

Agents Used For Sedation and Pain Management of Exotic Companion Mammals

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Table 1. Sedative agents in exotic companion mammals – All dosages are in mg/kg unless otherwise indicated									
	Rabbit	Ferret	Guinea pig	Chinchilla	Rat	Hamster	Gerbil	Mouse	African hedgehog
ALPHA-2 AGONISTS									
Medetomidine	0.1-0.25 SC, IM	0.1-0.25 SC, IM	0.1 SC	0.1 SC	0.03-0.1 SC, IP	0.03-0.1 SC, IP	0.1-0.2 IP	0.03-0.1 SC, IP	
	1-2 µg/kg IM, IV	1-2 µg/kg IM, IV							
Dexmedetomidine	0.05-0.125 IM	0.04-0.1 IM	0.05 SC	0.05 SC	0.015- 0.5 SC, IP			0.015- 0.5 SC, IP	
	0.05-1.0 µg/kg IM, IV	0.05-1.0 µg/kg IM, IV							
BENZODIAZEPINES									
Diazepam	0.5-2.0 IV	0.5-2.0 IV	0.5-3.0 IV	0.5-3.0 IV	2.5-5.0 IV, IP	5.0 IM, IP	5.0 IM, IP	3.0-5.0 PO, IP	
Midazolam	0.25-2.0 SC, IM, IV	0.25-0.5 SC, IM, IV	0.5-2.0 SC, IM, IV	1.0-2.0 SC, IM, IV	1.0-2.5 SC, IM, IV	5.0 IP	5.0 IM, IP	1.0-5.0 SC, IM, IV	
					5 IP				
NEUROSTEROIDS									
Alfaxalone	2 mg/kg IV								

	Rabbit	Ferret	Guinea pig	Chinchilla	Rat	Hamster	Gerbil	Mouse	African hedgehog
NMDA RECEPTOR ANTAGONISTS									
Ketamine	5-50 SC, IM, IV	5-50 SC, IM, IV	5-40 SC, IM, IV	5-40 IM, IV	10-40 IM, IV	50-100 IP	100-200 IM, IV	100-200 IM, IV	
Tiletamine- Zolazepam					50-100 IP				10-30 SC
OPIOIDS									
Buprenorphine	0.01-0.05 SC, IM, IV q6-12h	0.01-0.03 SC, IM, IV q6-12h	0.01-0.05 SC, IM, IV q6-12h	0.01-0.05 SC, IM, IV q6-12h	0.05-0.1 SC, IM q6-12h			0.05-0.1 SC, IM q6-12h	
Butorphanol	0.2-2.0 IM, IV q2-4h	0.05-0.4 SC, IM, IV q2-4h	0.2-0.5 IM, IV q4h	0.2-2.0 IM, IV q2-4h	1.0-2.0 SC, IM, IV q2-4h			1.0-2.0 SC, IM, IP q2-4h	
Morphine	0.5-2.0 SC, IM q4h	0.2-2.0 SC, IM q2-4h	2.0-5.0 SC, IM q2-4h	2.0-5.0 SC, IM q4h	2.0-5.0 SC, IM q4h			2.0-10 SC, IM q4h	
PHENOTHIAZINE									
Acepromazine	0.25-1.0 SC, IM	0.1-0.2 SC, IM	0.5-1.0 SC, IM	0.5-1.0 SC, IM	0.5-2.5 SC, IM, IP		3.0 IM	2.5 SC, IM, IP	

h: hours; IM: intramuscular; IP: intraperitoneal; IV: intravenous; NMDA: N-Methyl-D-aspartate; q: every; SC: subcutaneous

Table 2. Analgesic agents in exotic companion mammals – All dosages are in mg/kg unless otherwise indicated

	Rabbit	Ferret	Guinea pig	Chinchilla	Rat	Hamster	Gerbil	Mouse
NEUROKININ (NK-1) ANTAGONIST								
Maropitant	1 mg/kg SC, IV							
NSAIDs								
Carprofen	1.5-5.0 PO, SC q12-24h*	2.0-5.0 PO, SC q12-24h*	2.0-5.0 PO, SC q12-24h*	2.0-5.0 PO, SC q12-24h*	2.0-5.0 PO, SC q12-24h*			2.0-5.0 PO, SC q12-24h*
	1.0-2.0 q24h ^a		4.0 q12-24h ^a	4.0 q24h ^a	5.0 ^a	4.0 q24h ^a	4.0 q24h ^a	5.0 ^a
Ketoprofen	1.0-3.0 IM q12-24h*	1.0-3.0 SC, IM q12-24h*	1.0-2.0 SC, IM q12-24h*	1.0-2.0 SC, IM q12-24h*	2.0-5.0 SC, IM q12-24h*			2.0-5.0 SC, IM q12-24h*
Meloxicam	0.1-0.3 PO, SC q24h*	0.1-0.3 PO, SC q24h*	0.1-0.3 PO, SC q24h*	0.1-0.3 PO, SC q24h*	0.5-2.0 PO, SC q24h*			1.0-5.0 PO, SC q24h*
								1.0-5.0 IP*
	0.1-1.0 q12-24h ^a	0.1-0.2 q24h ^a	0.1-0.3 q24h ^a	0.1-0.3 q24h ^a	1.0-2.0 q12-24h ^a	0.1-0.3 q24h ^a	0.1-0.3 q24h ^a	5.0 q24h ^a
OPIOIDS								
Buprenorphine	0.01-0.05 SC, IM, IV q6-12h*	0.01-0.03 SC, IM, IV q6-12h*	0.01-0.05 SC, IM, IV q6-12h*	0.01-0.05 SC, IM, IV q6-12h*	0.05-0.1 SC, IM q6-12h*			0.01-0.1 SC, IM q6-12h*
	0.01-0.05 q6-10h ^a	0.01-0.03 q6-10h ^a	0.05 q8-12h ^a	0.01-0.05 q6-12h ^a	0.01-0.05 q8-12h ^a	0.01-0.05 q6-12h ^a	0.01-0.05 q6-12h ^a	0.05-0.1 q12 ^a

	Rabbit	Ferret	Guinea pig	Chinchilla	Rat	Hamster	Gerbil	Mouse
Butorphanol	0.2-2.0 IM, IV q2-4h*	0.05-0.4 SC, IM, IV q2-4h*	0.2-0.5 IM, IV q4h*	0.2-2.0 IM, IV q2-4h*	1.0-2.0 SC, IM, IV q2-4h*			1.0-2.0 SC, IM, IP q2-4h*
	0.5 q2-4h ^a	0.1-0.5 q2-4h ^a	1.0-2.0 q4h ^a	0.2-2.0 q2-4h ^a	1.0-2.0 q4 ^a	0.2-2.0 q2-4h ^a	0.2-2.0 q2-4h ^a	1.0-2.0 q4h ^a
	0.1-0.3 mg/kg/h CRI ^a							
Fentanyl	0.005-0.01 loading dose ^a							
	0.01-0.04 mg/kg/h CRI ^a	0.02-0.03 mg/kg/h CRI ^a						
	0.001-0.005 mg/kg/h ^a	0.001-0.004 mg/kg/h ^a						
Hydromorphone	0.05-0.2 q6-8h ^a	0.1-0.2 q6-8h ^a						
		0.005-0.015 mg/kg/h CRI ^a						
Methadone			3.6 q4h ^a	1-2 ^a	1-4 ^a	1-2 ^a	1-2 ^a	1-2 ^a
Morphine	0.5-2.0 SC, IM q4h*	0.2-2.0 SC, IM q2-4h*	2-5 SC, IM q2-4h*	2-5 SC, IM q4h*	2-5 SC, IM q4h*			2-10 SC, IM q4h*
	0.5-5.0 q24h ^a	0.2-2.0 q24h ^a	2-5 q4h ^a		2-5 q1h ^a			2-5 q1h ^a

	Rabbit	Ferret	Guinea pig	Chinchilla	Rat	Hamster	Gerbil	Mouse
Oxymorphone	0.05-0.2 q6-8h ^a	0.05-0.2 q6-8h ^a	0.2-0.5 ^a		0.2-0.5 ^a			0.2-0.5 ^a
Tramadol	5.0 q12-24h ^a			5.0 ^a	5.0 ^a	5.0 ^a	5.0 ^a	5.0 ^a

CRI: constant rate infusion; h: hours; IM: intramuscular; IP: intraperitoneal; IV: intravenous; NSAID: Non-steroidal anti-inflammatory drugs; PO: per os; q: every; SC: subcutaneous

Sources: Allweiler 2016^a, Hawkins 2012*

Table 3. Local/regional anesthesia in exotic companion mammals (maximum dose in mg/kg)

	Rabbit	Ferret	Guinea pig	Chinchilla	Rat*	Mouse
Bupivacaine	<2	<2	<2	<2	<2	<2
Lidocaine	<4	<4	<4	<4	<4	<4

*Short duration of 20-30 minutes with both bupivacaine and lidocaine
Source: Hawkins 2012

Table 4. Epidural/spinal anesthesia and analgesia in exotic companion mammals* (Allweiler 2016, Hawkins 2012)

	Rabbit	Ferret	Guinea pig	Chinchilla	Rat	Mouse
Buprenorphine	12 µg/kg	12 µg/kg	12 µg/kg	12 µg/kg		
Bupivacaine (0.125%)	1 mg/kg	1 mg/kg	1 mg/kg	1 mg/kg	1 mg/kg	1 mg/kg
Morphine (preservative free)	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg

*Total volume for epidural administration should not exceed 0.33 ml/kg (Hawkins 2012)
Sources: Allweiler 2016, Hawkins 2012