

Recommended Anesthetic and Analgesic Doses for Common Laboratory animals

References: UCSF Office of Ethics and Compliance (Nov.2015, Jan2018), WUSHS - IACUC

Notes to the users : The dosages/dose volume can be used as reference but further advice from SEMC/NLARF veterinarian can be sought to ensure that the dose to be used including method of administration will be appropriate to the type and degree of procedure/s.

Species : Mice

Drug	Type	Dose range (mg/kg BW)	Route
Isoflurane	Anesthesia agent	1 -3 % maintenance, up to 5% for induction	Inhalant
Ketamine + Xylazine	Anesthesia agent	80-100 Ket. + 10-20 Xyl.	Intraperitoneal
Ketamine + Xylazine + Acepromazine	Anesthesia agent	70-100 Ket. + 10-20 Xyl. + 2-3 Ace.	Intraperitoneal
Ketamine + Dexmedetomidine	Anesthesia agent	50-75 Ket. + 0.25-0.50 Dex.	Intraperitoneal
Ketamine + Midazolam	Anesthesia agent	80-100 Ket. + 4-5 Mid.	Intraperitoneal
Bupivacaine	Local analgesia	Dilute to 0.25%, do not exceed 8 mg/kg total dose	Subcutaneous Intra-incisional
Lidocaine	Local analgesia	Dilute to 0.5%, do not exceed 7 mg/kg total dose	Subcutaneous Intra-incisional
Buprenorphine	Analgesia agent	0.05 – 0.1	Subcutaneous Intraperitoneal
Meloxicam	Analgesia agent	5 – 10	Subcutaneous Intraperitoneal Oral
Carprofen	Analgesia agent	2 – 4	Subcutaneous Intraperitoneal Oral
Ketoprofen	Analgesia agent	2 – 5	Subcutaneous Intraperitoneal Oral

Species : Rat

Drug	Type	Dose range (mg/kg BW)	Route
Isoflurane	Anesthesia agent	1 -3 % maintenance, up to 5% for induction	Inhalant
Ketamine + Xylazine	Anesthesia agent	40-80 Ket. + 5-10 Xyl.	Intraperitoneal
Ketamine + Xylazine + Acepromazine	Anesthesia agent	40-80 Ket. + 8 Xyl. + 4 Ace.	Intraperitoneal
Ketamine + Dexmedetomidine	Anesthesia agent	60-75 ket. + 0.25-0.5 Dex.	Intraperitoneal
Bupivacaine	Local analgesia	Dilute to 0.25%, do not exceed 8 mg/kg total dose	Subcutaneous Intra-incisional
Lidocaine	Local analgesia	Dilute to 0.5%, do not exceed 7 mg/kg total dose	Subcutaneous Intra-incisional
Buprenorphine	Analgesia agent	0.01 – 0.05	Subcutaneous Intraperitoneal
Meloxicam	Analgesia agent	2.0	Subcutaneous Intraperitoneal Oral
Carprofen	Analgesia agent	5.0	Subcutaneous Intraperitoneal Oral
Ketoprofen	Analgesia agent	2 – 5	Subcutaneous or Intraperitoneal or oral

Species : Rabbits

Drug	Type	Dose range (mg/kg BW)	Route
Isoflurane	Anesthesia agent	1 -3 % maintenance, up to 5% for induction	Inhalant
Sevoflurane	Anesthesia agent	2 – 5 % inhalant to effect (up to 8% for induction)	Inhalant
Ketamine + Xylazine	Sedation agent	35 – 50 Ket. + 5 – 10 Xyl.	Intramuscular Subcutaneous
Ketamine + Xylazine + Acepromazine	Anesthesia agent	35 Ket. + 5 Xyl. + 0.75 Ace.	Intramuscular Subcutaneous
Ketamine + Diazepam	Sedation agent	10 Ket. + 0.5 Dia.	Intravenous Intramuscular
Bupivacaine	Local analgesia	Dilute to 0.25%, do not exceed 8 mg/kg total dose	Intradermal Incisional
Lidocaine	Local analgesia	Dilute to 0.5% do not exceed 7 mg/kg total dose	Intradermal Incisional
Buprenorphine	Analgesia agent	0.01 – 0.03 IM	Subcutaneous Intramuscular
Meloxicam	Analgesia agent	Loading dose of 1.0 mg/kg then follow up with 0.5	Subcutaneous Oral
Carprofen	Analgesia agent	2 – 4	Subcutaneous but dilute with 1x volume of sterile saline

Species : Non-Human Primates

Drug	Type	Dose range (mg/kg BW)	Route
Isoflurane	Anesthesia agent	1 -3 % maintenance, up to 5% for induction	Inhalant
Sevoflurane	Anesthesia agent	Up to 8% for induction	Inhalant
Ketamine	Sedation agent	5 – 20	Intramuscular Subcutaneous Intravenous
Ketamine + Xylazine	Anesthesia agent	5 – 10 Ket. + 1 – 3 Xyl.	Intramuscular Subcutaneous
Ketamine + Dexmedetomidine	Sedation agent	5-10 Ket. + ~0.015 Dex.	Intramuscular Subcutaneous
Ketamine + Midazolam	Sedation agent	4-20 Ket. + 0.05-0.2 Mid.	Intramuscular Subcutaneous
Bupivacaine	Local analgesia	Dilute to 0.25 – 0.5%	Subcutaneous Intra-incisional
Lidocaine	Local analgesia	Dilute to 0.5 - 1% (=10mg/ml)	Subcutaneous Intra-incisional
Buprenorphine	Analgesia agent	0.005 – 0.03	Subcutaneous Intravenous
Meloxicam	Analgesia agent	0.2 – 0.3	Oral
Carprofen	Analgesia agent	2 – 4	Subcutaneous Oral
Ketorolac	Analgesia agent	0.5 – 1.0	Subcutaneous Intramuscular

Species : Guinea Pigs

Drug	Type	Dose range (mg/kg BW)	Route
Ketamine	Sedation agent	10 – 30	Intramuscular
Ketamine + Diazepam	Anesthesia agent	10 – 20 Ket. + 1 – 2 Dia.	Intramuscular
Ketamine + Xylazine		85 Ket. + 12 – 13 Xyl.	Intramuscular
Bupivacaine	Local analgesia	2.0 onset 5 minutes in 2 – 4 hours duration	Subcutaneous Intra-incisional
Lidocaine	Local analgesia	Percutaneously: 1 – 3, onset 1 minute, duration 30 – 60 minutes	Subcutaneous Intra-incisional
Buprenorphine	Analgesia agent	0.03 – 0.05	Subcutaneous Intravenous
Meloxicam	Analgesia agent	0.1 – 0.3	Oral
Pentobarbital	Anesthesia agent	15 – 40 30.0	Intraperitoneal Intravenous

Species : **Pig**

Drug	Type	Dose range (mg/kg BW)	Route
Isoflurane	Anesthesia agent	1 -3 % maintenance (up to 5% for induction)	Inhalant
Sevoflurane	Anesthesia agent	up to 8% for induction	Inhalant
Ketamine alone	Analgesia agent	10 – 15	Intramuscular
Ketamine + Acepromazine	Sedation and pre-anesthesia agent	33 Ket. + 1.1 Ace.	Intramuscular Subcutaneous in same syringe
Midazolam	Sedation agent	0.1 – 0.5	Intramuscular Subcutaneous
Bupivacaine	Local analgesia	Dilute to 0.25 – 0.5%	Subcutaneous Intra-incisional
Lidocaine HCL	Local analgesia	4 mg/kg to be diluted to 0.5 – 1% (=10mg/ml)	Subcutaneous Intraincisional
Buprenorphine	Analgesia agent	0.1 – 0.5 IM	Subcutaneous or Intramuscular
Carprofen	Analgesia agent	2 – 4	Subcutaneous