Policy Statement #17–05 Humane Experimental Endpoints Faculty of Science, Mahidol University–Institutional Animal Care and Use Committee (MUSC–IACUC)

Researchers must be able to identify humane experimental endpoints that minimize pain, distress, or discomfort by choosing the earliest endpoint that is compatible with the scientific objectives of the research project. The continuation of a study until an animal dies is almost never acceptable and must be accompanied with strong scientific justification. When animal conditions become unacceptable, attending veterinarian or clinical veterinarian on behalf of the attending veterinarian, has authority to perform humane endpoint. Although each scientific study is unique, the IACUC has established the following guidelines to assist principal investigators in identifying clinical signs indicative of a humane experimental endpoint.

1. Significant weight loss (15 - 20 %) over a few days would be considered rapid. This requires frequent monitoring. A gradual weight loss over an extended period of time (weeks to months), which leads to emaciation, would also be grounds for euthanasia. Calculation of change in body weight should take into consideration growth or pregnancy weight gains in animals fitting those criteria. **Strong scientific justification is required for any weight loss exceeding 20%.*
2. Inability to rise or ambulate – This condition would indicate that an animal would not be able to reach for food and/or water. **Animals should be euthanized within 24 hours of not being able to rise or ambulate.*
3. Labored breathing – A humane endpoint may be reached when animals show a strong abdominal component of labored breathing.
4. Dehydration – Severe dehydration is recognized by loss of skin turgor. Skin pinched over the back that does not return to normal is called “tenting”. If this is excessive, it is indicative of a humane endpoint.
5. Abdominal distension – May occur in ascites secondary to tumor growth, or during severe hypoproteinemia or hypoalbuminemia. Animals will have enlarged abdomens and may have a difficult breathing and/or ambulating.
6. Other clinical signs that may lead to a humane endpoint (depending on severity and duration) – diarrhea, if debilitating; progressive dermatitis; rough hair coat; hunched posture; jaundice and/or anemia; neurologic signs; bleeding from any orifice; or self-trauma.
7. Tumor size – Usually the diameter of the mass is measured with a caliper or expressed as a percentage of body weight. Tumor burden should not exceed 10% body weight in an adult rodent and/or specifically 2 cm in diameter in an adult mouse or 4 cm in an adult rat. Tumor endpoints should also take into account the location of the tumor and the ability of the animal to ambulate.

In addition, an endpoint is reached if the tumor ulcerates or is necrotic. **Strong scientific justification is required for exceeding stated tumor sizes or allowing tumors to become ulcerated and/or necrotic.*