

SOP #: 106.02Title: **SOP -** Death as an Endpoint

Approvals:

Attending Veterinarian

Date:

08/18/16

IACUC Chairman

Date:

08-18-16

1. Purpose

1.1 The intent of this standard operating procedure (SOP) is to offer guidelines about the Death as an Endpoint.

2. Responsibility

2.1 It is the responsibility of all personnel using animals in research and teaching to abide by this policy. It is the responsibility of the IACUC to review for approval properly justified requests for an exception to this policy.

3. Definitions

3.1 The Office for Protection from Research Risks (OPRR) Institutional Animal Care and Use Committee Guidebook (NIH Publication No. 92-3415) states that "Endpoints other than death must always be considered and should be used whenever the research objective makes it possible." Death as an endpoint does not mean that animals will be euthanized at the end of a study. What it does mean is that the research will cause the death of the organism.

4. Guidelines

4.1 The FIU IACUC discourages the use of death as an endpoint, and instead encourages the use of alternative endpoints. Examples of alternative endpoints are given below (endpoint utilized determined by type of experimental application, e.g., tumor study, toxicity testing, surgical procedure, etc.):

- 4.1.1 Tumor load > 10% of normal body weight.
 - 4.1.2 Weight loss of > 20% of normal body weight (due to anorexia, physical inability to obtain food and/or water, or severe diarrhea or vomiting).
 - 4.1.3 CNS signs such as circling, blindness, convulsions.
 - 4.1.4 Hematologic parameters indicative of end-stage organ failure.
- 4.2 Animals should be humanely euthanized at the time the alternative endpoint is reached, or if they demonstrate signs of being moribund. Moribund is defined as "in a dying state" (Dorland's Medical Dictionary, 26th Ed., Philadelphia: W.B. Saunders, 1981). Animals are considered to be moribund if they manifest any of the following clinical signs and recovery is not expected.
- 4.2.1 Inability to maintain an upright position.
 - 4.2.2 Prolonged (greater than 48 hours) physical inability to obtain food and/or water
 - 4.2.3 Prolonged (greater than 48 hours) anorexia and/or clinical dehydration.
 - 4.2.4 Uncontrollable diarrhea, vomiting or constipation.
 - 4.2.5 Abdominal breathing and cyanosis
 - 4.2.6 Unconsciousness with no response to external stimuli (e.g., toe-pinch withdrawal test).
- 4.3 If death as an endpoint must be used (i.e., killing a moribund animal would invalidate the study) the following stipulations must be met:
- 4.3.1 Scientific justification for using death as an endpoint must be provided in writing as part of the animal care protocol and must be approved by the IACUC.
 - 4.3.2 Moribund animals must be monitored at minimum twice daily (in the early morning and late afternoon, including weekends and holidays).
 - 4.3.3 Written records must be made of all monitoring sessions indicating the time and date of the observation, the person performing the observation, and any findings (such as number of animals demonstrating clinically abnormal behavior, number of animals found dead, etc.). These records must be kept on file and made available to the FIU ACF personnel and/or IACUC on request.
 - 4.3.4 Moribund animals must be removed from group housing and housed individually with easy access to food and water.

- 4.3.5 The minimum number of animals necessary to achieve statistical significance must be used.
- 4.3.6 Drugs or techniques to alleviate pain or distress preceding death must be used unless they would interfere with the scientific objectives of the study.
- 4.3.7 Proposals foregoing the use of anesthetics, analgesics or tranquilizing drugs must be extensively justified in writing as part of the animal care protocol and approved by the IACUC. Additionally, proposals which utilize death as an endpoint and which forego the use of anesthetics, analgesics or tranquilizing drugs to alleviate pain and distress in experimental animals will be assigned the highest pain level category, "E," on all protocol forms and regulatory papers.

5. References

- 5.1 The Guide for the Care and Use of Laboratory Animals 8th Edition (p. 27-28)

6. Revision

- 6.1 Revision 02: 2016 IACUC Review

