Analgesia of rodents for collection of tissue for genotyping

Disclaimer:

Norecopa (<u>www.norecopa.no</u>) offers this list of drugs and doses as a service to the animal research community, but takes no responsibility for the accuracy of the information or the efficacy of the treatment, which can be expected to vary between species, strain, age group and individuals, as well as the way in which the procedure is performed. In many cases, little research has been carried out into the optimal doses and their ability to cause pain relief. The final decisions on choice of drug, dose, frequency and route of administration should always be made by the responsible veterinarian in cooperation with the caretakers.

Norecopa welcomes feedback on the contents of this page (to <u>post@norecopa.no</u>) and will adjust the information accordingly as new knowledge becomes available.

Basic principles of analgesia

Administration of analgesics in drinking water is generally not recommended because animals in pain may be less inclined to move and may therefore drink less. Some preparations may also be unpalatable when given orally (e.g. carprofen), although suspensions marketed specifically for oral use (e.g. meloxicam) may be well accepted.

Procedures that are moderately or severely painful will require more analgesia, probably as an injection, in addition to or instead of oral medication.

Injectables should be given subcutaneously if possible, as this injection route is probably less painful than the intramuscular route and avoids the risks of accidental injection in an organ when giving an intraperitoneal injection.

	Mice	Rats
Buprenorphine	0.05-0.1 mg/kg s.c. every 6-8	0.05 mg/kg s.c. every 6-8
	hours	hours
Meloxicam	2.5-10 mg/kg s.c. every 12	0.5 mg/kg s.c. every 12 hours
	hours	
Carprofen	5 mg/kg s.c. or orally every 24	5 mg/kg s.c. or orally every 24
	hours	hours
Ketoprofen	5 mg/kg s.c. or orally every 24	5 mg/kg s.c. or orally every 24
	hours	hours

References

Alleva E & Laviola G (1987): Short-term and delayed behavioral effects of pre- and postweaning morphine in mice. Pharmacol Biochem Behav. 26:539-42.

Curtin LI, Grakowsky JA, Suarez M, Thompson AC, DiPirro JM, Martin LBE & Kristal MB

(2009): Evaluation of buprenorphine in a postoperative pain model in rats. Comparative Medicine 59: 60-71.

Hayes KE, Raucci FA, Gades NM & Toth LA (2000): An evaluation of analgesic regimens for abdominal surgery in mice. Contemp Top Lab Anim Sci 39:18-23.

Liles J & Flecknell PA (1992): The use of non-steroidal anti-inflammatory drugs for the relief of pain in laboratory rodents and rabbits. Lab Anim 26:241-55.

Roughan JV & Flecknell PA (2000): Effects of surgery and analgesic administration on spontaneous behavior in singly housed rats. ResVet Sci 69:283-8.

Roughan JV & Flecknell PA (2001): Behavioral effects of laparotomy and analgesic effects of ketoprofen and carprofen in rats. Pain 90:65-74.

Roughan JV & Flecknell PA (2003): Evaluation of a short duration behaviour-based postoperative pain scoring system in rats. Eur J Pain 7:397-406.

Roughan JV & Flecknell PA (2004): Behavior-based assessment of the duration of laparotomyinduced abdominal pain and the analgesic effects of carprofen and buprenorphine in rats. Beh Pharm 15: 461-472

Stewart LSA & Martin WJ (2003): Evaluation of postoperative analgesia in a rat model of incisional pain. Contemp Top Lab Anim Sci 42:28-34.

Wright-Williams SL, Courade J-P, Richardson CA, Roughan JV & Flecknell PA (2007): Effects of vasectomy surgery and meloxicam treatment on faecal corticosterone levels and behaviour in two strains of laboratory mouse. Pain 130: 108-118.

Websites

Guidelines for the recognition and assessment of pain in animals. <u>http://www.link.vet.ed.ac.uk/animalpain</u>

Pain Assessment in the Rat. Digital resources for veterinary trainers, produced by Newcastle University, UK. <u>http://www.digires.co.uk</u>

Recognising and assessing pain, suffering and distress. http://www.lal.org.uk/pain/index.html