This SOP replaces:	Date: None Version: None
Reason for Change:	None
Related SOPs:	SOP-LTK-TRT-8-A-EN Scoring Post-Application
Indication of Use:	Procedures that require the animal to be unconscious.
Aim of SOP:	This procedure describes how to perform anesthesia by isoflurane

Distribution:

1. Original: Thorsten Buch
2. Copy: Animal facility
3. Intranet

Attachments:

Generated	Checked and approved
at: 11.7.15	at: 11.7.15
by: Thorsten Buch	by: Philippe Bugnon

Responsible Persons: Any person with Modul 1 and registered on a particular animal permit

Method: inhalation of isoflurane in conjunction with oxygen,

Principle of Method:

1. Inhibits NMDA glutamate receptors, and potassium channels, inhibits Ca ATPase. Binds to GABA receptors and glycin receptors ATPsynthase D and NADH dehydrogenase

Calibration: ensure that the nebulizer is maintained regularly

Machine:
Laminar flow/changing station
Isoflurane setup
Optional: Heating pad

Reagents:

1. Isoflurane
2. Oxygen
3. Optional: Vit A oinment or Humigel for long anesthesias

Safety:

1. If possibly pregnant: do not use isoflurane!!!
2. Follow the rules for the animal house
3. If machine uses coal filter: check weight before and after use. If necessary, change filter

Method Description:

1. Check the level of Isoflurane and refill if necessary before opening the oxygen supply.
2. Check all connections (coal filter, oxygen to vaporizer, vaporiser to induction box and mask
3. Check the presence of the pin in the mask (necessary for mice)
4. Turn on "Evacuation Pump" and the oxygen supply.
5. Turn on the gas flow to the vaporizer (min 600 ml/min). If lower, the percentage of isoflurane in the flow will be unstable.
6. Set vaporizer value to 0% agent
7. Turn on flow to induction chamber
8. Set the vaporizer to appropriate setting for induction of anesthesia, typically at 2.5%.
9. Place animal in induction chamber, wait 2-3 minutes for anaesthesia
10. Set vaporizer to 2% to maintain anesthesia.
    a. Optional: Turn flow to anaesthesia mask (nose cone). Check the respiration rate (stable, regular and low) and adapt the percentage of isoflurane if necessary
    b. Optional: If anethesia lasts for more than 5 min: place the mouse on heating pad (38°C) and protect eyes with oinment (Vit A oinment or Humigel)
    c. Optional: After surgery, return mouse into the induction chamber
11. Turn off "chamber on/off" prior to removing animals from induction chamber
12. Turn the vaporizer to the off position. Turn on the "Chamber on/off" to allow the pure oxygen to flow through the induction chamber for 5 minutes.
13. Turn off the oxygen supply and the evacuation pump
14. Check the level of oxygen and the coal filter, replace if necessary
    Weight the Aldasorber (coal filter), if more than 1400 g ! replace it
    Calculation of the oxygen available: pressure (bar) x volume of the oxygen bottle (liters) = how many minutes available (with a flow of 1 liter / minute). Example: 100 (bar) x 10 liter bottle = 1'000 minutes of oxygen available.

Controls:
control pinch reflex (skin between toes oft he hind limb) before start of surgery

Documentation:
Lab book, Score sheet SOP scoring post-application

Problem management:
Case 1: the animal does not sleep
• vaporizer empty?
• O_2 cylinder empty?
• Connections ok?

Case 2 : induction OK, but later the animal does not sleep anymore
• nose pin lacking?
• Nose mask defect?
• O_2 flow too low (< 600 ml/min)?

Case 3 : Induction OK, then later the animal dies
• Isoflurane still on induction value?
• extraction pump ON ?
• adsorber full?
• warming pad ON?

Report any other adverse event to your supervisor or vet

Literatur: