



Rat Analgesia

Preparation:

- All solutions for parenteral use should be prepared aseptically using pharmaceutical grade sterile saline in a sterile vial/or red top tube
- The solution must be labeled with the active drug, diluent, final concentration (mg/mL), expiration date, and initials
 - Dilutions should be examined prior to use and disposed of if a precipitate forms regardless of the expiration date

Procedure:

- Analgesia should be provided pre-emptively whenever possible
 - Water bottle dosing should be initiated 24 prior to procedure or
 - Direct oral dosing/injectable analgesia given at time of anesthesia induction or during recovery
- NSAID (COX2 selective provides for analgesia, antipyretic, and anti-inflammatory effects)
 - Carprofen (stock needs to be refrigerated, diluted drug can remain at room temperature for 28 days)
 - Injectable – 5mg/kg SC or IP, BID to SID
 - 0.2mL Carprofen (50 mg/mL) + 3.8 mL sterile saline = 2.5 mg/mL solution.
 - Clear H2O gel formulation
 - 1 -2 oz cup/2 rats provided 24-48 hours in advance of surgery
 - Provides 5mg/kg/day
 - Flip or replace as needed (every 2-3 days)
 - Meloxicam (1.5 mg/mL oral suspension or 5 mg/mL injectable solution)
 - Oral Dosing – 2 mg/kg, PO, SID
 - Injectable – 2 mg/kg, SC, SID
 - Bacon Flavored Tablet 0.25mg/tablet (from bio-serve)
 - Give 1 tablet/rat/day
 - Provides 0.8 mg/kg for a 300g rat
- NSAID (non-selective, propionate acid derivatives provide for analgesia, antipyretic, and anti-inflammatory effects)
 - Ibuprofen (Children's Motrin Suspension – 100 mg/5mL)
 - Water Bottle:
 - 5 mL Children's Motrin + 500 mL water = 0.2 mg/mL solution, changed twice weekly
 - Dose of 20 mg/kg assuming a 300g rat drinking 30 ml/day
- Opioid
 - Buprenorphine
 - Injectable – 0.05 mg/kg SC or IP, BID
 - Dilution: add 0.1 mL of Buprenex + 0.9 mL of sterile saline = 0.03 mg/mL solution.

Supplies:

1. Sterile Vial/Red Top Tube
2. Miscellaneous supplies as needed (22-25ga. Needles, 1-10mL syringes)
3. Alcohol swabs
4. 0.9% Sterile Saline
5. Rat water bottle filled with 500mL RO water
6. Children's Motrin (Ibuprofen 100mg/5mL)
7. Rimadyl (Carprofen 50mg/mL)
8. Metacam Oral Formulation (meloxicam 1.5mg/mL)
9. Metacam Injectable (meloxicam 5mg/ml)
10. Meloxicam Tablets 0.25mg/tablet from Bio-Serve)
11. Carprofen Clear H2O gel from Cincinnati labs



Drug	100g	250g	500g
Meloxicam – INJ (5 mg/mL)	Use inj or dilute	0.1 mL	0.2 mL
Meloxicam – Oral (1.5 mg/mL)	0.1	0.3 mL	0.7 mL
Ibuprofen – Oral (100 mg/ 5mL)	0.1 mL	0.2 mL	0.4 mL
Carprofen – INJ (Diluted 2.5 mg/mL)	0.2 mL	0.5 mL	1.0 mL

Drug	150-200g	210-260g	270-320 g	330-380g	390-430g	450-500g
Buprenorphine – INJ (Diluted 0.03 mg/mL)	0.3	0.4	0.5	0.6	0.7	0.8

Volumes rounded up to nearest 1/10th of mL

REFERENCES:

- IACUC Policy on the Use of Pharmaceutical and Non-Pharmaceutical Compounds
<http://orpp.osu.edu/files/2013/07/045-01-Use-of-Pharmaceutical-and-Non-Pharmaceutical-Compounds.pdf>
- Formulary for Laboratory Animals- third edition, Hawk et al, 2005
- Guidelines for the Assessment and Management of Pain in Rodents and Rabbits. ACLAM position statement.
- Vet Guideline 13-004 Controlled Substances
- Ferrets, Rabbits, and Rodents Clinical Medicine and Surgery, 2nd edition, Quesenberry and Carpenter, 2004*