

Laboratory Animal Formulary



IM	= intramuscular	PO	= by mouth
IP	= intraperitoneal	SC	= subcutaneous
IV	= intravenous		

MICE

ANALGESICS

Pain: **Buprenorphine:** 0.05-0.1 mg/kg SC two to three times daily (1 ml of 0.3 mg/ml in 4 ml NaCl = 0.06 mg/ml)

Buprenorphine SR: 1-5 mg/kg (2.5 mg/kg common) SR (sustained release) formula SC ONLY every 3 days

Medetomidine CRI (constant rate infusion): 0.05mg/kg SC, followed by 0.1 mg/kg/hr (used for imaging)

Pain due to inflammation:

Carprofen: 5 mg/kg SC, IV, IM, IP once daily (1 ml of 50 mg/ml in 9 ml NaCl = 0.5 mg/ml, alternatively, 0.05 ml (50 µl) of carprofen with 5 ml sterile water)

Ibuprofen: Use name-brand Advil®. Add 200 mg capsule to 200 mL water and shake vigorously. Light sensitive, no acidified water, change every 5 days

Meloxicam: 2 mg/kg orally or SC once daily

ANESTHETICS

Atipamezole: To reverse xylazine or medetomidine 0.1-1 mg/kg IM, IP, IV, SC

Bupivacaine: 2 mg/kg, onset 5 minutes, duration 2-4 hours (1-3 drops).

Ketamine: 50-100 mg/kg IM, IP; 50 mg/kg IV; 200 mg/kg with 5 mg/kg diazepam IM, IP; 100 mg/kg with 5-15 mg/kg xylazine IM, IP

Refer to the following NIH guidelines for additional information on ketamine mixtures:

<https://ncifrederick.cancer.gov/lasp/acuc/bethesda/Media/Documents/KetamineCombinations.pdf>

Lidocaine: Percutaneously: 1-3 mg/kg (**do not exceed 4mg/kg**), onset 1 minute, duration 30-60 minutes

Pentobarbital: 40-60 mg/kg anesthetic, 100 mg/kg euthanasia IV, IP

ANTIBIOTICS

Amoxicillin: 0.25 mg/ml in water. Add 1 ml re-suspended 50 mg/ml (Amoxil) solution to 199 ml water. Do not acidify water.

Doxycycline: 2.5-5 mg/kg PO twice daily. **Do not use in young or pregnant animals**

Enrofloxacin: 85 mg/kg (0.5 mg/ml in drinking water (62.5 mg enrofloxacin with 125 ml water)), change every 3-5 days, or when cloudy, can be mixed with juice.

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SEDATIVE/ANALGESIC

Dexmedetomidine: 0.25-1.0 mg/kg IP (0.5 mg/kg most common)

Xylazine: 5-10 mg/kg

TRANQUILIZERS

Acepromazine: 0.25-0.5 mg/kg IM

RATS

ANALGESICS

Pain: **Buprenorphine:** 0.01-0.05 mg/kg SC two to three times daily; 0.1-0.25 mg/kg PO two to three times daily (1 ml of 0.3 mg/ml in 4 ml NaCl = 0.06 mg/ml);

Buprenorphine SR: 1-5 mg/kg (1.2 mg/kg common higher may cause dysphoria or pica) SR (sustained release) formula SC ONLY every 3 days

Pain due to inflammation:

Carprofen: 5 mg/kg SC, IV, IM, IP once daily (1 ml of 50 mg/ml in 9 ml NaCl = 0.5 mg/ml, alternatively, 0.05 ml (50 µl) of carprofen with 5 ml sterile water)

Ibuprofen: Use name-brand Advil[®]. Add 200 mg capsule to 200 mL water and shake vigorously. Light sensitive, no acidified water, change every 5 days.

Meloxicam: 2 mg/kg PO, SC once daily

ANESTHETICS

Atipamezole: To reverse xylazine or medetomidine 0.1-1 mg/kg IM, IP, IV, SC

Bupivacaine: 2 mg/kg, onset 5 minutes, duration 2-4 hours

Ketamine: 50-100 mg/kg IM, IP; 50 mg/kg IV; 40-60 mg/kg with 5-10 mg/kg diazepam IM, IP; 40-75 mg/kg with 5-15 mg/kg xylazine IM, IP

Refer to the following NIH guidelines for additional information on ketamine mixtures:

<https://ncifrederick.cancer.gov/lasp/acuc/bethesda/Media/Documents/KetamineCombinations.pdf>

Lidocaine: Percutaneously: 1-3 mg/kg (**do not exceed 4mg/kg**), onset 1 minute, duration 30-60 minutes

Pentobarbital: 40-60 mg/kg anesthetic, 100mg/kg euthanasia IV, IP

Propofol: 10 mg/kg IV

ANTIBIOTICS

Amoxicillin: 0.25 mg/ml in water. Add 1 ml re-suspended 50 mg/mL (Amoxil) solution to 199 ml water. Do not acidify water.

Doxycycline: 2.5-5 mg/kg PO twice a day. **Do not use in young or pregnant animals**

Enrofloxacin: 85 mg/kg (0.5 mg/ml in drinking water (62.5 mg enrofloxacin with 125 ml water)), change every 3-5 days, or when cloudy, can be mixed with juice.

Trimethoprim/sulfamethoxazole

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ANTIDOTES

Yohimbine: 0.2 mg/kg IP as needed (to reverse xylazine or medetomidine)

ANTI-HISTAMINES

Diphenhydramine: 10 mg/kg SC

ANTI-INFLAMMATORY/IMMUNOSUPPRESSANTS

Dexamethasone: 0.05-0.2 mg/kg IM (anti-inflammatory)

Prednisone: 0.5-2.2 mg/kg IM, SC

GUINEA PIGS

ANALGESICS

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ANTIINFLAMMATORY/IMMUNOSUPPRESSANTS

Dexamethasone: 0.05-0.2 mg/kg IM (ET286-

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TRANQUILIZERS

Acepromazine: 0.25-0.5 mg/kg IM

VITAMINS

Vitamin C: 30 mg/kg IM, PO, once daily; 200 mg/L of water

BENZODIAZEPINE ANTAGONIST

Flumazenil: 0.01 mg/kg IV, may have to repeat ($T^{1/2}$ = 1 hr)

DIURETIC

Furosemide: 5-10 mg/kg twice a day

GASTRIC ACID/ULCERS

Cimetidine: 5-10 mg/kg PO, IM, SC two, three or four times a day

OPIOID ANTAGONIST

Naloxone: 0.01-0.1 mg/kg IM, IP, IV

PROKINETIC

Cisapride: 0.1-0.5 mg/kg PO twice a day

RESPIRATORY STIMULANT

Doxapram: 5-10 mg/kg IV, IP

TRANQUILIZERS

Acepromazine: 0.25-0.5 mg/kg IM

GERBILS

ANALGESICS

Buprenorphine: 0.02-0.2 mg/kg SC twice a day

Pain due to incision:

Meloxicam: 0.2 mg/kg PO, SC once a day

ANESTHETICS

Atipamezole: To reverse xylazine or medetomidine 0.1-1 mg/kg IM, IP, IV, SC

Bupivacaine: 2 mg/kg, onset 5 minutes, duration 2-4 hours

Ketamine: 100 mg/kg IM; 50 mg/kg with 5 mg/kg diazepam IM

Refer to the following NIH guidelines for additional information on ketamine mixtures:

<https://ncifrederick.cancer.gov/lasp/acuc/bethesda/Media/Documents/KetamineCombinations.pdf>

Lidocaine: Percutaneously: 1-3 mg/kg (**do not exceed 4 mg/kg**), onset 1 minute, duration 30-60 minutes

Pentobarbital: 70-80 mg/kg IP

Telazol: 10-30 mg/kg IP for immobilization/anesthesia

ANTIBIOTICS

Doxycycline: 2.5-5 mg/kg PO twice a day. **Do not use in young or pregnant animals**

Enrofloxacin: 2.5-5 mg/kg IM, PO, SC twice a day

Trimethoprim/sulfamethoxazole: 15-30 mg/kg PO twice a day; 30 mg/kg IM twice a day

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Meloxiazole

BENZODIAZEPINE ANTAGONIST

Flumazenil: 0.01 mg/kg IV, may have to repeat ($T^{1/2} = 1$ hr)

DIURETIC

Furosemide: 5-10 mg/kg twice a day

GASTRIC ACID/ULCERS

Cimetidine: 5-10 mg/kg PO, IM, SC two, three or four times a day

OPIOID ANTAGONIST

Naloxone: 0.01-0.1 mg/kg IM, IP, IV

PROKINETIC

Cisapride: 0.1-0.5 mg/kg PO twice a day

RESPIRATORY STIMULANT

Doxapram: 5-10 mg/kg IV, IP

BIRDS

ANALGESICS

Pain: Buprenorphine: 0.01-0.05 mg/kg IM

Pain due to inflammation:

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ANTIPARASITICS

Ivermectin: 200-400 mcg/kg PO, topically

Metronidazole: 50 mg/kg PO once a day for 5 days

Pyrantel pamoate: 4.5 mg/kg PO once, repeat in 14 days

BENZODIAZEPINE ANTAGONIST

Flumazenil: 0.01 mg/kg IV (may have to repeat as $T^{1/2}$ is 1 hour)

DIURETIC

Mannitol: 0.5-1.5 g/kg IV over 20 minutes, repeat every 4-6 hours

PROKINETIC

Cisapride: 0.5-1.5

ZEBRAFISH (Ref: the University of North Carolina at Chapel Hill)

ANALGESICS