



University Animal Care Committee Standard Operating Procedure		
Document No: 7.27	Subject: Hypoxic Studies in Mice	
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Location: Queen's University

Responsibility: Principal Investigators, Research Staff, Veterinary Staff

Purpose: The purpose of this Standard Operating Procedure (SOP) is to describe the method of hypoxic studies in mice.

1. Introduction and Definitions: The purpose of this Standard Operating Procedure (SOP) is to describe the method used inducing the development of pulmonary hypertension by exposing mice to the hypoxic model of disease.

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

2. Materials:

- x ProOx Sensor
 - f Calibrated to maintain the level of oxygen at 10% within the chamber. The alarm should be calibrated to allow for a range of $\pm 2.0\%$ which, if exceeded, will cause the alarm to sound and the gas to be turned off.
- x CO₂ Sensor
 - f Measurements of CO₂%, temperature, and humidity will be recorded daily.
- x CO₂ Scrub (soda lime -CDMV)
- x Desiccant beads DRIERITE™ Anhydrous indicating desiccant equivalent
- x Sterile Cages
- x Water Bottle
- x Nitrogen Gas

3. Procedures

- x The ProOx sensor will be calibrated and set to maintain an internal oxygen percentage of 10%.
- x Mice will be transferred into a clean cage with adequate food and water.
- x The cage will be placed into the hypoxic chamber with the lids on. If cages are required to be stacked, stacking should be off-set to allow for air circulation around the filter.
- x The gas will be turned on and will fill the chamber until the ProOx sensor reads between 8-12%.
- x The alarm will be turned on to prevent the chamber from deviating from the desired oxygen percentage ($\pm 2\%$).
- x The O₂%, CO₂ level, temperature and humidity will be recorded daily.
- x The mice will be monitored daily by looking into the chamber and assessing overall wellness.
- x The chamber will be opened, and mice will be transferred into a new, clean cage weekly. The gas alarm will be turned off when the chamber is opened.
- x The new cage will be placed back into the chamber, and the gas will be turned on.

