

WVU IACUC POLICY: Tumor Development Endpoints for Euthanasia in Rodents

I. Introduction

This policy describes the expectations of the WVU Animal Care and Use Committee (IACUC) for monitoring tumor development and establishing humane endpoints for euthanasia in rodents with experimentally-induced or spontaneously-occurring tumors.

The *Guide for the Care and Use of Laboratory Animals*, 8th ed (2011, *Guide*) states (p27): “While all studies should employ endpoints that are humane, studies that commonly require special consideration include those that involve tumor models, ...” The *Guide* also states (p123): “Criteria for euthanasia include protocol-specific endpoints (such as degree of a physical or behavioral deficit or tumor size) that will enable a prompt decision by the veterinarian and the investigator to ensure that the endpoint is humane and, whenever possible, the scientific objective of the protocol is achieved.”

The goal of this policy is to ensure that scientific objectives are achieved while adhering to humane endpoints for euthanasia, which generally require coordination and communication between research, husbandry, and veterinary staff.

II. Notification of anticipated tumors

- A. Experimental inoculation of tumor cells must be recorded by research staff on the cage card, including the date and route of inoculation, and type of tumor(s).
- B. Tumorigenic strain in which spontaneous development of tumor(s) is expected must be noted by research staff on cage card, along with location of anticipated tumor(s).
- C. Research staff should note on cage card the anticipated date range of tumor appearance, if known, and expected clinical signs if known.

III. Monitoring of rodents with tumors

- A. Research staff must monitor tumor development at a frequency determined by tumor type and as described in the approved IACUC protocol. Records should be maintained in laboratory notebooks, computerized databases, etc.
- B. OLAR husbandry and veterinary staff will monitor rodents for clinical condition using typical veterinary care standards. Parameters include activity level, attitude, mobility, respiratory rate, hydration, body condition score, and ability to obtain food and water. Records will be maintained on Clinical Care cage cards.

IV. Endpoints of tumor development

- A. Tumor endpoints must be described in the IACUC protocol and followed by the research group.
- B. For unanticipated tumors or those without pre-defined endpoints, the following euthanasia criteria should be strongly considered:
 - a. Visible tumor(s) reach 2 cm³ in volume.
 - b. Tumor surface becomes necrotic, ulcerated or hemorrhagic.
 - c. Tumor interferes with rodent's ability to reach food and water.
 - d. Unrelenting seizures (status epilepticus) or other severe neurologic symptoms, e.g. "spinning" when held by the tail.
- C. Euthanasia endpoint is reached when rodent is painful, distressed, or in terminal clinical condition requiring euthanasia for humane reasons according to veterinary assessment.