

# Hamster Formulary

Dilution of injected drugs allows more precise dosing, but may shorten the shelf life of the compound. Aseptic technique must be observed as mixtures (cocktails) are prepared; this includes using sterile vials, syringes and needles, wiping the cover of each vial or bottle with 70% ethanol or isopropanol, diluting with Sterile Water for Injection or sterile PBS (phosphate buffered saline) and not reusing needles used for dilution or administration. As with undiluted drugs, only new, sterile needles must be used for withdrawing aliquots from the cocktail and for administering injections. Diluted drugs must be labeled and dated, then discarded after 6 months, or at the expiration date of any of the components, whichever comes first.

The doses listed below apply to Djungarian or Siberian Hamster, *Phodopus sungorus*.

**Inhalation anesthetics** – Best administered using a precision vaporizer but may also be administered via nose cone containing small amount of anesthetic. Without a vaporizer the dose of isoflurane is very high, and cannot be titrated. Diluting the isoflurane in mineral oil is recommended to lessen the dose of isoflurane the animal will receive when a vaporizer is not used. For further information, please refer to the [Guidelines for the use of Isoflurane anesthesia without a vaporizer for rodents](#). Survival surgery requires concurrent pre-emptive analgesia.

DRUG NAME	DOSE & ROUTE	FREQUENCY and EXPECTED DURATION	NOTES
Isoflurane or Sevoflurane	1-3% inhalant to effect (up to 5% for induction).	Whenever general anesthesia is required	Induction is commonly performed in an induction box/chamber. Survival surgery requires concurrent pre-emptive analgesia.
Carbon dioxide	Inhalant to effect (cannot determine percentage)	Once, at time of euthanasia	May be used for fast terminal procedure such as cardiac blood collection followed by euthanasia.

## **Injectable anesthetics-**

**Ketamine combinations** – These dose combinations vary depending upon the type of procedure and the age/strain of the animal. A higher ketamine dose with lower xylazine dose is

often used for very young/very old or critical patients. See cocktail recipe at the end of table.

DRUG NAME	DOSE & ROUTE	FREQUENCY and EXPECTED DURATION	NOTES
Ketamine-Xylazine	(K) 50-150 mg/kg + (X) 5-30 mg/kg  All IP in same syringe.	First injection will last 20-40 minutes with supplemental boosters of ketamine only, as needed.	Provides surgical level anesthesia. If re-dosing, administer ketamine only at ¼ to ½ the original dose.
<b>Opioid analgesia</b>			
DRUG NAME	DOSE & ROUTE	FREQUENCY and EXPECTED DURATION	NOTES
Buprenorphine	0.05 mg/kg SC	Used pre-operatively for preemptive analgesia and post-operatively every 8-12 hours	For major procedures, requires more frequent dosing than 12-hour intervals. Consider multi-modal analgesia with an NSAID

### Reversal agents for opioids

DRUG NAME	DOSE & ROUTE	FREQUENCY and EXPECTED DURATION	NOTES
Naloxone	0.01-0.1 mg/kg IP	Once as needed to reverse respiratory depression	Note that reversal will also remove the analgesic effect of the opioid

**Non-steroidal anti-inflammatory drugs (NSAID) analgesia-** Note that prolonged use may cause renal, gastrointestinal or other problems

DRUG NAME	DOSE & ROUTE	FREQUENCY and EXPECTED DURATION	NOTES
Meloxicam (Metacam®)	0.1-0.2 mg/kg SC, PO	Used pre-operatively for pre-emptive analgesia and post-operatively every 24 hours	Depending on the procedure, it may be used as sole analgesic, or as multi-modal analgesia with buprenorphine.