LAB_011 Euthanasia - Lethal Injection in Mice and Rats (Expiry: November 2027)

NOTE

- **When citing this SOP the document *LAB_100 Euthanasia Methods in Rats and Mice* also forms part of this SOP.**
- **If using anaesthesia, you must also describe your chosen anaesthetic technique (or quote the relevant SOP you will be following)**
- **The use of (*) indicates this statement is dependent on the facility procedures**
- **The use of (**) indicates this statement is dependent on AEC Approvals**

I. OBJECTIVE

To describe the standard, safe and humane killing of mice and rats via intraperitoneal injection of sodium pentobarbital used across UQ research projects, also reflecting the procedure used to train workers across UQ within UQBR.

II. DEFINITIONS – Refer to LAB_100 Euthanasia Methods in Mice and Rats

III. COMMENTS / RECOMMENDATIONS– Refer to LAB_100 Euthanasia Methods in Mice and Rats

IV. SAFETY AND COMPLIANCE – Refer to LAB_100 Euthanasia Methods in Mice and Rats

V. TRAINING CONSIDERATIONS – Refer to LAB_100 Euthanasia Methods in Mice and Rats

VI. EQUIPMENT

- PPE* *Although PPE is facility dependent, minimum expectations include disposable gloves, clean long-sleeved laboratory gown, hair bonnet, eye protection, face mask.*
- Home cage - enclosure
- Needle & Syringe (as per LAB_028 Injections - Intra-peritoneal (IP) in Mice, Rats and Neonates)
- UQBR standard sodium pentobarbitone euthanasia solution
- Cadaver bag

VII. PREPARATION – Refer to LAB_100 Euthanasia Methods in Mice and Rats

VIII. PROCEDURE

1. Move rodent cage to designated euthanasia space, retrieve the animal from the home cage and restrain it as appropriate for IP injection.

2. Using a needle and syringe, inject 200-800mg/kg of standard sodium pentobarbitone IP (as per LAB_028 Injections - Intra-peritoneal (IP) in Mice, Rats and Neonates). This equates to:
   a) Mice (<50g live body weight): 0.2mL of UQBR standard sodium pentobarbitone euthanasia solution
   b) Rats (<500g live body weight): 2mL of UQBR standard sodium pentobarbitone euthanasia solution.

   See LAB_100 Euthanasia Methods in Mice and Rats for details of UQBR standard sodium pentobarbitone euthanasia solution.

   If the animal's body weight is in excess of specified parameters (e.g. a 60g mouse), it is advised that you consult a UQBR veterinarian to reduce the volume of water for injection (or normal saline) used to make the dilution – ensuring the final dose administered is >200mg/kg sodium pentobarbital and the final volume injected appropriate for the species, as per LAB_028 Injections - Intra-peritoneal (IP) in Mice, Rats and Neonates.

3. Return the animal to an empty home cage and monitor for loss of righting reflex, followed by indicators of death (see LAB_100 Euthanasia Methods in Mice and Rats for Indicators of death). If loss of righting reflex if not achieved within 2 minutes immediately repeat step 2 or implement an alternative method of humane killing in rodents e.g. CO_2, cervical dislocation (if body weight <150g), decapitation.
   The righting reflex is the animal's ability to maintain a dorso-ventral position (when standing, sitting or lying down). Loss of the righting reflex is correlated with a loss of consciousness and sensory deprivation.

4. Once indicators of death are confirmed, place the animal into cadaver bags. Seal and place the body in the designated freezer for disposal, else utilise the carcass for scientific purposes, as approved**.
   If the animal has lost its righting reflex and withdrawal reflexes (e.g. toe pinch withdrawal), however, death has not been confirmed, a secondary method of euthanasia must be performed, for example CO_2, cervical dislocation, decapitation, bilateral thoracotomy, resection of the heart and or lungs, exsanguination and or cardiac perfusion.

IX. BIBLIOGRAPHY - Refer to LAB_100 Euthanasia Methods in Mice and Rats

Version #	Reviewing AEC (note: all other relevant AECs ratify the approval)	AEC Review Date	Approval To Date
[#]		[DD/MM/YYYY]	