

Utarbeidet av AÅ Godkjent av	Standard operating procedure The use of local anesthesia for rodents	Versjon: 1,0 Utarbeidet: 13.02.15 Revidert: 11.05.15, AÅ
---------------------------------	---	--

Purpose: To provide additional pain relief directly at the site of surgery. Local anesthesia can be used in addition to systemic analgesia such as NSAID's or opioids to control mild, moderate or severe pain in rats and mice.

Policy: Pain should be appropriately treated based on signs of pain in the rodent and the likelihood that the procedure will cause pain. When possible, pain should be treated pre-emptively (before the cause). Local anesthetic/analgesic drugs are not to be used as the sole analgesia for moderate or severe pain. Contact the veterinarian to determine the best form of analgesia for a particular study/animal.

Inject local anesthetic into the subcutaneous space ("line block") below the planned incision line prior to surgery (once the animal is anesthetized, fur clipped and the skin prepped for surgery).

Choice of Local Anesthetic

Choose the longer acting bupivacain if the duration of pain is expected to exceed one hour or if the length of surgery is longer than 1hour (i.e. craniotomy, laparotomy, thoracotomy, etc.). When used in combination (lidocain plus bupivacain in the same syringe) the benefits of both drugs can be achieved, namely rapid onset with long duration of local anesthesia.

Materials:

Lidocain 20 mg/ml or Marcain (bupivacain) 2,5 mg/ml

Hypodermic needles (25 or 27g, 1/2" or smaller)

1 cc syringes

Sterile vials for dilutions

Sterile NaCl for dilutions

Local anesthetic	Dose	Application	Notes
Lidocain	2 mg/kg	Use locally before making surgical incision	Faster onset than bupivacain, but short (<1 hour) duration of action
Marcain (bupivacain)	1 mg/kg	Use locally before making surgical incision	Slower onset than lidocain, but longer (~hour) duration of action

Dilutions:

Lidocain:

Dilute the 20 mg/ml lidocain 1:10 to get final concentration of 2 mg/ml.

Transfer solutions aseptically, carefully label vial with drug name, concentration and date of dilution.

Discard diluted solutions in 14 days.

Bupivacain:

Dilute the 2,5 mg/ml bupivacain 1:5 to get final concentration of 0.5 mg/ml. For rats, dilution might not be necessary or practical, depending on the length of your incision.

Transfer solutions aseptically, carefully label vial with drug name, concentration and date of dilution.

Discard diluted solutions in 14 days.

Recommended volumes (equivalent to 2 mg/kg lidocain and 1 mg/kg bupivacain):

Weight of Rat	Diluted lidocain 2 mg/ml:	Undiluted bupivacain 2,5 mg/ml:*
250 g	0,25 ml	0,1 ml
350 g	0,35 ml	0,14 ml
450 g	0,45 ml	0,18 ml
550 g	0,55 ml	0,22 ml

Weight of Mouse	Diluted lidocain 2 mg/ml:*	Diluted bupivacain 0,5 mg/ml:*
25 g	0,025 ml	0,05 ml
35 g	0,035 ml	0,07 ml
45 g	0,045 ml	0,09 ml
55 g	0,055 ml	0,11 ml

*More NaCl can be added to the syringe to get a more practical volume for injection