

Policy on Experimental Neoplasia in Rodents

Purpose

The purpose of this document is to provide guidelines for the UVM research community on experimentally induced neoplasia in rodents. Investigators producing tumors in rodents should use this document as a reference in preparing their Animal Care and Use Protocols. These guidelines may be reviewed and followed as written, or exceptions may be requested.

Policy

Legal, regulatory, and more guidelines require that animal pain, distress, and suffering be minimized in any experiment. In order to minimize pain and distress in studies on experimental neoplasia in rodents, investigators must address issues concerning tumor burden, the status of the tumor (e.g. ulceration), and criteria for euthanasia. The following guidelines are intended to provide investigators with an indication of the standards and criteria for euthanasia that have been considered acceptable by the IACUC. The IACUC will evaluate an investigator's request for an exception to these policies. The scientific rationale for the exception must be clearly stated.

Tumor burden

In general, tumor burdens should not be so large as to interfere with ambulation, eating, drinking, defecating, and urination. Subcutaneous tumor burdens in rodents should not exceed 2000 mm³ which is approximately 10% of the animal's baseline body weight or 15% in context to tumor burden (mice). In the case of a 25 gram mouse, this would represent a single subcutaneous nodule of approximately 1.6 cm diameter. In the case of multiple masses, these should be individually measured as described above. The individual mass measurements should then be totaled and this number should be used to calculate the total tumor burden as described. Without a specific exception justified in the animal protocol, animals should be euthanized before tumors reach this size.

Tumor Status

Ulceration is often an inevitable complication of subcutaneous tumors. Animals with ulcerations or necrotic tumors must be euthanized unless an exception has been approved.

Monitoring of animals with tumors

In addition to the daily health checks performed by the animal care staff, documented daily health checks should be initiated by the investigator before the tumor begins to interfere with the physiological function of the animals.

Criteria for Euthanasia

Investigators must administer euthanasia in moribund animals. The IACUC requires that an investigator judge when euthanasia is appropriate for moribund rodents based on objective signs. Some of the known signs of illness or impending death which may be applied are shown below.

- a) Weight loss greater than 15%,
- b) Significant abdominal distension, especially when it begins to compromise respiratory ability of animal,
- c) Hunched posture with easily visible vertebral bodies,
- d) Failure to eat or drink,
- e) Absence (or abnormal) of fecal or urine output,
- f) Rough hair coat,
- g) Reluctance to move or abnormal gate,
- h) Discharges or hemorrhage,
- i) Abnormal behavior or vocalizations.