**RATS (Rattus norwegicus)**

DRUG DOSE (MG/KG) ROUTE

PRE-ANESTHETIC MEDICATIONS

Atropine sulfate 0.02-0.05 IM, IV, SQ

Glycopyrollate 0.02 IM, SC

SEDATIVES/TRANQUILIZERS Acepromazine 1-2 IM, SQ Diazepam (Valium®) 2.5-4 IM, IP Xylazine (Rompun®) 1-3 IM

Ketamine 20-22 IM, IP

INJECTABLE ANESTHETICS

Ketamine 75-100 or 25 IP or IV

Pentobarbital (acute) 40-50 IV or IP

ANESTHETIC COMBINATIONS Ketamine - Xylazine 45-90 + 4.5-9 (see dilution note)

(Combine: 1.0 ml of 100 mg/ml Xylazine and 10 ml of 100 mg/ml Ketamine)

Administer 0.05-0.1 ml/100 gm BW IM, IP

Ketamine & Medazolam 80-100 + 8-10 IP

Ketamine & Medetomidine 50-75 + 0.5 IP

INHALATION ANESTHETICS Induction Maintenance Isoflurane up to 5% 2-3% (Induce with chamber)

LOCAL ANESTHETICS

Lidocaine HCL (dilute to 0.5%) 7 max SC intra-incisional

Bupivacaine (dilute to 0.25%) 8 max SC intra-incisional

ANALGESICS Buprenorphine (Buprenex®) 0.01-0.05 SQ q 8-12 h (see dilution below)

Carprofen 4-5 SQ sid

Meloxicam 2 PO, IM, SC; sid – bid

Ketoprofen 2-5 SQ sid

REVERSAL AGENTS (for Xylazine or Medetomidine)

Atipamezole 0.1-1.0 SQ or IP (for Xylazine or Medetomidine)

Yohimbine 1.0-2.0 SQ or IP (for Xylazine)

NOT RECOMMENDED Chlorpromazine, Chloral hydrate, Chloroform, Tribromoethanol

BUPRENORHINE USE IN RATS

Trade name: Buprenex®

How Supplied: 0.3 mg/ml in 1 ml ampules.

Rat dose: 0.01 - 0.05 mg/kg

Dilution, Storage, and Administration

1) dilute Buprenex® 1:5 in sterile saline or water (1cc Buprenex® solution plus 4 cc sterile water or saline)[little vials of sterile water or saline for injection are available from the ARF - these are appropriate for this use]

2) Store diluted Buprenex® in sterile vial or sterile vacutainer and label appropriately (name, strength, exp. date, lot number.) **NOTE: Federal regulations require that any vial or container used for keeping drugs is labeled with 1) Drug Name, 2) Strength, 3) Manufacturing Lot Number, and 4) the Expiration Date**

3) Store in locked cabinet

4) Administer at rate of 0.05 ml/ 100 gm BW (i.e., 0.1ml for 200 gm rat) subcutaneously. This provides an analgesic dosage of 0.03 mg/kg BW - an average analgesic dosage appropriate in most post-surgical situations.

5) Best timing of administration is BEFORE incision, i.e., during anesthesia induction.

6) Analgesic activity is present up to 8-12 hours.

7) Rat should be re-checked for signs of pain or discomfort 8-12 hours after initial dose to determine need for additional analgesic.

Notes:

* Buprenorphine is an opioid analgesic with excellent analgesic activity.
* Respiratory depression is not usually a problem with this opioid administered at analgesic levels.
* Opioid analgesics may reduce the quantity of primary anesthetic administered.
* Multiple doses of Buprenorphine in rodents have occasionally been associated with a tendency of the rodent to ingest bedding and subsequently exhibit decreased appetite for food. The reason for this is as yet unexplained. For this reason, no more than three sequential doses are recommended. If the mouse has not responded to the analgesic by this time, it is not likely to do so, and euthanasia should be considered.