

University Animal Care Committee Standard Operating Procedure		
Document No: 7.5.3	Subject: Euthanasia Method for Adult Rodents via Overdose of Inhalant Anaesthesia	
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 procedure for the euthanasia of adult rodents using overdose of inhalant anaesthesia.

1. Introduction and Definitions: As per the UACC policy on euthanasia of animals used in science, overdose of inhalant anesthesia is an acceptable method of euthanasia for adult rodents when conducted properly.

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

2. Materials:

- Calibrated inhalant isoflurane anaesthetic vaporizer with anaesthetic induction chamber
- Oxygen
- Instruments for secondary method (e.g. scissors, cage card holder)

3. Procedures:

- Anesthetic chambers should not be overloaded and need to be kept clean to minimize odors that might distress the next animal euthanized.
- The anesthetic can be introduced at a high concentration from a vaporizer of an anesthetic machine connected to an adequate scavenging system or air filter.
- Sufficient room air or O₂ must be provided during the induction period to prevent hypoxemia.
- Neonatal animals (up to 10 days of age) are resistant to the hypoxia induced by high anesthetic gas concentrations, therefore, alternative methods are recommended. Inhalant anesthetics may be used for narcosis of neonatal animals provided it is followed by a secondary method of euthanasia (e.g.

University Animal Care Committee Standard Operating Procedure		
Document No: 7.5.3	Subject: Euthanasia Method for Adult Rodents via Overdose of Inhalant Anaesthesia	
Date Issued: August 21, 2012	Revision: 3	Page No: 2

decapitation using sharp blades).

- To confirm death, monitor animal for the following signs: no chest movement, no palpable heartbeat, poor mucous membrane color, no response to toe pinch, color change or opacity in eyes.

Note: A physical method of euthanasia such as cervical dislocation, bilateral pneumothorax, heart snip or exsanguination is required (unless otherwise justified in the animal use protocol) before disposal to ensure death.

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
August 21 st , 2012	Original SOP created
February 28 th , 2019	Review and update
February 28 th , 2022	Triennial review
January 23 rd , 2023	Removed bell jar method, removed neonate and fetus, updated format.