

Materials

Drugs to use:

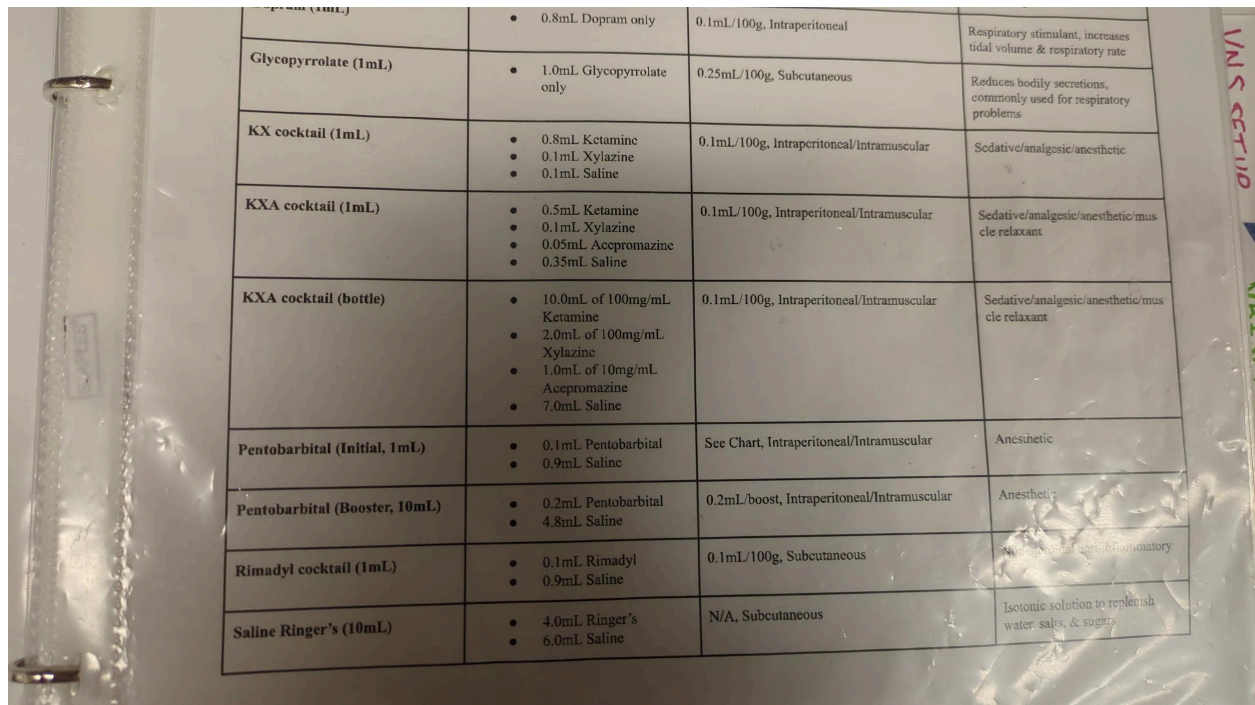
Ketamine xylazine cocktail - LOCKER

.8 mL ketamine, .1 mL xylazine, .1 mL saline

Use bubble to mix by having it go up and down syringe 15 times

LOG it in the binder!!!

Label the cocktail, it's a controlled substance



| | | | |
|-------------------------------|---|--|---|
| | <ul style="list-style-type: none">0.8mL Dopram only | 0.1mL/100g, Intraperitoneal | Respiratory stimulant, increases tidal volume & respiratory rate |
| Glycopyrrolate (1mL) | <ul style="list-style-type: none">1.0mL Glycopyrrolate only | 0.25mL/100g, Subcutaneous | Reduces bodily secretions, commonly used for respiratory problems |
| KX cocktail (1mL) | <ul style="list-style-type: none">0.8mL Ketamine0.1mL Xylazine0.1mL Saline | 0.1mL/100g, Intraperitoneal/Intramuscular | Sedative/analgesic/anesthetic |
| KXA cocktail (1mL) | <ul style="list-style-type: none">0.5mL Ketamine0.1mL Xylazine0.05mL Acepromazine0.35mL Saline | 0.1mL/100g, Intraperitoneal/Intramuscular | Sedative/analgesic/anesthetic/muscle relaxant |
| KXA cocktail (bottle) | <ul style="list-style-type: none">10.0mL of 100mg/mL Ketamine2.0mL of 100mg/mL Xylazine1.0mL of 10mg/mL Acepromazine7.0mL Saline | 0.1mL/100g, Intraperitoneal/Intramuscular | Sedative/analgesic/anesthetic/muscle relaxant |
| Pentobarbital (Initial, 1mL) | <ul style="list-style-type: none">0.1mL Pentobarbital0.9mL Saline | See Chart, Intraperitoneal/Intramuscular | Anesthetic |
| Pentobarbital (Booster, 10mL) | <ul style="list-style-type: none">0.2mL Pentobarbital4.8mL Saline | 0.2mL/boost, Intraperitoneal/Intramuscular | Anesthetic |
| Rimadyl cocktail (1mL) | <ul style="list-style-type: none">0.1mL Rimadyl0.9mL Saline | 0.1mL/100g, Subcutaneous | Non-steroidal anti-inflammatory |
| Saline Ringer's (10mL) | <ul style="list-style-type: none">4.0mL Ringer's6.0mL Saline | N/A, Subcutaneous | Isotonic solution to replenish water, salts, & sugars |

Lidocaine

Dopram- given when SPO2 low

Atropine dexomethazone -given when airways are secreting mucus - clogged

Supplies:

Heating pad, pulse ox, thermal probe, eye gel, drugs, tools (cuffs, EMC electrodes), bio hazard bag

Scalpel

SOP

Put down the rat

Shave the rat down

Get the rat on the heating pad as quick as possible

Wait and be patient to get good stable readings.

Attach SPO2 to left hind paw

For temperature measurement probe, insert probe into lubricant, place probe inside rat, secure with tape on the tail

Log readings.

Put rat into stereotax

Make sure head does not move

Monitor vitals;

Heart rate and SPO2 should be inverse to each other.

If both go up, or both go down, be alert, something may be wrong

Place eye gel on the eyes.

Apply alcohol to incision sites, typically also use iodine but alcohol by itself is fine.

Now that we applied eye gel and sanitized, we are now applying lidocaine SubQ.

There should be a bubble formed at the site.

Sharps your needle following usage.

Form a laceration on the skull.

Headcaps steps

Bone drill (see pic)

Before any major big changes, make sure vitals look stable and consistent.

Tibial:

Tie leg back with 3 strips of tape onto muscle retractor

Have the tape on the top side of the foot and tape it around.

Make sure it's secure in multiple directions.

(Picture)

Make sure to check vitals to be stable before moving on.

Make leg incision

Cut through skin

Cut through first layer of muscle

Then later of fat

Then second layer of muscle

Tibial is around the surface of the second layer

Use blunt dissection to get past layers

Cleaned up with AI:

Here is a cleaned-up and formatted **Standard Operating Procedure (SOP)** for **H-reflex Rat Surgery** based on your notes:

Standard Operating Procedure (SOP): H-Reflex Rat Surgery

1. Materials and Equipment

Drugs

- **Ketamine/Xylazine Cocktail** (Controlled Substance – must log use)
 - Composition:
 - 0.8 mL Ketamine
 - 0.1 mL Xylazine
 - 0.1 mL Saline
 - Preparation:
 - Mix using a “bubble” method: pull solution up and down in the syringe 15 times.
 - Label the syringe clearly.
 - Log usage in the controlled substances binder.
- **Lidocaine** – for subcutaneous local anesthesia at incision sites.
- **Dopram** – administer if SpO2 levels drop.
- **Atropine/Dexamethasone** – administer if airway secretions become excessive or blocked.

Supplies

- Heating pad
 - Pulse oximeter (SpO2 sensor)
 - Thermal temperature probe
 - Eye lubrication gel
 - Surgical tools: scalpel, cuffs, EMC electrodes, muscle retractors, blunt dissection tools
 - Biohazard bag
 - Sterile alcohol and/or iodine
 - Sterile tape
-

2. Pre-Surgical Preparation

1. Sedation & Anesthesia

- Euthanize the rat using the ketamine/xylazine cocktail.
- Apply eye gel to prevent corneal drying.

2. Shaving

- Shave the necessary surgical regions immediately after sedation.

3. Positioning

- Transfer the rat to a heating pad as soon as possible.
- Attach the SpO2 sensor to the **left hind paw**.
- Insert the **thermal probe** (after lubricating) rectally and secure it using tape on the tail.

4. Vitals Monitoring

- Continuously monitor heart rate and SpO2:

- These should be **inversely related**.
 - If both rise or fall together, this may indicate a problem. Be alert.
 - Log all vitals in the experiment record.
-

3. Headcap Procedure

1. Fixation

- Place the rat into the stereotaxic frame.
- Ensure the head is **completely stable** and immobilized.

2. Incision and Prep

- Clean incision area with alcohol (iodine optional).
- Inject **lidocaine subcutaneously** around the incision site until a visible bubble forms.
- Dispose of the needle in a sharps container.

3. Laceration and Drilling

- Create a laceration over the skull.
- Follow established protocol for **headcap construction** and **bone drilling** (refer to provided images or training materials).

4. Vitals Recheck

- Ensure **stable vitals** before continuing to further steps.
-

4. Tibial Nerve Exposure

1. Leg Preparation

- Secure the leg using **3 strips of tape** on the muscle retractor:
 - Tape must be on the **top side of the foot** and secured in multiple directions to prevent shifting.

2. Incision

- Make a longitudinal skin incision over the hindlimb.
- Dissect through the following layers:
 - First muscle layer
 - Fat
 - Second muscle layer
- The **tibial nerve** lies superficial to the second muscle layer.
- Use **blunt dissection** techniques to avoid nerve damage.

3. Vitals Check

- Confirm vitals are **stable** before any nerve manipulation or further dissection.

5. Notes and Reminders

- **Always be patient:** Good, stable H-reflex readings require time.
- **Sharps disposal** is mandatory after each needle use.
- **Controlled substances** must be clearly labeled and logged.
- Always refer to reference images and visual guides provided in training or SOP appendices.