

| University Animal Care Committee Standard Operating Procedure | | |
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| Document No: 7.5.1 | Subject: Humane Killing Method for Rodents via Barbiturate or Injectable Anaesthetic | |
| Date Issued: August 21, 2012 | Revision: 3 | Page No: 1 |

Location: Queen's University

Responsibility: Principal Investigators, Research Staff, Veterinary Staff

Purpose: The purpose of this Standard Operating Procedure (SOP) is to describe the use of barbiturates or injectable anesthesia for humanely killing an animal.

- 1. Introduction and Definitions:** As per the UACC policy on humane killing of animals used in science, overdose of barbiturates or injectable anaesthetic is an acceptable method of humane killing for rodents when conducted properly. Unless justified and approved in the Animal Use Protocol, a Primary method (rendering death) of humane killing must be followed by a Secondary (confirmation of death) method.

Abbreviations: Animal Care Services **ACS**, Principal Investigator **PI**, subcutaneous **SC**, intravenous **IV**, intraperitoneal **IP**, intramuscular **IM**, per os **PO**, per rectum **PR**

2. Materials:

- Sterile needles (assorted sizes – 23-27g)
- Sterile syringes (assorted sizes 1-10ml)
- Barbiturate or injectable anaesthesia

3. Procedures:

- Using an appropriate gauge needle, restrain the animal gently and inject one of the following intraperitoneally:
 - 1) Three times the calculated anesthetic dose or;
 - 2) 100mg/kg sodium pentobarbital.
- Following the injection, the animal should be placed back in its cage (lined with paper to avoid inhalation of bedding material) and placed in a quiet area to minimize excitement and trauma until humane killing is complete. Multiple animals should not be placed within the same cage during anesthesia.

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- To confirm death, monitor the animal for the following signs: cessation of chest movement, no palpable heartbeat, poor mucous membrane color, no response to toe pinch, and color change/opacity of the eyes.
- A secondary method of humane killing can be completed at this time, such as bilateral pneumothorax, cervical dislocation, or exsanguination.
- Carcasses should be disposed of promptly.

****A physical method of humane killing such as a bilateral pneumothorax, cervical dislocation, or exsanguination is required before disposal of the animal to confirm humane killing. The handler must ensure complete separation between the cervical vertebrae and skull (severance of the spinal cord) if cervical dislocation is the secondary method.****

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| Date Issued: August 21, 2012 | Revision: 3 | Page No: 3 |

References:

[Journal of the American Association for Laboratory Animal Science](#), Volume 45, Number 1, January 2006, pp. 98-105(8)
James Artwohl, Patricia Brown, Brian Corning and Susan Stein Report of the ACLAM Task Force on Rodent Euthanasia

<https://www.ccac.ca/Documents/Standards/Guidelines/Euthanasia.pdf>

SOP Revision History:

| Date | New Version |
|----------------------------------|---|
| February 28 th , 2019 | Triennial Revision |
| February 28 th , 2022 | Triennial Revision |
| July 22 nd , 2024 | Triennial Revision – updated format, removed neonate euthanasia, changed wording (humane killing) |
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