

SOP No:	AHP 86
SUBJECT:	Anaesthesia and Multiphoton Microscope Imaging of Rodents
POLICY:	Operator must be experienced and competent at this technique
PRECAUTIONS:	Gloves, long-sleeved gown, closed-in-shoes, hair cover
EQUIPMENT:	Methoxyflurane™ Induction chamber Clippers Nair® Cotton Buds Nose Cone of Methoxyflurane™ Access to Warm Water Tissues Clean, Empty Mouse Cage Empty Transport Box Adhesive Tape Multiphoton Microscope Ti Sa Laser Anesthetic Induction Chamber Anesthetic Machine for delivery of Isoflurane® Isoflurane®/Forthrane® Scavenging canister for anesthetic machine 25 gauge needle 1ml syringe Saline/Hartmans' solution (or equivalent) Soft tape e.g. Micropore (to secure animals limbs)

PROCEDURE:

- 1. Skin preparation to be completed in the animal facility surgery area Animal is anaesthetised with methoxyflurane™, when fully anaesthetised remove from induction chamber and shave the required area, taking care not to scratch or nick the skin.**
- 2. Apply 'Sensitive Skin Nair®' to the shaved area with a clean cotton bud wait 2-3 minutes and wash with warm water to remove cream and fur¹, a nose cone with 100ul methoxyflurane™ may be required to keep the animal still. Dry the animal off with clean dry tissues. Remove from source of methoxyflurane.**
- 3. Place animal into dry IVC containing clean, dry tissues, lock cage and place into small transport box and secure with tape.**
- 4. Move to MPM Room at Diamantina Institute using [AHT 28c](#) Foot Transportation of Laboratory Rats and Mice.**

5. The animal cage is removed from the transport cage and the animal moved into the anesthetic induction chamber filled with 4% Isoflurane[®] and oxygen².
6. Once the animal is sufficiently anaesthetized reduce Isoflurane to maintenance of 1.5-3%² remove lid and place animal onto a warm heating pad on top of microscope stage and introduce the rectal temperature probe (mouse body temperature is reported as 36-37°C³ or 36.5-38°C⁴).
7. Place the animal into required position using tape to secure in place. Place nose cone over animal to continue feeding in of Isoflurane at maintenance level of 1.5-3%²
8. The animal is to be on the stage for a period of no longer than 4 hours with isoflurane/oxygen mix fed in through nose cone and vacuum scavenger unit close to the mouse to prevent any leakage of anaesthetic into the work area.
9. At the end of the scan turn off Isoflurane[®] and flush the anesthetic machine with oxygen.
10. Remove tape from mouse and allow the animal to fully recover.
11. Administer 1ml normal saline s/c with 25g needle.
12. Once the animal is ambulatory replace into home cage and monitor for 20-30 minutes and return to BRF.

RECOMMENDATIONS:

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REVISED:

REFERENCES

1. Hedrich, HJ. Bullock, G. The Handbook of Experimental Animals: Mice as laboratory animals. London : Elsevier Academic Press, 2004.
2. Flecknell P. *Laboratory Animal Anaesthesia 2nd Edition* Academic Press, London.
3. The UFAW Handbook on the Care & Management of Laboratory Animals 6th ed; editor Poole, Trevor B. Longman Scientific & Technical, England, 1986.
4. Harkness JE, Wagner JE 1989, *The Biology and Medicine of Rabbits and Rodents; 3rd Edition*, Lea and Febiger, Philadelphia.