



Tumor Burden Scoring

304.1 Purpose

To establish guidelines that will allow Emory University laboratory and DAR staff to objectively evaluate the health and welfare of animals carrying spontaneous or experimentally-induced tumors and determine when action to alleviate pain and distress associated with these tumors should be taken. The recommendations presented in this document are intended to augment, not supersede, the IACUC Policy #357 titled “Humane Endpoints.

304.2 General

In order to maximize study data acquisition and minimize animal pain and distress, the general health and welfare of test subjects needs to be continually and comprehensively assessed and documented as tumors and associated disease progress. The PI and research associates are responsible for monitoring the animals for endpoint criteria. Monitoring requirements are provided below. With these health assessments, DAR veterinary personnel in conjunction with laboratory personnel can determine what interventions are appropriate for the animal.

304.3 Scoring System

To supplement the general criteria presented above, the following is a system to objectively establish a cumulative health score for an animal. The animals should be evaluated in each of the areas presented and a total score determined. Actions for a range of scores are also provided on the next page.

304.3.1 Body Condition Score (See *DAR Mouse Health Monitoring* document for guidance)

- a. BCS of 3; Score=0
- b. BCS of 2; Score=8
- c. BCS of 1; Score=18

304.4.3 Tumor size (NOTE: In cases with multiple tumors, score will be based on the largest single tumor measured)

- a. Any individual tumor \leq 7mm in any dimension; Score=0
- b. Any individual tumor 8-17 mm in any dimension; Score=5
- c. Any individual tumor 18-20 mm in any dimension; Score=14
- d. Any individual tumor $>$ 20 mm in any dimension; Score=17

304.4.4 Tumor ulceration

- a. Absent; Score=0
- b. Present; Score=8
- c. Present with purulent discharge or other signs of infection; Score=18

304.4.5 Mobility/ambulation

- a. Normal ability to ambulate; Score=0
- b. Hindered ability to ambulate, but can acquire food and water; Score=8
- c. Impaired ability to ambulate and unable to acquire food and water; Score=18

304.4.6 Bodyweight change

- a. Standard IACUC endpoints apply (see Policy)

304.4.7 Animal Health and Tumor Monitoring Requirements

- a. For peripheral xenograft inoculations, monitoring must be done 2-3 days per week until the peripheral tumors become visible. Once primary or recurrent tumors are visible and expanding, monitoring is required daily in accordance with the scoring paradigm outlined. Following surgical resections, monitoring should be done daily until the incision is healed and then revert to the schedule for peripheral inoculations. Specific details about monitoring, e.g., body weight measurements, must be detailed in the IACUC protocol.
- b. For deep orthotopic inoculations or when metastases are likely, the minimum monitoring requirement is 2-3 days per week, but then daily at the time of lesion detection by imaging or daily at least 7 days before survival data indicates with high probability that clinical signs or deaths ensue. Specific details about monitoring, e.g., body weight measurements, must be detailed in the IACUC protocol.

Cumulative Score	Appropriate Action
0-7	General health and tumor growth must be directly assessed 2-3 times per week.
8-13	Case must be reported to DAR and management plan developed. Supportive therapy likely adequate. General health and tumor growth must be directly assessed daily.
14-17	Euthanasia may be required. General health and tumor growth must be directly assessed daily.
>17	Euthanasia is mandatory.

304.4 Document Properties

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