1. PURPOSE

This Standard Operating Procedure (SOP) describes methods for anesthetizing guinea pigs.

2. RESPONSIBILITY

Principal Investigators (PIs) and their research staff, veterinary care staff.

3. INTRODUCTION

3.1. Special facilities and equipment are required (e.g. volatile anesthetics).

3.2. Guinea pigs are not routinely fasted prior to anesthesia due to their inability to vomit.

3.3. Rodents can be anesthetized with either inhalant gas or injectable drugs. The use of inhalant gases is the preferred method of anesthesia whenever possible.

3.4. Keep animals warm by covering them (e.g. gauze pad or towel) and/or providing a heat source until the animal has recovered from anesthesia.

3.5. Never leave an anesthetized animal unattended.

4. MATERIALS

4.1. Material or equipment to provide or conserve body heat (e.g. heating disc or pad, warm-water circulating pad)

4.2. Ophthalmic ointment (natural tears)

4.3. Gas anesthesia machine (calibrated within the last 12 months) with adequate gas scavenging system or filter

4.4. Induction chamber constructed of a see-through material (glass, polycarbonate, etc.)

4.5. Isoflurane

4.6. Ketamine (100mg/mL) *Guidelines for Use of controlled drugs

4.7. Xylazine (20mg/mL)

4.8. Acepromazine (10mg/mL)

4.9. Sterile isotonic saline (0.9% saline) or sterile water for injection

5. PROCEDURES

5.1. Isoflurane anesthesia:

    5.1.1. Induction:

        5.1.1.1. Give a ½ dose of anesthetic cocktail SC, IM or IP (see section 5.2 below) and wait 5 minutes.

        5.1.1.2. Place the animal in the induction chamber.

        5.1.1.3. Adjust the oxygen flowmeter to 0.8 to 1.5 L/min.

        5.1.1.4. Adjust the isoflurane vaporizer to 3% to 5%.

    5.1.2. Maintenance:

        5.1.2.1. Use the mask connected to the Bain circuit,

        5.1.2.2. Adjust the flowmeter to 0.4 to 0.8 L/min.

        5.1.2.3. Adjust the isoflurane vaporizer to 2 to 2.5%.

        5.1.2.4. Apply ophthalmic ointment (natural tears) to both eyes to prevent dryness and damage to the cornea. Reapply as needed.

5.1.3. Recovery:

    5.1.3.1. Turn off the isoflurane vaporizer but keep the animal on oxygen.

    5.1.3.2. Transfer animal to their cage once it begins to move and allow to recover fully (sternal position).

5.2. Ketamine/Xylazine/Acepromazine anesthesia:

    5.2.1. Injectable anesthetic dose can vary with the sex, the age, the strain, and the body condition of the animal.

    5.2.2. Contact your veterinarian for advice on the appropriate dose prior to use.

    5.2.3. Anesthetic dose: Ketamine 50mg/kg, Xylazine 5mg/kg, Acepromazine 1mg/kg.

    5.2.4. To prepare cocktail, in a sterile vial or bottle with a rubber stopper, mix:

- 5mL of Ketamine (100mg/mL)
- 2.5mL Xylazine (20mg/mL)
- 1mL Acepromazine (10mg/mL)
- 1.5mL of sterile isotonic saline or sterile water for injection.

    5.2.5. Label as "Rodent Cocktail" and indicate expiration date on vial or bottle (maximum 6 months).

    5.2.6. Mixed cocktail should be protected from light and stored in a cool place.

    5.2.7. Administer 0.1mL/100g body weight intra-muscularly or intra-peritoneally.

    5.2.8. Apply ophthalmic ointment (natural tears) to both eyes to prevent dryness and damage to the cornea. Reapply as needed.

    5.2.9. Duration of anesthesia is approximately 30 minutes.

    5.2.10. After 30 minutes, a half dose may be administered as needed.

    5.2.11. For recovery, provide a heat source and monitor every 5 minutes until recovery (sternal position).

SOP REVISION HISTORY

DATE	PREVIOUS VERSION	NEW VERSION
2016.01.15	(NO TEXT)	**Addition of Rodent Procedure Log (annex)**
2016.03.16	5.2.1 and 5.2.2 (NO TEXT)	**5.2.1 Injectable anesthetic dose can vary with the sex, the age, the strain, and the body condition of the animal.** **5.2.2 Contact your veterinarian for advice on the appropriate dose prior to use.**

Comparative Medicine & Animal Resources Centre

Written by: Jim Gourdon, Anna Jimenez

Revised on (yy-mm-dd): 14-04-14

Revision # 03

Page 2 of 2

SOP 113.03- Guinea Pig Anesthesia

Effective date (yy-mm-dd): 09-12-17

Rodent Procedure Log

Comparative Medicine Animal Resources Centre

McGill

Investigator:	Protocol:
Procedure:	Performed by:

Instructions: complete this log for rodent procedures requiring anesthesia, analgesia or post-procedure care (ex. surgeries, experimental infection). Keep the log in the housing room while active and in your files for 3 years for future review by the Quality Assistant and/or the FACC.

ANALGESIA

☐ carprofen: mouse: 20mg/kg, rat: 5-10 mg/kg, SC, every 24 hrs

☐ buprenorphine: mouse: 0.1mg/kg SC or IP every 4-8 hrs;
 rat: 0.05mg/kg, SC or IP, every 8-12 hrs

☐ lidocaine/bupivacaine (local analgesic)

☐ other:_____

ANESTHESIA

☐ isoflurane 2-2.5%

☐ ketamine/xylazine/acepromazine*:
 mouse: 100 mg/kg (K)- 10 mg/kg (X)- 3 mg/kg (A) IP
 rat: 50 mg/kg (K)- 5 mg/kg (X)- 1 mg/kg (A); IP or IM

☐ other:_____

OTHER AGENTS ADMINISTERED

☐_____

☐_____

☐_____

	Animal ID	Date	Anesthesia		Analgesia		Other _____		Heat Source Provided		Recovery time	Comments/observations	Initials
			dose	time	dose	time	dose	time	procedure	recovery			
1									☐	☐			
2									☐	☐			
3									☐	☐			
4									☐	☐			
5									☐	☐			
6									☐	☐			
7									☐	☐			
8									☐	☐			
9									☐	☐			
10									☐	☐			
11									☐	☐			
12									☐	☐			
13									☐	☐			
14									☐	☐			

Comments/footnotes:

*Dose can vary with the sex, the age, the strain, and the body condition of the animal.

Revised: 2014-01-06

Rodent Procedure Log

ANALGESIA

☐ carprofen: mouse: 20mg/kg, rat: 5-10 mg/kg, SC, every 24 hrs

☐ buprenorphine: mouse: 0.1mg/kg SC or IP every 4-8 hrs; rat: 0.05mg/kg, SC or IP, every 8-12 hrs

☐ OTHER_____

Initial the appropriate boxes when completed

	Animal ID	Date	Analgesia			SC fluids			Wet food			Time			Remove Sutures (Day 7-10)
			Day 1	Day 2	Day 3	Day 1	Day 2	Day 3	Day 1	Day 2	Day 3	Day 1	Day 2	Day 3	
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															

Comments/footnotes: