

Utarbeidet av AÅ Godkjent av	Tumor policy for rodents	Versjon: 2,0 Utarbeidet: 22.01.2016 Revidert: 03.09.2024
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1. Purpose

The purpose of this procedure is to secure good animal welfare through proper evaluation and treatment of animals with tumors.

2. Responsibility

The researcher is responsible for working according to their relevant FOTS application and the local procedures at Comparative Medicine Core Facility.

3. General information and rules

- All tumor-bearing animals must be observed daily and evaluated more thoroughly at least once a week. Findings must be documented on a scoring sheet to assess the progress of tumor growth, any metastasis, and the general condition of the animal, including body weight. Records must be available in the animal facility.
- If declining health status, moribundity, or unrelieved pain and discomfort is observed, contact the project leader and act according to the humane endpoints in the FOTS application. The final decision rests with the Attending Veterinarian.

4. Spontaneous tumors /naturally occurring tumors

- Animals with non-experimental tumors must be evaluated as soon as possible. Humane endpoints as listed in this policy are determinants for euthanasia, but in most cases, animals with non-experimental tumors should be euthanized as soon as possible, as they are unsuitable candidates for research and breeding.

5. Experimental tumors

- The site of tumor implantation should be chosen to minimize damage to adjacent normal structures and to have minimal impact on normal behavior. Sites involving the special senses should be avoided.
- After implantation, animals must be observed at least daily, and weighed and scored at least once a week. In critical phases of tumor development, more frequent evaluation might be necessary. This plan should be a part of the FOTS protocol.
- Detailed knowledge of the tumor model and the onset and nature of any adverse effects on the animals is important when deciding on scientific and humane endpoints. If introducing an

unfamiliar tumor model in your research, a pilot study should be performed. Clearly defined endpoints must be stated in the FOTS protocol.

- A score sheet tailored to the experiment should be added to the FOTS protocol.
- Once animals become affected by the tumor, it may be necessary to separate them and allow them more space to avoid cannibalism by cage mates. They may require supportive care such as food on the cage floor.

6. Humane Endpoint Criteria

- Experiments should be completed before tumor development or tumor-associated disease causes death or a significant deterioration of the animal.
- The visible size of the tumor is only one of the criteria used for determination of humane endpoint. The most important consideration is the overall health of the animal.
- For subcutaneous tumors, the maximum size is 20 mm in diameter for a mouse or 40 mm diameter for a rat. If the animal has more than one tumor, this size is the maximum allowable size for all tumors combined.
- An animal in chronic pain or distress that cannot be relieved by analgesics or supportive therapy must be euthanized, unless other humane endpoints are approved in the FOTS protocol.

The presence of one or more of the criteria below is indication for euthanasia, unless alternative humane endpoints are approved in the FOTS protocol:

- Impaired mobility (the inability to reach food and water)
- Inability to remain upright
- Interference with a vital physiological function: This includes respiration, mastication, swallowing, urination, defecation or locomotion
- Location of the tumor on the animal's belly or its inner leg, causing wounds or interfering with locomotion
- Hunched abnormal posture for > 48 hours
- Labored breathing and cyanosis (bluish ears, feet or mucous membranes)
- Clinical dehydration and/or prolonged decreased food intake
- Muscle atrophy and signs of lethargy and lack of physical activity
- Weight loss > 15% / Body condition score < 2
- Chronic diarrhea or constipation for more than 48 hours
- Severe anemia (pale ears, feet or mucous membranes)
- Bloodstained or mucopurulent discharge from any orifice
- Self-mutilation; Lack of grooming behavior/Rough/Unkempt hair coat for >48 hours
- Enlarged lymph nodes or spleen
- Significant abdominal distension
- Cranial deformity/Neurological signs
- Exophthalmos (bulging eye)
- Skin pathology including ulceration or necrosis of tumor for > 48 hours.
- Restlessness/Unable to get comfortable

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- Unconsciousness with no response to external stimuli

7. Comments

- Ulcerated, necrotic tissue is one of the most common findings in tumor models. Ulcerated or necrotic tissue may result in a continuous loss of body fluids and predisposes to infection. It is inconsistent with sound research to allow the tumor to proceed to the point of ulceration and necrosis unless this is the phenomenon under study.
- Weight loss/cachexia: Implanted or naturally occurring tumors may cause weight loss in the animal due to their nutritive demands or due to loss of well-being causing anorexia. A humane endpoint is a body weight loss of 15% of pre-procedural weight or more, in adult rodents. In the live animal, this must be estimated, since the tumor cannot be weighed apart from the animal. Animal on tumor studies must be weighed at least weekly, and records must be available for the facility staff.
- Restlessness/Unable to get comfortable is an indication of severe pain and requires immediate attention either with administration of analgesics or euthanasia.
- Self-mutilation; Lack of grooming behavior/rough/unkempt hair coat is an indication that the animal is not well and requires daily monitoring and attention
- **The professional judgment and decision of the Attending Veterinarian is final.**