a record of a more detailed description of the breeding programme which was lacking in the original Procedure C form.

School / Undergraduate Student Form

Researchers may, from time to time, supervise undergraduates and school students in research. They have to submit an "Application to use animals for undergraduate/ school student project" form for IACUC review.

This applies also to the inclusion of undergraduates or school students to an approved research protocol. This is to enable IACUC to conduct a separate full review of the actual work the student will be doing in the PI's existing IACUC approved research protocol.

Submitting an amendment form to include the student(s) would not serve this purpose. A special oversight of the ethical and safety issues of the students' work is necessary because these students are novices in research and may not fully understand the ethical and safety issues involved in animal work. While this oversight may be provided by the PI when the student works within an IACUC-approved protocol, IACUC has come across non-compliance in such students.

IACUC/ Protocol Matters

Project Co-ordinator While You're Away – Contact Details in IACUC Forms

IACUC has on several occasions, come across PIs who are away for a long period (e.g. on sabbatical or prolonged no-pay leave). This raises the concern of project oversight in the PI's absence.

IACUC would like to remind researchers that if the PI is expected to be out of the country or unable to oversee the project directly, a project coordinator or Acting PI should be nominated. The project coordinator or Acting PI will be responsible for the animal care and use activities of the laboratory during the PI's absence. The appointment of such a person should be endorsed by the Head of Department and submitted to the IACUC.

If the PI is away for a short period of time (egg. vacation or conference leave), a contact person who will be responsible for the animal care and use protocol should be also available. PI is to provide such contact details under **Part A, 1.6 (Contact person during the absence of the Principal Investigator)** in the **main form** of the Application to Use Animals for Research.

Documenting and Storing Sensitive Materials

Visual and /or audio documentation (photographs, videotapes etc.) of live animals illustrating altered behavior resulting from experimental manipulations and/or live or dead animals undergoing invasive experimental procedures should be made only when necessary for data analysis or presentation. Prior IACUC approval must be obtained.

To avoid the risk of theft and misuse of these materials, they must be produced with absolute attention to professional conduct and concern for animal welfare. The materials must be stored securely, in a locked, unmarked cabinet outside the laboratory. Cabinets constructed of materials that allow visualization (e.g. glass) are considered inappropriate for this purpose.

Please refer to IACUC circular dated 9 October 2008

Back to Contents

Movement of Animals In or Out of NUS

Animal movement, in or out of NUS, must be channeled through LAC, irrespective of whether the animals are imported from overseas, supplied by local vendors, or provided by collaborators from local institutions.

It is the responsibility of the IACUC to inspect all animal housing facilities in NUS; from acquisition to euthanasia. Animal movements within and without NUS must be done with the sending as well as the receiving institution's permission. These animals could be radioactive, biohazardous or contaminated with adventitious agents and hence require attention.

Administratively, tracking and accounting of animal usage are required under the licensing by Agri-Food & Veterinary Authority of Singapore (AVA) for NUS to house and use animals for scientific purposes. The IACUC and LAC are jointly responsible for providing accurate information and the requisite reports on NUS animal care and use activities for the AVA license renewal.

Access to Animal Facilities at NUS

The IACUC is concerned with recent reports that unauthorized personnel have been found entering some laboratories and animal facilities at NUS. PIs and their team members are reminded that only personnel who are in NUS IACUC-approved protocols, and who have attended and undergone training on "Barriers and Procedures" are allowed access to animal facilities at NUS.

These personnel will have their NUS ID cards recognized by the card readers at the facility. These cards are not transferrable, nor should they be used to give access to unauthorized and untrained personnel. Should this happen, the card holder will be held responsible and accountable.

We seek your co-operation in keeping the animal facilities a safe and secure environment for carrying out research involving animals at NUS.

Renewal of NUS Public Health Service (PHS) Assurance

NUS' renewal was approved by the Office of Laboratory Animal Welfare (OLAW) of the United States National Institutes of Health (NIH). The assurance covers faculties and departments involved in the use of animals for scientific purposes.

This signifies the University's commitment to comply with all applicable provisions of the Animal and Birds Act and the NACLAR Guidelines, which govern the care and use of laboratory animals in Singapore.

In order to qualify for support from the PHS for activities involving animals, institutions must provide assurance of compliance with the PHS policies.

The assurance is approved for a period of five years and covers all PHS supported activities involving live vertebrate animals.

Back to Contents

Animal Care & Use Matters

Standard Practice of Weaning

The standard practice of weaning mice is at 21 days of age; IACUC may allow exceptions to this guideline only after specific review.

Extended weaning periods and housing of multiple litters in the same cage can compromise the health and welfare of animals resulting in overcrowded cages and decreased survival of younger animals due to injury or inability to suckle. Therefore, for protocols with IACUC approval for extended weaning periods, investigators are required to ensure that:

1. The male is removed prior to the birth of the first litter OR
2. The first litter is removed before birth of the second litter occurs

Please refer to IACUC Policies & Guidelines

Environmental Enrichment

The NACLAR guidelines require that an animal's living environment allows for expression of non-injurious species-typical activities. It is mandatory for all singly-housed social animals in NUS to be provided with at least a minimum environmental enrichment.

Animals housed at NUS will receive environmental enrichment (e.g., group housing, nesting material). Exceptions to providing environmental enrichment must be justified in the animal use protocol and approved by IACUC. It is the investigator's responsibility to ensure these exceptions **are indicated on the cage cards at the time cage cards are requested.**

Testing of Animal and Human Cell Lines to be Administered to Animals

All animal and human cell lines must be tested for pathogens prior to administration to animals.

This requirement identifies potential occupational health and safety hazards for personnel in contact with the cells directly or with the animals indirectly, prevents the spread of diseases in the animal holding facilities, and validates the scientific research data derived from healthy animals.

Researchers who intend to use cell lines, which are commercially available or maintained in their laboratories, on animals, must plan to ensure the cell lines are tested and certified free of adventitious animal or human pathogens. Failure to do so may inadvertently result in the delay of IACUC approval.

Please refer to IACUC circular dated 9 October 2008

Back to Contents

When Animals Die ….. A Concern Always

Death as an endpoint does not refer to death of animals euthanized at the specific time points. It refers to studies, where after the experimental procedures, the animals are observed until they die because death is used as a measured data point.

Examples include the use of chemicals and drugs to determine acute toxicity. For such studies, it is scientifically acceptable for animals that are moribund or exhibiting clinical signs of severe pain and distress to be euthanized rather than left to die. Moreover, euthanasia also provides 'fresh' tissues which are more appropriate for subsequent analysis.

IACUC strongly discourages the use of death as an endpoint. Researchers intending to do so are requested to read the IACUC policy and guidelines on using death as an endpoint.

Please refer to IACUC Policies & Guidelines
NACLAR Guideline: 3.2.9: Death as an end point

Authority of the Attending Veterinarian

The Institution-appointed Attending Veterinarian (AV) is vested with full authority to treat or humanely euthanize animals at his / her discretion, in accordance with NACLAR and IACUC guidelines.

It is the PI's responsibility to inform and alert animal facility managers to special requirements and considerations relating to his approved animal protocol and to ensure that their animals are appropriately identified and labeled.

The AV has unrestricted access to all areas where animals are used or housed (including vivarium, research laboratories, and research study areas) and to immediately suspend the research activities of the protocol for humane reasons or because of obvious protocol deviations. Such suspension will then be reported to IACUC for further action.

Please refer to IACUC Policies & Guidelines

Back to Contents

Use of Pharmaceutical Grade Compounds in Animal Research

Substances administered by any route to animals should be of pharmaceutical grade. The administration of non-pharmaceutical grade compounds to animals raises the concern of contamination resulting in unexplained results or death of some animals. Therefore, it is IACUC's policy that pharmaceutical grade compounds should be used unless it is not available.

Pharmaceutical grade compounds (e.g., USP, BP and EP) are sterile, with pathogens, harmful impurities and remnants of manufacturing process removed. They have been tested to the specifications of the specific pharmacopeia (e.g. US, British or European) and approved for human use.

I am using analytical grade. Is it not pure enough for animal use?

An analytical grade compound may have the same or even higher % purity than a pharmaceutical grade compound, but the impurities or infectious agents that are harmful to human body systems may not have been removed. Moreover, it may not be sterile.

The test for different grades of chemicals are different because they are designed to ensure that the known undesirable impurities have been removed to make the product suitable for specific types of use. Although various grades may have similar percentage of purity, one cannot assume that they can be used for other purposes. Substances controlled in pharmaceutical grade such as infectious agents, residual levels of toxic solvents, toxic elements (especially heavy metals), and bioactive impurities, may not be controlled.

Please refer to IACUC Policies & Guidelines

Occupational /Environmental Safety & Health

Amendment to an Approved Protocol – OSHE Risk Assessment is Required

Are you making changes to an approved protocol?

You're probably aware that you have to submit an amendment application form to IACUC and obtain its approval prior to making changes.

The amendment to your approved protocol may significantly affect the risk profile of your project, thereby requiring additional risk controls. Therefore, please remember to also submit an amendment of the risk assessment to the Office of Safety and Health Environment (OSHE).

The following are examples of changes that do NOT require additional risk controls and hence revision to the OSHE risk assessment is not necessary:

- Removal of personnel
- Addition of qualified personnel
- Increase in the **number** of the approved species
- Change in project duration
- Change in funding source

To facilitate approval of your amendment application, please submit a copy of the approved revision to risk assessment by OSHE.

Get Your Shots! Ensure You Are Protected Against TETANUS

There have been incidents where laboratory staff are injured while working on animals. The injury and infection could cause tetanus, a serious bacterial disease caused by a toxin that leads to stiffness of the victim's jaw muscles and other muscles. Tetanus can cause severe muscle spasms, make breathing difficult and may threaten your life.

IACUC requires all personnel working with animals to be vaccinated against tetanus **prior to attending the RCULA training** and working with animals for research, teaching or testing.

New Procedures for Animal Research Involving Hazardous Agents

Animal research involving hazardous agents exposes the researchers and animal husbandry staff to the hazards. It is the PI's responsibility to inform the husbandry staff of the risks and appropriate control measures in providing care to your research animals. A new procedure, as summarized below, has been jointly worked out by OSHE, LAC and IACUC to ensure the LAC Animal Facility Manager and the Fish Facility Manager are informed.

For projects involving hazardous agents, an Agent Summary Sheet (ASS) with the necessary information, and an LAC Warning Door Sign Card (LWDSC), which is to be displayed when experiments are in progress, will be generated for you after IACUC approval of the protocol. An email notification will be sent to the PI to collect the ASS and LWDSC.

The PI may designate a key member of the research team under the approved protocol to collect the ASS and LWDSC. A briefing would be conducted at the time of collection and any clarifications will be addressed then.

The PI will have to arrange with the LAC Facility Manager or the Fish Facility Manager to discuss the housing requirements and hand over the ASS and LWDSC; the animal housing location and space will be allocated by the Facility Manager. Further requirements by both parties may also be discussed.

Please NOTE that the animal work involving the use of hazardous agents must not begin if the ASS and LWDSC have not been handed over to the Facility Manager. This is to ensure all personnel, including LAC / Fish Facility animal caretakers, have access to the safety information.

Back to Contents

Newsworthy Articles

Hock Immunization: A humane alternative to mouse footpad injections
Source: J Immunol Methods, 2007 December 1: 328 (1-2): 204 -214

Footpad injection is a commonly used immunization method in mice. However, the disadvantages include inflammation and swelling at the injection site leading to unrelieved pain and distress. To overcome this problem, an alternative immunization method involving injection into the hock is proposed.

Read more

Fire bombings at homes of two California Researchers

Animal-rights extremists are suspected of firebombing the homes of two researchers at UC Santa Cruz. The police and federal authorities are investigating fire bombings at the homes of two researchers at the University of California, Santa Cruz.

Therefore, we should not give cause for public complaints of unjustifiable ill treatment of animals in research and maintain stringent ethical and safety standards of animal care and use. In any eventuality, IACUC has put in place a Crisis Management Team.

Read more

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Back to Contents