

Sam Houston State University Science Annex

Mus musculus Euthanasia

SOP #: MM-003

Date adopted : _____

Last revision : _____

Purpose

To ensure that all mice requiring standard euthanasia are dispatched in a manner which minimizes distress and pain.

Responsibility

It is the responsibility of the Operations Manager of the Science Annex to provide a CO₂ chamber, dissecting kit and a clean space located away from other live animals to the researcher euthanizing the mice, while adhering strictly to the procedures outlined in this document.

It is the responsibility of the party performing the euthanasia to follow the procedures outlined in this document, furnish any special implements required for the procedure and to comply with the AVMA Panel on Euthanasia.

Procedures

Adult mice are typically euthanized in an inhalation chamber slowly filled with CO₂ from a pressurized cylinder. CO₂ is approved by the AVMA Panel on Euthanasia and has the added benefit of CO₂ narcosis, which has an analgesic/anesthetic effect.

Animals are placed into the CO₂ chamber before any CO₂ is released. Minimum floor space requirements must be met, as these specimens are still alive at this point.

Animals are only placed in the CO₂ chamber with live specimens of their own species in order to minimize distress.

When possible, animals should be euthanized in their home cage.

Animals are never to be euthanized in a housing room or in the presence of other animals, thus the procedure area or cleaning room will be available for euthanasia.

Once the mice are in the CO₂ chamber, 10-30% of the chamber's volume is replaced with CO₂ each minute. So long as this gradual filling regimen is followed, no anesthetic pretreatment is necessary.

After observing cessation of breathing and unresponsiveness to a firm tail pinch, the mice are left in the CO₂ chamber for an additional 2 minutes.

Death is confirmed by an approved secondary means of euthanasia such as cervical dislocation or bilateral pneumothorax.

The CO₂ chamber must be cleaned before introducing the next group of mice.

Neonate mice (< 10 days old) are resistant to CO₂ inhalation as a means of euthanasia. While CO₂ may be used to anesthetize neonates, this is not a requirement. Cervical dislocation or decapitation are both approved, efficient means of euthanizing neonatal mice. If using CO₂ as an anesthetic, be aware that neonates may require up to an hour in a CO₂ chamber before they become non-responsive.

All euthanized specimens are confirmed dead by a secondary means of euthanasia before being stored, disposed of or used in another part of the study.