

Maintaining Tumors in Rodents

For all studies in which rodents have experimentally induced or implanted tumors, the expected size, clinical complications (e.g., ulceration or necrosis), experimental endpoints, and criteria for intervention or early termination of an animal from the study must be specified in the protocol for review by the Animal Care and Use Committee (ACUC).

Generally accepted maximum allowable tumor size for a single spontaneous or implanted tumor that is visible without imaging is approximately 2 cm in any dimension in mice and approximately 4 cm in any dimension in rats. Greater single or combined tumor burdens may be approved by the ACUC with sufficient scientific justification. Maximum size that a tumor can grow at locations within the cranium, thoracic cavity, or behind the eye, which would have to be monitored through imaging, is more limited. Tumors at these locations may interfere with vital functions of the animals and result in morbidity or mortality even though the size may be much less than cited above.

The overall wellbeing of the animal should take priority over precise tumor measurements in decisions regarding euthanasia or other interventions. Daily monitoring, including weekends and holidays, of tumor growth and overall clinical condition is the required norm.

Common signs of pain and distress in rodents include: ruffled fur, discharge from the eyes, weight loss, anorexia (lack of feces in the cage), dehydration, hunched posture, lethargy, reluctance to move, uncoordinated movements, being cool to touch (hypothermia), pale ears or feet, labored respiration, and blue-tinged mucous membranes (cyanosis). Furthermore, animals in pain or distress may not interact with their cage mates or cage mates may become aggressive towards them. The affected rodent may become uncharacteristically aggressive toward a familiar human handling it. Animals may squeal when picked up or when an affected area is touched. Persistent vocalization and crying indicates substantial pain or distress.

Animals that exhibit signs described above in the presence of a tumor burden, or that appear to be dying should be euthanized. Animal care staff will be instructed to mark such cages and immediately contact the individual named on the cage card and/or a clinical veterinarian for evaluation and intervention. Veterinarians will consult the protocol.

Refer to the ACUC Guidelines for using the ascites method for Monoclonal Antibody Production for additional information on ascitic tumors.

If you have any questions or need assistance, please consult ACUC Office staff (443-287-3738) or an RAR veterinarian (410-955-3273 or the veterinarian on clinical call: 5-3713).

Approved by the IACUC on: January 17, 2002; revision adopted October 20, 2005.

IACUC policies and guidelines are available at www.jhu.edu/animalcare/