

Research Animal Standard Operating Procedures (SOP) must meet the following criteria:

1. Describe procedures or activities involving research animal(s) common to more than one research project.
2. Support the handling and or performance or undertaking of a procedure(s), involving an animal, in the same way on each occasion it is performed.
3. Describe a procedure or activity involving a research animal(s) undertaken by more than one person; and
4. Describe a procedure or activity involving a research animal(s) that will be undertaken in more than one location.

Name of Procedure	Intravenous anaesthesia – Alfaxan	
Species	Mouse	
ACEC	Reference	SOP#8- Mar 22-Intravenous anaesthesia using Alfaxan - Mouse
	Author	Nicole Hansbro
	Version	1.3
	Date approved	31 March 2022
	Date for review	31 March 2025
	Procedure classification	3
Ethical considerations	<ol style="list-style-type: none"> 1. Respect for animals must underpin all decisions and actions involving the care and use of animals for scientific purposes. 2. The procedure must be performed according to current best practice to support the wellbeing of the animal. 3. Persons performing this procedure must be competent in the procedure or be under the direct supervision of someone who is competent. 	

Details

1. Description of procedure

1. **Equipment:**

- 1.1 Syringe
- 1.2 31-27g needle
- 1.3 Heat lamp
- 1.4 Antiseptic such as chlorhexidine in 70% ethanol in water
- 1.5 Cotton gauze swabs
- 1.6 Sharps container

2. **Method:**

- 2.1 Place the heat lamp over the cage for a few minutes to allow dilation of veins of the animals (this makes finding the tail vein easier). Taking care not to overheat the animals.
- 2.2 Place mouse in restraint device that provides access to the tail. This apparatus should not have sharp edges that may cause injury to the mouse.
- 2.3 Gently guide the tail through the hole in the apparatus to allow manipulation of the tail for injection.
- 2.4 Locate the tail vein laterally. This is the site for intravenous (IV) injection.
- 2.5 Using a cotton gauze swab soaked with antiseptic, apply the antiseptic to the injection site
- 2.6 With the bevelled edge of the needle facing upwards, insert the needle.
- 2.7 The maximum volume to be injected in this way in mice is 1% of the animal's body weight.
- 2.8 Hold a dry cotton gauze swab over the site of injection for at least 60 seconds to ensure that bleeding has stopped.
- 2.9 Dispose of sharps appropriately.
- 2.10 Release the animal back into its cage and observe for any signs of abnormal behaviour.

NOTE: To avoid inadvertent intravenous injection, the syringe plunger should be drawn back after introducing the needle into the tissue. If the needle has penetrated a vessel, blood will be seen in the hub of the needle.

- 2.11 Give the Ketamine/Xylazine Working Solution at a rate of 0.2mL/ 20g of body weight using a 1mL syringe and a 27 gauge needle.
- 2.12 For lighter anaesthesia use 0.1mL/ 20g of body weight.

NOTE: The degree and length of anaesthesia obtained in any animal depends on many factors, including individual and strain variations. The best dose for a given procedure depends on many factors. Some of these factors are:

- 1) the length of time the rodent must be anaesthetised
- 2) the level of pain that will be inflicted on the rodent
- 3) the sensitivity of that particular rodent to the anaesthetic agent.

The dose for any particular animal or group of animals must be titrated to give effective anaesthesia for the necessary length of time.

2. Drug Details

Drug name (generic name, not trade name)	Dose Rate (mg/kg body weight)	Route	Timing of administration, and frequency <i>eg. 30 minutes pre-operative, to induce anaesthesia, during procedure, at specific intervals during the procedure)</i>
Alfaxan	10mg/ml stock diluted 1:4 in sterile PBS	IV	Mice injected with 100ul immediately prior to procedure

3. Monitoring

Clinical or physiological criteria that will be used to monitor the depth of anaesthesia and general well-being of the animal during the anaesthesia.

- Respiratory frequency will be monitored to ensure slow constant breathing.
- The adequacy of the depth of anaesthesia will be checked intermittently using lack or reflexes such as the withdrawal reflex (flexion of the leg following a firm pinch of the paw or interdigital skin) or the palpebral reflex (in response to stroking the eyelids).

Monitoring of animals to ensure satisfactory recovery from anaesthesia.

Mice will be monitored until regular levels of activity and awareness are achieved.

References

Laboratory Animal Anaesthesia. *Paul Flecknell*. 2016. 4th edition.

ACEC Chair

