

University Animal Care Committee Standard Operating Procedure		
Document No: 7.1	Subject: Pain Management in Mice	
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The purpose of this Standard Operating Procedure (SOP) is to describe methods for assessing and treating pain in rodents.

1. Introduction and Definitions:

Based on the definition of pain from the American College of Laboratory Animal Medicine (ACLAM), pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage and should be expected in an animal subjected to any procedure or disease model that would be likely to cause pain in a human.

It is generally agreed that pain adversely impacts the welfare of animals and that in research protocols, pain, if not controlled, is a variable which can confound the interpretation of experimental results.

Procedures expected to cause more than slight or momentary pain (e.g., pain in excess of a needle poke or injection) require the appropriate use of pain-relieving measures unless scientifically justified in an approved animal use protocol (AUP).

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combination including an opioid, non-steroidal anti-inflammatory (NSAID) and a local analgesic.

Local Anesthetics:

Local anesthetic should be infiltrated at the site where the painful stimulus will be induced:

Local Analgesics	Dose	Duration	Notes
Lidocaine	2 mg/kg	30 – 60 minutes	<ul style="list-style-type: none"> - Due to acidic nature, dilute 3:1 with sodium bicarbonate injectable solution for a conscious rodent - If administered in an anesthetized patient, dilution with sodium bicarbonate is not necessary. - Fast onset of action with moderate duration - Lidocaine with epinephrine is not recommended for rodents
Bupivacaine	2 mg/kg	4 – 7 hrs.	As above with the exception: <ul style="list-style-type: none"> - Slower onset of action versus lidocaine but longer duration
Lidocaine/bupivacaine	Up to 2mg/kg each for total dose	Up to 7 hrs.	<ul style="list-style-type: none"> - Combination allows for rapid onset with longer duration

General Analgesics:

Analgesic	Dose	Route	Frequency
Acetaminophen	100 – 300 mg/kg	PO	q 4 hr.
Meloxicam (Long Term)	1 – 6 mg/kg	SC, PO	q 12-24 hr.
Meloxicam (Post-surgical – 3 days)	10mg/kg	SC, PO	q 12-24 hr.
Ketoprofen	5 mg/kg	SC	q 12- 24 hr.
Carprofen	2.5- 5 mg/kg	SC, IP	q 24 hr.
Tramadol	20 – 40 mg/kg	SC, IP	q 24 hr.
Buprenorphine	0.05 – 0.1 mg/kg	SC, IP	q 6 – 12 hr.
Buprenorphine SR	0.5-1.0 mg/kg	SC	q 48 hr.

