STANDARD OPERATING PROCEDURE

PRINCETON UNIVERSITY

Section: IACUC       SOP#: PRN – 3.4  (Ver. 8/2001)

TITLE: TUMOR BURDEN IN RESEARCH MICE

POLICY: The Princeton IACUC has established these guidelines for tumor burden in research mice. This will assure minimization of pain and discomfort to the animal. The IACUC recognizes that these guidelines will not be applicable in all cases, but assumes that all projects will be in compliance with these guidelines unless alternate procedures are clearly described and justified in the Protocol for Animal Care and Use.

Many tumors grow rapidly and can compromise the health and well-being of mice. If the tumor is subcutaneous or on the skin surface, it can become large enough to interfere with locomotion, grooming, and ability to access food and water. In addition, these tumors may ulcerate and result in secondary bacterial infection. If the tumor is growing in the abdominal or chest cavity, it can compromise respiration, food intake, and in some cases locomotion.

Each project involving tumor implantation and growth should define a set of conditions under which the affected mouse will be euthanatized. Use of survival time as an end-point is rarely justifiable and should be avoided. Mice should be euthanatized before their tumor burden becomes excessive and before the mouse is debilitated.

PROCEDURES:

In regard to naturally occurring or experimentally induced tumor(s) in mice, the following must be adhered to:

1. The investigator must carefully observe the animal every day.
2. If the animal is distressed as evidenced by lethargy, unable to get to food and/or water, listless, not eating and weak, the animal must be humanely euthanatized.
3. Any animal where the tumor load exceeds 10% of body weight (as judged against normal cohorts) must be humanely euthanatized.
4. Mice which have subcutaneous or skin tumors should be humanely euthanatized when the tumor reaches 15-20 millimeters in diameter.
5. Any animal with a tumor that has ulcerated through the skin must be humanely euthanatized.
6. Some tumors, depending on type and location, may interfere with the function of vital organs, such as lungs or digestive tract. If mice are seen to be in distress (e.g. labored breathing) due to an experimentally induced tumor, they should be euthanatized regardless of the size of the tumor or the weight of the animal.
7. Some tumors may interfere with locomotion making it difficult for the mouse to reach food and water. If the mouse is unable to eat or drink, it should be humanely euthanatized.
8. Additionally, protocols that include lethal end points or tumor burden greater than 10% body weight must have adequate scientific justification and be approved by the Princeton IACUC.

APPLICABLE LITERATURE:


APPLICABLE WEBSITES:

http://acis1.admin.ccny.cuny.edu/ResearchAdmin/AnimalCare.html

http://www.ra.utk.edu/ora/labaniml/TUMOR.html

SEARCH OF THE RELEVANT LITERATURE FOR ALTERNATIVE PROCEDURES WHICH MAY CAUSE PAIN OR DISTRESS, BASED ON THE 3'Rs OF ANIMAL RESEARCH

General Statement:

The literature search will be conducted annually for alternative procedures and attached to this SOP. Each IACUC protocol will contain the written Narrative (see USDA Policy #12), however the database literature search will be within this SOP.

Databases:

NLM Gateway: (3 Full Databases)
(http://gateway.nlm.nih.gov/gw/Cmd)
AltWeb: (http://www.altwebsearch.com/)

Keywords:

Cell culture OR computer model* OR invertebrate? OR nonanimal Alternative? AND (refinement OR replacement OR reduction)
Mice AND “Tumor Burden”.tw
Mice AND “Lethal End-Points”tw
Results Summary

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Short-term crocidolite inhalation studies in mice: validation of an inhalation chamber.

Effect of pentoxifylline on the course of systemic Candida albicans infection in mice.
Louie A, Baltch AL, Franke MA, Ritz WJ, Smith RP, Singh JK, Gordon MA.

Effects of a single dose of polychlorinated biphenyls to infant mice on N-nitrosodimethylamine-initiated lung and liver tumors.
Anderson LM, Ward JM, Fox SD, Isaaq HJ, Riggs CW.

In vitro drug testing using hemopoietic cells: goals and limitations.
Taetle R, Koziol JA.
## Results Summary

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Your search for "Mice AND "Tumor burden"" matched 11 of 522774 documents.

1 2 [Next]
Humane Endpoints

Last updated: 7/12/2001

Pain Management and Humane Endpoints: Workshop sponsored by CAAT, NIH, and ILAR
http://altweb.jhsph.edu/meetings/pain/intro.htm

Pain Management and Humane Endpoints: PHS Policy Perspective
Nelson L. Garnett, NIH, OPRR
http://altweb.jhsph.edu/meetings/pain/garnett.htm

Canadian Council on Animal Care Guidelines on: Choosing an Appropriate Endpoint in Experiments Using Animals in Research Teaching and Testing
http://www.ccac.ca/english/gdlines/endpts/appopen.htm

Endpoints in Infectious Disease and Cancer Models
Ernest Olfert, University of Saskatchewan, Canada
http://altweb.jhsph.edu/meetings/pain/olfert.htm

Monitoring of Genetic Engineering Studies
Melvin B. Dennis, Jr., University of Washington
http://altweb.jhsph.edu/meetings/pain/dennis.htm

Humane Endpoints for Laboratory Animals Used in Toxicology Testing
William S. Stokes, NIEHS/ICCVAM
http://altweb.jhsph.edu/meetings/pain/stokes.htm

Humane Endpoints in the OECD--An Update
Alan M. Goldberg JHU, CAAT
http://altweb.jhsph.edu/meetings/pain/goldberg.htm

Humane Endpoints in Animal Experiments for Biomedical Research: Proceedings of the 1998 International Conference
http://www.lal.org.uk/endpoint.htm

Humane Endpoints for Animals Used in Biomedical Research and Testing, ILAR Journal 41(2), 2000
http://www4.nas.edu/cls/jhome.nsf/44bf87db309563a0852566f2006d63bb/ed4230a2acb50d1685256896004a2ee7?OpenDocument

OECD Guidance Document on the Recognition, Assessment, and Use of Clinical Signs as Humane Endpoints for Experimental Animals Used in Safety Evaluation