1. PURPOSE

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

2. RESPONSIBILITY

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

3. INTRODUCTION

3.1. Perform a thorough physical exam and obtain an accurate weight.
3.2. Withhold food (not) water for a short period of time (1–6 hours).
3.3. Rabbits can be anesthetized with either inhalant gas or injectable drugs. The use of inhalant gases is the preferred method of anesthesia whenever possible.

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. Isoflurane
4.5. Butorphanol (10mg/mL) *Controlled Drug
4.6. Ketamine (100mg/mL) *Controlled Drug
4.7. Xylazine (20mg/mL)
4.8. Acepromazine (10mg/mL)

5. PROCEDURES

5.1. Sedation:
   5.1.1. Used for short periods of restraint for non-painful procedures (e.g. blood collection).
   5.1.2. Dose: Butorphanol 0.5 mg/kg, Acepromazine 0.75mg/kg.
   5.1.3. Both drugs can be mixed in the same syringe.
   5.1.4. Inject intramuscularly.
   5.1.5. Animal will be adequately sedated after 15 minutes.
   5.1.6. Duration of sedation is approximately 1 hour.

5.2. Injectable anesthesia:
   5.2.1. Can be used alone for short, non-invasive procedures.
   5.2.2. Used for induction prior to use of Isoflurane anesthesia for smooth and rapid induction and to facilitate intubation.
   5.2.3. Ketamine-Xylazine-Acepromazine anesthesia
      5.2.3.1. Inject acepromazine and xylazine intramuscularly. Both drugs can be mixed in the same syringe. Dose of acepromazine: 0.75mg/kg. Dose of xylazine: 5mg/kg.
5.2.3.2. Inject ketamine intramuscularly in a different muscle. Dose: 20-35mg/kg.
5.2.3.3. Apply ophthalmic ointment (natural tears) to both eyes to prevent dryness and damage to the cornea.

5.3. Isoflurane anesthesia:

5.3.1. Induction (if injectable anesthetics not previously administered):
   5.3.1.1. Place the animal in the induction chamber.
   5.3.1.2. Adjust the oxygen flowmeter to 0.8 to 1.5 L/min.
   5.3.1.3. Adjust the isoflurane vaporizer to 3% to 5%.

5.3.2. Maintenance:
   5.3.2.1. Use a tight-fitting mask connected to the Bain circuit or intubate the rabbit.
   5.3.2.2. Adjust the flowmeter to 400 to 800mL/min.
   5.3.2.3. Adjust the isoflurane vaporizer to 1.5 to 3%.
   5.3.2.4. Apply ophthalmic ointment (natural tears) to both eyes to prevent dryness and damage to the cornea.

5.3.3. Recovery:
   5.3.3.1. Turn off the isoflurane vaporizer but keep the animal on oxygen.
   5.3.3.2. Transfer animal to their cage once it begins to move and allow to recover fully.

**SOP REVISION HISTORY**

<table>
<thead>
<tr>
<th>DATE</th>
<th>PREVIOUS VERSION</th>
<th>NEW VERSION</th>
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<tbody>
<tr>
<td>2017.09.26</td>
<td>4.5. Buprenorphine (0.3 mg/mL) *Controlled Drug</td>
<td>4.5. <strong>Buprenorphine Butorphanol (0.4 10mg/mL)</strong> *Controlled Drug</td>
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<tr>
<td>2017.09.26</td>
<td>5.1.2 Dose: Buprenorphine 0.2 mg/kg, Acepromazine 1mg/kg.</td>
<td>5.1.2 Dose: <strong>Buprenorphine Butorphanol 0.2 0.5mg/kg, Acepromazine 10.75mg/kg.</strong></td>
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