

LARC Veterinarians' Anesthesia and Analgesia Recommendations for UCSF Laboratory Animals

Effective Date: Jan 2018

Summary Table

Severity of anticipated pain	Anesthetic	NSAID	Long-Acting Buprenorphine	Species - Page	Records Template - Page
Moderate	Isoflurane only	Yes	No	Mouse - 3 ; Rat - 4	M - 29 ; R - 30
Moderate	Ketamine Combo + Isoflurane	Yes	No	Mouse - 5 ; Rat - 6	M - 31 ; R - 32
Moderate	Isoflurane only	No	No	Mouse - 7 ; Rat - 8	M - 33 ; R - 34
Moderate	Ketamine Combo + Isoflurane	No	No	Mouse - 9 ; Rat - 10	M - 35 ; R - 36
Moderate - Stereotactic	Ketamine Combo + Isoflurane	Yes	No	Mouse - 11 ; Rat - 12	M - 31 ; R - 32
Moderate - Stereotactic	Ketamine Combo + Isoflurane	No	No	Mouse - 13 ; Rat - 14	M - 35 ; R - 36
Severe	Isoflurane only	Yes	Yes	Mouse - 15 ; Rat - 16	M - 37 ; R - 38
Severe	Ketamine Combo + Isoflurane	Yes	No	Mouse - 17 ; Rat - 18	M - 39 ; R - 40
Severe	Isoflurane only	Yes	No	Mouse - 19 ; Rat - 20	M - 41 ; R - 42
Severe	Isoflurane only	No	Yes	Mouse - 21 ; Rat - 22	M - 43 ; R - 44
Severe	Ketamine Combo + Isoflurane	No	Yes	Mouse - 23 ; Rat - 24	M - 45 ; R - 46
Severe	Isoflurane only	No	No	Mouse - 25 ; Rat - 26	M - 47 ; R - 48
Severe	Ketamine Combo + Isoflurane	No	No	Mouse - 27 ; Rat - 28	M - 49 ; R - 50

Moderate Pain anticipated (examples):

- **Some Abdominal Surgeries**
- **Subcutaneous Osmotic Pump Placement**
- **Embryo transfer**
- **Skin transplantation/allograft**
- **Most Stereotactic Procedures**

Pg. 3-4 Moderate Pain Option 1:

Anesthesia: Isoflurane, buprenorphine, and bupivacaine. Post-op NSAID (Non-steroidal anti-inflammatory drug)

Pg. 5-6 Moderate Pain Option 2:

Anesthesia: Ketamine-combination, isoflurane, and bupivacaine. Post-op buprenorphine and NSAID

Pg. 7-8 Moderate Pain Option 3 (if NSAIDs must be avoided):

Anesthesia: Isoflurane, buprenorphine, and bupivacaine. Post-op buprenorphine

Pg. 9-10 Moderate Pain Option 4 (if NSAIDs must be avoided):

Anesthesia: Ketamine-combination, isoflurane, and bupivacaine. Post-op buprenorphine

Moderate Pain anticipated (but requires anesthesia for placement in device):

- **Stereotactic/Craniotomy Surgery in Mouse or Rat**

Pg. 11-12 Stereotax Option 1:

Anesthesia: Ketamine-combination, isoflurane, and bupivacaine. Post-op buprenorphine and NSAID

Pg. 13-14 Stereotax Option 2 (if NSAIDs must be avoided):

Anesthesia: Ketamine-combination, isoflurane, and bupivacaine. Post-op buprenorphine

Severe Pain anticipated (examples):

- **Thoracotomy for cardiac manipulation**
- **Long-bone fracture and other orthopedic procedures**
- **Vertebral procedures**
- **Abdominal surgeries with organ manipulation**
- **Trauma models**

Pg. 15-16 Severe Option 1:

Anesthesia: Isoflurane, sustained-release buprenorphine, and bupivacaine. Post-op NSAID

Pg. 17-18 Severe Option 2:

Anesthesia: Ketamine-combination, isoflurane, and bupivacaine. Post-op buprenorphine and NSAID

Pg. 19-20 Severe Option 3:

Anesthesia: Isoflurane, regular buprenorphine, and bupivacaine. Post-op buprenorphine and NSAID

Pg. 21-22 Severe Option 5 (if NSAIDs must be avoided):

Anesthesia: Isoflurane, sustained-release buprenorphine, and bupivacaine.

Pg. 23-24 Severe Option 6 (if NSAIDs must be avoided):

Anesthesia: Ketamine-combination, isoflurane, and bupivacaine. Post-op sustained-release buprenorphine

Pg. 25-26 Severe Option 7 (if NSAIDs must be avoided):

Anesthesia: Isoflurane, regular buprenorphine, and bupivacaine. Post-op buprenorphine

Pg. 27-28 Severe Option 8 (if NSAIDs must be avoided):

Anesthesia: Ketamine-combination, isoflurane, and bupivacaine. Post-op buprenorphine

Mouse Anesthesia and Analgesia

- **Moderate Pain Anticipated (Examples):**

- Abdominal surgeries
- Subcutaneous pump placement
- Embryo transfer
- Skin transplantation / allograft

Anesthesia: Isoflurane

Analgesia: Bupivacaine/Lidocaine, Buprenorphine, NSAID

- **Pre-operative:** Buprenorphine is administered 30-60 minutes prior to incision.
- **Peri-operative:** Bupivacaine/Lidocaine is given at the surgical site prior to incision.
- **Post-operative:** A long-acting veterinary non-steroidal anti-inflammatory drug (NSAID) is given prior to recovery from anesthesia. The NSAID is given again the next morning following surgery.

Anesthesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Isoflurane	1-3% inhalant to effect (up to 5% for induction)	Inhalant	Whenever general anesthesia is required
Analgesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Bupivacaine/Lidocaine (Choose one)	Bupivacaine (Recommended): Dilute to 0.25%, do not exceed 8 mg/kg total dose Lidocaine: Dilute to 0.5%, do not exceed 7 mg/kg total dose	SC, Intra- incisional	Once at the time of surgery, given locally before making surgical incision
Buprenorphine	0.05-0.1	SC or IP	Once at the time of surgery (administered 30-60 minutes prior to incision)
NSAID (Choose one)	Meloxicam (Recommended): 5-10 Carprofen (Recommended): ~5 Ketoprofen: 2-5	SC or IP or PO	Prior to recovery from anesthesia and again the next morning following surgery

Rat Anesthesia and Analgesia

- **Moderate Pain Anticipated (Examples):**

- Abdominal surgeries
- Subcutaneous pump placement
- Embryo transfer
- Skin transplantation / allograft

Anesthesia: Isoflurane

Analgesia: Bupivacaine/Lidocaine, Buprenorphine, NSAID

- **Pre-operative:** Buprenorphine is administered 30-60 minutes prior to incision.
- **Peri-operative:** Bupivacaine/Lidocaine is given at the surgical site prior to incision.
- **Post-operative:** A long-acting veterinary non-steroidal anti-inflammatory drug (NSAID) is given prior to recovery from anesthesia. The NSAID is given again the next morning following surgery.

Anesthesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Isoflurane	1-3% inhalant to effect (up to 5% for induction)	Inhalant	Whenever general anesthesia is required
Analgesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Bupivacaine/Lidocaine (Choose one)	Bupivacaine (Recommended): Dilute to 0.25%, do not exceed 8 mg/kg total dose Lidocaine: Dilute to 0.5%, do not exceed 7 mg/kg total dose	SC, Intra- incisional	Once at the time of surgery, given locally before making surgical incision
Buprenorphine	0.01-0.05	SC or IP	Once at the time of surgery (administered 30-60 minutes prior to incision)
NSAID (Choose one)	Meloxicam (Recommended): 2 Carprofen (Recommended): 5 Ketoprofen: 2-5	SC, IP, or PO	Prior to recovery from anesthesia and again the next morning following surgery

Mouse Anesthesia and Analgesia

- **Moderate Pain Anticipated (Examples):**

- Abdominal surgeries
- Subcutaneous pump placement
- Embryo transfer
- Skin transplantation / allograft

Anesthesia: Ketamine-combination, Isoflurane

Analgesia: Bupivacaine/Lidocaine, Buprenorphine, NSAID

- **Peri-operative:** Bupivacaine/Lidocaine is given at the surgical site prior to incision.
- **Post-operative:** A long-acting veterinary non-steroidal anti-inflammatory drug (NSAID) is given prior to anesthetic recovery. Buprenorphine is given immediately after animals recover from anesthesia. The NSAID is given again the next morning following surgery.

Anesthesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Ketamine-combination (Choose one combination and combine in same syringe)	<p>Ketamine-Xylazine (Recommended): 80-100 Ket+ 10-20 Xyl</p> <p>Ketamine-Xylazine-Acepromazine (Recommended): 70-100 Ket + 10-20 Xyl + 2-3 Ace</p> <p>Ketamine-Dexmedetomidine: 50-75 Ket + 0.25-0.5 Dex</p> <p>Ketamine-Midazolam: 80-100 Ket + 4-5 Mid</p>	IP	Whenever general anesthesia is required
Isoflurane	1-3% inhalant to effect (up to 5% for induction)	Inhalant	Whenever general anesthesia is required
Analgesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Bupivacaine/Lidocaine (Choose one)	<p>Bupivacaine (Recommended): Dilute to 0.25%, do not exceed 8 mg/kg total dose</p> <p>Lidocaine: Dilute to 0.5%, do not exceed 7 mg/kg total dose</p>	SC, Intra-incisional	Once at the time of surgery, given locally before making surgical incision
Buprenorphine	0.05-0.1	SC or IP	Immediately after animals recover from anesthesia
NSAID (Choose one)	<p>Meloxicam (Recommended): 5-10</p> <p>Carprofen (Recommended): ~5</p> <p>Ketoprofen: 2-5</p>	SC, IP, or PO	Prior to recovery from anesthesia and again the next morning following surgery

Rat Anesthesia and Analgesia

- **Moderate Pain Anticipated (Examples):**

- Abdominal surgeries
- Subcutaneous pump placement
- Embryo transfer
- Skin transplantation / allograft

Anesthesia: Ketamine-combination, Isoflurane

Analgesia: Bupivacaine/Lidocaine, Buprenorphine, NSAID

- **Peri-operative:** Bupivacaine/Lidocaine is given at the surgical site prior to incision.
- **Post-operative:** A long-acting veterinary non-steroidal anti-inflammatory drug (NSAID) is given prior to anesthetic recovery. Buprenorphine is given immediately after animals recover from anesthesia. The NSAID is given again the next morning following surgery.

Anesthesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Ketamine-combination (Choose one combination and combine in same syringe)	Ketamine-Xylazine (Recommended): 40-80 Ket+ 5-10 Xyl Ketamine-Xylazine-Acepromazine (Recommended): 40-80 Ket + 8 Xyl + 4 Ace Ketamine-Dexmedetomidine: 60-75 Ket + 0.25-0.5 Dex	IP	Whenever general anesthesia is required
Isoflurane	1-3% inhalant to effect (up to 5% for induction)	Inhalant	Whenever general anesthesia is required
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Buprenorphine	0.01-0.05	SC or IP	Immediately after animals recover from anesthesia
NSAID (Choose one)	Meloxicam (Recommended): 2 Carprofen (Recommended): 5 Ketoprofen: 2-5	SC, IP, or PO	Prior to recovery from anesthesia and again the next morning following surgery

Mouse Anesthesia and Analgesia

- **Moderate Pain Anticipated (Examples):**
 - Abdominal surgeries
 - Subcutaneous pump placement
 - Embryo transfer
 - Skin transplantation / allograft
- **NSAIDs must be avoided**

Anesthesia: Isoflurane

Analgesia: Bupivacaine/Lidocaine, Buprenorphine

- **Pre-operative:** Buprenorphine is administered 30-60 minutes prior to incision.
- **Peri-operative:** Bupivacaine/Lidocaine is given at the surgical site prior to incision.
- **Post-operative:** Buprenorphine is given 4-8 hours post-surgery, on the next morning following surgery, and, if signs of pain are evident, on the next afternoon following surgery.

Anesthesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Isoflurane	1-3% inhalant to effect (up to 5% for induction)	Inhalant	Whenever general anesthesia is required
Analgesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Bupivacaine/Lidocaine (Choose one)	Bupivacaine (Recommended): Dilute to 0.25%, do not exceed 8 mg/kg total dose Lidocaine: Dilute to 0.5%, do not exceed 7 mg/kg total dose	SC, Intra- incisional	Once at the time of surgery, given locally before making surgical incision
Buprenorphine	0.05-0.1	SC or IP	Once at the time of surgery (administered 30-60 minutes prior to incision), 4-8 hours post-surgery, on the next morning following surgery, and, if signs of pain are evident, on the next afternoon following surgery

Rat Anesthesia and Analgesia

- **Moderate Pain Anticipated (Examples):**
 - Abdominal surgeries
 - Subcutaneous pump placement
 - Embryo transfer
 - Skin transplantation / allograft
- **NSAIDs must be avoided**

Anesthesia: Isoflurane

Analgesia: Bupivacaine/Lidocaine, Buprenorphine

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Mouse Anesthesia and Analgesia

- **Moderate Pain Anticipated (Examples):**
 - Abdominal surgeries
 - Subcutaneous pump placement
 - Embryo transfer
 - Skin transplantation / allograft
- **NSAIDs must be avoided**

Anesthesia: Ketamine-combination, Isoflurane

Analgesia: Bupivacaine/Lidocaine, Buprenorphine

- **Peri-operative:** Bupivacaine/Lidocaine is given at the surgical site prior to incision.
- **Post-operative:** Buprenorphine is given immediately after animals recover from anesthesia, 4-8 hours post-surgery, on the next morning following surgery, and, if signs of pain are evident, on the next afternoon following surgery.

Anesthesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Ketamine-combination (Choose one combination and combine in same syringe)	Ketamine-Xylazine (Recommended): 80-100 Ket+ 10-20 Xyl Ketamine-Xylazine-Acepromazine (Recommended): 70-100 Ket + 10-20 Xyl + 2-3 Ace Ketamine-Dexmedetomidine: 50-75 Ket + 0.25-0.5 Dex Ketamine-Midazolam: 80-100 Ket + 4-5 Mid	IP	Whenever general anesthesia is required
Isoflurane	1-3% inhalant to effect (up to 5% for induction)	Inhalant	Whenever general anesthesia is required
Analgesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Bupivacaine/Lidocaine (Choose one)	Bupivacaine (Recommended): Dilute to 0.25%, do not exceed 8 mg/kg total dose Lidocaine: Dilute to 0.5%, do not exceed 7 mg/kg total dose	SC, Intra-incisional	Once at the time of surgery, given locally before making surgical incision
Buprenorphine	0.05-0.1	SC or IP	Immediately after animals recover from anesthesia, 4-8 hours post-surgery, on the next morning following surgery, and, if signs of pain are evident, on the next afternoon following surgery

Rat Anesthesia and Analgesia

- **Moderate Pain Anticipated (Examples):**
 - Abdominal surgeries
 - Subcutaneous pump placement
 - Embryo transfer
 - Skin transplantation / allograft
- **NSAIDs must be avoided**

Anesthesia: Ketamine-combination, Isoflurane

Analgesia: Bupivacaine/Lidocaine, Buprenorphine

- **Peri-operative:** Bupivacaine/Lidocaine is given at the surgical site prior to incision.
- **Post-operative:** Buprenorphine is given immediately after animals recover from anesthesia, 4-8 hours post-surgery, on the next morning following surgery, and, if signs of pain are evident, on the next afternoon following surgery.

Anesthesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Ketamine-combination (Choose one combination and combine in same syringe)	<p>Ketamine-Xylazine (Recommended): 40-80 Ket+ 5-10 Xyl</p> <p>Ketamine-Xylazine-Acepromazine (Recommended): 40-80 Ket + 8 Xyl + 4 Ace</p> <p>Ketamine-Dexmedetomidine: 60-75 Ket + 0.25-0.5 Dex</p>	IP	Whenever general anesthesia is required
Isoflurane	1-3% inhalant to effect (up to 5% for induction)	Inhalant	Whenever general anesthesia is required
Analgesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Bupivacaine/Lidocaine (Choose one)	<p>Bupivacaine (Recommended): Dilute to 0.25%, do not exceed 8 mg/kg total dose</p> <p>Lidocaine: Dilute to 0.5%, do not exceed 7 mg/kg total dose</p>	SC, Intra-incisional	Once at the time of surgery, given locally before making surgical incision
Buprenorphine	0.01-0.05	SC or IP	Immediately after animals recover from anesthesia, 4-8 hours post-surgery, on the next morning following surgery, and, if signs of pain are evident, on the next afternoon following surgery

Mouse Anesthesia and Analgesia

- **Moderate Pain Anticipated**
- **Requires anesthesia for placement in stereotactic device**

Anesthesia: Ketamine-combination, Isoflurane

Analgesia: Bupivacaine/Lidocaine, Buprenorphine, NSAID

- **Peri-operative:** Bupivacaine/Lidocaine is given at the surgical site prior to incision.
- **Post-operative:** A long-acting veterinary non-steroidal anti-inflammatory drug (NSAID) is given prior to anesthetic recovery. Buprenorphine is given immediately after animals recover from anesthesia. The NSAID is given again the next morning following surgery.

Anesthesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Ketamine-combination (Choose one combination and combine in same syringe)	Ketamine-Xylazine (Recommended): 80-100 Ket+ 10-20 Xyl Ketamine-Xylazine-Acepromazine (Recommended): 70-100 Ket + 10-20 Xyl + 2-3 Ace Ketamine-Dexmedetomidine: 50-75 Ket + 0.25-0.5 Dex Ketamine-Midazolam: 80-100 Ket + 4-5 Mid	IP	Whenever general anesthesia is required
Isoflurane	1-3% inhalant to effect (up to 5% for induction)	Inhalant	Whenever general anesthesia is required
Analgesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Bupivacaine/Lidocaine (Choose one)	Bupivacaine (Recommended): Dilute to 0.25%, do not exceed 8 mg/kg total dose Lidocaine: Dilute to 0.5%, do not exceed 7 mg/kg total dose	SC, Intra-incisional	Once at the time of surgery, given locally before making surgical incision
Buprenorphine	0.05-0.1	SC or IP	Immediately after animals recover from anesthesia
NSAID (Choose one)	Meloxicam (Recommended): 5-10 Carprofen (Recommended): ~5 Ketoprofen: 2-5	SC, IP, or PO	Prior to recovery from anesthesia and again on the next morning following surgery

Rat Anesthesia and Analgesia

- **Moderate Pain Anticipated**
- **Requires anesthesia for placement in stereotactic device**

Anesthesia: Ketamine-combination, Isoflurane

Analgesia: Bupivacaine/Lidocaine, Buprenorphine, NSAID

- **Peri-operative:** Bupivacaine/Lidocaine is given at the surgical site prior to incision.
- **Post-operative:** A long-acting veterinary non-steroidal anti-inflammatory drug (NSAID) is given prior to anesthetic recovery. Buprenorphine is given immediately after animals recover from anesthesia. The NSAID is given again the next morning following surgery.

Anesthesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Ketamine-combination (Choose one combination and combine in same syringe)	Ketamine-Xylazine (Recommended): 40-80 Ket+ 5-10 Xyl Ketamine-Xylazine-Acepromazine (Recommended): 40-80 Ket + 8 Xyl + 4 Ace Ketamine-Dexmedetomidine: 60-75 Ket + 0.25-0.5 Dex	IP	Whenever general anesthesia is required
Isoflurane	1-3% inhalant to effect (up to 5% for induction)	Inhalant	Whenever general anesthesia is required
Analgesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Bupivacaine/Lidocaine (Choose one)	Bupivacaine (Recommended): Dilute to 0.25%, do not exceed 8 mg/kg total dose Lidocaine: Dilute to 0.5%, do not exceed 7 mg/kg total dose	SC, Intra-incisional	Once at the time of surgery, given locally before making surgical incision
Buprenorphine	0.01-0.05	SC or IP	Immediately after animals recover from anesthesia
NSAID (Choose one)	Meloxicam (Recommended): 2 Carprofen (Recommended): 5 Ketoprofen: 2-5	SC, IP, or PO	Prior to recovery from anesthesia and again on the next morning following surgery

Mouse Anesthesia and Analgesia

- **Moderate Pain Anticipated**
- **Requires anesthesia for placement in stereotactic device**
- **NSAIDs must be avoided**

Anesthesia: Ketamine-combination, Isoflurane

Analgesia: Bupivacaine/Lidocaine, Buprenorphine

- **Peri-operative:** Bupivacaine/Lidocaine is given at the surgical site prior to incision.
- **Post-operative Care:** Buprenorphine is given immediately after animals recover from anesthesia, 4-8 hours post-surgery, on the next morning following surgery, and, if signs of pain are evident, on the next afternoon following surgery.

Anesthesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Ketamine-combination (Choose one combination and combine in same syringe)	Ketamine-Xylazine (Recommended): 80-100 Ket+ 10-20 Xyl Ketamine-Xylazine-Acepromazine (Recommended): 70-100 Ket + 10-20 Xyl + 2-3 Ace Ketamine-Dexmedetomidine: 50-75 Ket + 0.25-0.5 Dex Ketamine-Midazolam: 80-100 Ket + 4-5 Mid	IP	Whenever general anesthesia is required
Isoflurane	1-3% inhalant to effect (up to 5% for induction)	Inhalant	Whenever general anesthesia is required
Analgesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Bupivacaine/Lidocaine (Choose one)	Bupivacaine (Recommended): Dilute to 0.25%, do not exceed 8 mg/kg total dose Lidocaine: Dilute to 0.5%, do not exceed 7 mg/kg total dose	SC, Intra-incisional	Once at the time of surgery, given locally before making surgical incision
Buprenorphine	0.05-0.1	SC or IP	Immediately after animals recover from anesthesia, 4-8 hours post-surgery, on the next morning following surgery, and, if signs of pain are evident, on the next afternoon following surgery

Rat Anesthesia and Analgesia

- **Moderate Pain Anticipated**
- **Requires anesthesia for placement in stereotactic device**
- **NSAIDs must be avoided**

Anesthesia: Ketamine-combination, Isoflurane

Analgesia: Bupivacaine/Lidocaine, Buprenorphine

- **Peri-operative:** Bupivacaine/Lidocaine is given at the surgical site prior to incision.
- **Post-operative Care:** Buprenorphine is given immediately after animals recover from anesthesia, 4-8 hours post-surgery, on the next morning following surgery, and, if signs of pain are evident, on the next afternoon following surgery.

Anesthesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Ketamine-combination (Choose one combination and combine in same syringe)	Ketamine-Xylazine (Recommended): 40-80 Ket+ 5-10 Xyl Ketamine-Xylazine-Acepromazine (Recommended): 40-80 Ket + 8 Xyl + 4 Ace Ketamine-Dexmedetomidine: 60-75 Ket + 0.25-0.5 Dex	IP	Whenever general anesthesia is required
Isoflurane	1-3% inhalant to effect (up to 5% for induction)	Inhalant	Whenever general anesthesia is required
Analgesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Bupivacaine/Lidocaine (Choose one)	Bupivacaine (Recommended): Dilute to 0.25%, do not exceed 8 mg/kg total dose Lidocaine: Dilute to 0.5%, do not exceed 7 mg/kg total dose	SC, Intra-incisional	Once at the time of surgery, given locally before making surgical incision
Buprenorphine	0.01-0.05	SC or IP	Immediately after animals recover from anesthesia, 4-8 hours post-surgery, on the next morning following surgery, and, if signs of pain are evident, on the next afternoon following surgery

Mouse Anesthesia and Analgesia

- **Severe Pain Anticipated (Examples):**

- Thoracotomy for cardiac manipulation
- Orthopedic / Trauma procedures (e.g. long-bone fractures, TBI, vertebral procedures)
- Abdominal surgeries with organ manipulation

Anesthesia: Isoflurane

Analgesia: Bupivacaine/Lidocaine, Sustained-release Buprenorphine, NSAID

- **Pre-operative:** Sustained-release buprenorphine is given once at the time of surgery, administered 30-60 minutes prior to incision.
- **Peri-operative:** Bupivacaine/Lidocaine is given at the surgical site prior to incision.
- **Post-operative:** A long-acting veterinary non-steroidal anti-inflammatory drug (NSAID) is given prior to recovery from anesthesia (post-surgery day 1), on the next morning following surgery (post-surgery day 2), and, if signs of pain are evident, on next subsequent morning (post-surgery day 3).

Anesthesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Isoflurane	1-3% inhalant to effect (up to 5% for induction)	Inhalant	Whenever general anesthesia is required
Analgesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Bupivacaine/Lidocaine (Choose one)	Bupivacaine (Recommended): Dilute to 0.25%, do not exceed 8 mg/kg total dose Lidocaine: Dilute to 0.5%, do not exceed 7 mg/kg total dose	SC, Intra- incisional	Once at the time of surgery, given locally before making surgical incision
Buprenorphine (Sustained-release)	1.5	SC	Once at the time of surgery (administered 30-60 minutes prior to incision)
NSAID (Choose one)	Meloxicam (Recommended): 5-10 Carprofen (Recommended): ~5 Ketoprofen: 2-5	SC, IP, or PO	Prior to recovery from anesthesia (post-surgery day 1), on the next morning following surgery (post-surgery day 2), and, if signs of pain are evident, on next subsequent morning (post-surgery day 3).

Rat Anesthesia and Analgesia

- **Severe Pain Anticipated (Examples):**

- Thoracotomy for cardiac manipulation
- Orthopedic / Trauma procedures (e.g. long-bone fractures, TBI, vertebral procedures)
- Abdominal surgeries with organ manipulation

Anesthesia: Isoflurane

Analgesia: Bupivacaine/Lidocaine, Sustained-release Buprenorphine, NSAID

- **Pre-operative:** Sustained-release buprenorphine is given once at the time of surgery, administered 30-60 minutes prior to incision.
- **Peri-operative:** Bupivacaine/Lidocaine is given at the surgical site prior to incision.
- **Post-operative:** A long-acting veterinary non-steroidal anti-inflammatory drug (NSAID) is prior to recovery from anesthesia (post-surgery day 1), on the next morning following surgery (post-surgery day 2), and, if signs of pain are evident, on next subsequent morning (post-surgery day 3).

Anesthesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Isoflurane	1-3% inhalant to effect (up to 5% for induction)	Inhalant	Whenever general anesthesia is required
Analgesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Bupivacaine/Lidocaine (Choose one)	Bupivacaine (Recommended): Dilute to 0.25%, do not exceed 8 mg/kg total dose Lidocaine: Dilute to 0.5%, do not exceed 7 mg/kg total dose	SC, Intra- incisional	Once at the time of surgery, given locally before making surgical incision
Buprenorphine (Sustained-release)	1.2	SC	Once at the time of surgery (administered 30-60 minutes prior to incision)
NSAID (Choose one)	Meloxicam (Recommended): 2 Carprofen (Recommended): 5 Ketoprofen: 2-5	SC, IP, or PO	Prior to recovery from anesthesia (post-surgery day 1), on the next morning following surgery (post-surgery day 2), and, if signs of pain are evident, on next subsequent morning (post-surgery day 3).

Mouse Anesthesia and Analgesia

- **Severe Pain Anticipated (Examples):**

- Thoracotomy for cardiac manipulation
- Orthopedic / Trauma procedures (e.g. long-bone fractures, TBI, vertebral procedures)
- Abdominal surgeries with organ manipulation

Anesthesia: Ketamine-combination, Isoflurane

Analgesia: Bupivacaine/Lidocaine, Buprenorphine, NSAID

- **Peri-operative:** Bupivacaine/Lidocaine is given at the surgical site prior to incision.

- **Post-operative:**

- Buprenorphine is given immediately after animals recover from anesthesia, 4-8 hours post-surgery, on the next morning following surgery, and, if signs of pain are evident, on the next afternoon following surgery.
- A long-acting veterinary non-steroidal anti-inflammatory drug (NSAID) is given prior to recovery from anesthesia (post-surgery day 1), on the next morning following surgery (post-surgery day 2), and, if signs of pain are evident, on the next subsequent morning (post-surgery day 3).

Anesthesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Ketamine-combination (Choose one combination and combine in same syringe)	Ketamine-Xylazine (Recommended): 80-100 Ket+ 10-20 Xyl Ketamine-Xylazine-Acepromazine (Recommended): 70-100 Ket + 10-20 Xyl + 2-3 Ace Ketamine-Dexmedetomidine: 50-75 Ket + 0.25-0.5 Dex Ketamine-Midazolam: 80-100 Ket + 4-5 Mid	IP	Whenever general anesthesia is required
Isoflurane	1-3% inhalant to effect (up to 5% for induction)	Inhalant	Whenever general anesthesia is required
Analgesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Bupivacaine/Lidocaine (Choose one)	Bupivacaine (Recommended): Dilute to 0.25%, do not exceed 8 mg/kg total dose Lidocaine: Dilute to 0.5%, do not exceed 7 mg/kg total dose	SC, Intra-incisional	Once at the time of surgery, given locally before making surgical incision
Buprenorphine	0.05-0.1	SC or IP	Immediately after animals recover from anesthesia, 4-8 hours post-surgery, on the next morning following surgery, and, if signs of pain are evident, on the next afternoon following surgery
NSAID (Choose one)	Meloxicam (Recommended): 5-10 Carprofen (Recommended): ~5 Ketoprofen: 2-5	SC, IP, or PO	Prior to recovery from anesthesia (post-surgery day 1), on the next morning following surgery (post-surgery day 2), and, if signs of pain are evident, on the next subsequent morning (post-surgery day 3).

Rat Anesthesia and Analgesia

- **Severe Pain Anticipated (Examples):**

- Thoracotomy for cardiac manipulation
- Orthopedic / Trauma procedures (e.g. long-bone fractures, TBI, vertebral procedures)
- Abdominal surgeries with organ manipulation

Anesthesia: Ketamine-combination, Isoflurane

Analgesia: Bupivacaine/Lidocaine, Buprenorphine, NSAID

- **Peri-operative:** Bupivacaine/Lidocaine is given at the surgical site prior to incision.

- **Post-operative:**

- Buprenorphine is given immediately after animals recover from anesthesia, 4-8 hours post-surgery, on the next morning following surgery, and, if signs of pain are evident, on the next afternoon following surgery.
- A long-acting veterinary non-steroidal anti-inflammatory drug (NSAID) is prior to recovery from anesthesia (post-surgery day 1), on the next morning following surgery (post-surgery day 2), and, as needed, if signs of pain are evident, on the next subsequent morning (post-surgery day 3).

Anesthesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Ketamine-combination (Choose one combination and combine in same syringe)	Ketamine-Xylazine (Recommended): 40-80 Ket+ 5-10 Xyl Ketamine-Xylazine-Acepromazine (Recommended): 40-80 Ket + 8 Xyl + 4 Ace Ketamine-Dexmedetomidine: 60-75 Ket + 0.25-0.5 Dex	IP	Whenever general anesthesia is required
Isoflurane	1-3% inhalant to effect (up to 5% for induction)	Inhalant	Whenever general anesthesia is required
Analgesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Bupivacaine/Lidocaine (Choose one)	Bupivacaine (Recommended): Dilute to 0.25%, do not exceed 8 mg/kg total dose Lidocaine: Dilute to 0.5%, do not exceed 7 mg/kg total dose	SC, Intra-incisional	Once at the time of surgery, given locally before making surgical incision
Buprenorphine	0.01-0.05	SC, IP	Immediately after animals recover from anesthesia, 4-8 hours post-surgery, on the next morning following surgery, and, as needed, if signs of pain are evident, on the next afternoon following surgery
NSAID (Choose one)	Meloxicam (Recommended): 2 Carprofen (Recommended): 5 Ketoprofen: 2-5	SC, IP, or PO	Immediately after animals recover from anesthesia (post-surgery day 1), on the next morning following surgery (post-surgery day 2), and, as needed, if signs of pain are evident, on the next subsequent morning

Mouse Anesthesia and Analgesia

- **Severe Pain Anticipated (Examples):**

- Thoracotomy for cardiac manipulation
- Orthopedic / Trauma procedures (e.g. long-bone fractures, TBI, vertebral procedures)
- Abdominal surgeries with organ manipulation

Anesthesia: Isoflurane

Analgesia: Bupivacaine/Lidocaine, Buprenorphine, NSAID

- **Pre-operative:** Buprenorphine is given once at the time of surgery, administered 30-60 minutes prior to incision.
- **Peri-operative:** Bupivacaine/Lidocaine is given at the surgical site prior to incision.
- **Post-operative:**
 - Buprenorphine is given 4-8 hours post-surgery, on the next morning following surgery, and, if signs of pain are evident, on the next afternoon following surgery.
 - A long-acting veterinary non-steroidal anti-inflammatory drug (NSAID) is given prior to recovery from anesthesia (post-surgery day 1), on the next morning following surgery (post-surgery day 2), and, as needed if signs of pain are evident, on the next subsequent morning (post-surgery day 3).

Anesthesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Isoflurane	1-3% inhalant to effect (up to 5% for induction)	Inhalant	Whenever general anesthesia is required
Analgesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Bupivacaine/Lidocaine (Choose one)	Bupivacaine (Recommended): Dilute to 0.25%, do not exceed 8 mg/kg total dose Lidocaine: Dilute to 0.5%, do not exceed 7 mg/kg total dose	SC, Intra- incisional	Once at the time of surgery, given locally before making surgical incision
Buprenorphine	0.05-0.1	SC, IP	Once at the time of surgery (administered 30-60 minutes prior to incision), 4-8 hours post-surgery, on the next morning following surgery, and, if signs of pain are evident, on the next afternoon following surgery
NSAID (Choose one)	Meloxicam (Recommended): 5-10 Carprofen (Recommended): ~5 Ketoprofen: 2-5	SC, IP, or PO	Prior to recovery from anesthesia (post-surgery day 1), on the next morning following surgery (post-surgery day 2), and, if signs of pain are evident, on the next subsequent morning (post-surgery day 3).

Rat Anesthesia and Analgesia

- **Severe Pain Anticipated (Examples):**

- Thoracotomy for cardiac manipulation
- Orthopedic / Trauma procedures (e.g. long-bone fractures, TBI, vertebral procedures)
- Abdominal surgeries with organ manipulation

Anesthesia: Isoflurane

Analgesia: Bupivacaine/Lidocaine, Buprenorphine, NSAID

- **Pre-operative:** Buprenorphine is given once at the time of surgery, administered 30-60 minutes prior to incision.
- **Peri-operative:** Bupivacaine/Lidocaine is given at the surgical site prior to incision.
- **Post-operative:**
 - Buprenorphine is given 4-8 hours post-surgery, on the next morning following surgery, and, if signs of pain are evident, on the next afternoon following surgery.
 - A long-acting veterinary non-steroidal anti-inflammatory drug (NSAID) is given prior to recovery from anesthesia (post-surgery day 1), on the next morning following surgery (post-surgery day 2), and, as needed if signs of pain are evident, on the next subsequent morning (post-surgery day 3).

Anesthesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Isoflurane	1-3% inhalant to effect (up to 5% for induction)	Inhalant	Whenever general anesthesia is required
Analgesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Bupivacaine/Lidocaine (Choose one)	Bupivacaine (Recommended): Dilute to 0.25%, do not exceed 8 mg/kg total dose Lidocaine: Dilute to 0.5%, do not exceed 7 mg/kg total dose	SC, Intra- incisional	Once at the time of surgery, given locally before making surgical incision
Buprenorphine	0.01-0.05	SC, IP	Once at the time of surgery (administered 30-60 minutes prior to incision), 4-8 hours post-surgery, on the next morning following surgery, and, if signs of pain are evident, on the next afternoon following surgery
NSAID (Choose one)	Meloxicam (Recommended): 2 Carprofen (Recommended): 5 Ketoprofen: 2-5	SC, IP, or PO	Prior to recovery from anesthesia (post-surgery day 1), on the next morning following surgery (post-surgery day 2), and, if signs of pain are evident, on the next subsequent morning (post-surgery day 3).

Mouse Anesthesia and Analgesia

- **Severe Pain Anticipated (Examples):**
 - Thoracotomy for cardiac manipulation
 - Orthopedic / Trauma procedures (e.g. long-bone fractures, TBI, vertebral procedures)
 - Abdominal surgeries with organ manipulation
- **NSAIDs must be avoided**

Anesthesia: Isoflurane

Analgesia: Bupivacaine/Lidocaine, Sustained-release Buprenorphine

- **Pre-operative:** Sustained-release buprenorphine is given once at the time of surgery, administered 30-60 minutes prior to incision.
- **Peri-operative:** Bupivacaine/Lidocaine is given at the surgical site prior to incision.
- **Post-operative:** If signs of pain are evident during post-operative monitoring, consult with LARC veterinary staff.

Anesthesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Isoflurane	1-3% inhalant to effect (up to 5% for induction)	Inhalant	Whenever general anesthesia is required
Analgesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Bupivacaine/Lidocaine (Choose one)	Bupivacaine (Recommended): Dilute to 0.25%, do not exceed 8 mg/kg total dose Lidocaine: Dilute to 0.5%, do not exceed 7 mg/kg total dose	SC, Intra- incisional	Once at the time of surgery, given locally before making surgical incision
Buprenorphine (Sustained-Release)	1.5	SC	Once at the time of surgery (administered 30-60 minutes prior to incision). If signs of pain are evident during post-operative monitoring, consult with LARC veterinary staff.

Rat Anesthesia and Analgesia

- **Severe Pain Anticipated (Examples):**
 - Thoracotomy for cardiac manipulation
 - Orthopedic / Trauma procedures (e.g. long-bone fractures, TBI, vertebral procedures)
 - Abdominal surgeries with organ manipulation
- **NSAIDs must be avoided**

Anesthesia: Isoflurane

Analgesia: Bupivacaine/Lidocaine, Sustained-release Buprenorphine

- **Pre-operative:** Sustained-release buprenorphine is given once at the time of surgery, administered 30-60 minutes prior to incision.
- **Peri-operative:** Bupivacaine/Lidocaine is given at the surgical site prior to incision.
- **Post-operative:** If signs of pain are evident during post-operative monitoring, consult with LARC veterinary staff.

Anesthesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Isoflurane	1-3% inhalant to effect (up to 5% for induction)	Inhalant	Whenever general anesthesia is required
Analgesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Bupivacaine/Lidocaine (Choose one)	Bupivacaine (Recommended): Dilute to 0.25%, do not exceed 8 mg/kg total dose Lidocaine: Dilute to 0.5%, do not exceed 7 mg/kg total dose	SC, Intra- incisional	Once at the time of surgery, given locally before making surgical incision
Buprenorphine (Sustained-Release)	1.2	SC	Once at the time of surgery (administered 30-60 minutes prior to incision). If signs of pain are evident during post-operative monitoring, consult with LARC veterinary staff.

Mouse Anesthesia and Analgesia

- **Severe Pain Anticipated (Examples):**
 - Thoracotomy for cardiac manipulation
 - Orthopedic / Trauma procedures (e.g. long-bone fractures, TBI, vertebral procedures)
 - Abdominal surgeries with organ manipulation
- **NSAIDs must be avoided**

Anesthesia: Ketamine-combination, Isoflurane

Analgesia: Bupivacaine/Lidocaine, Sustained-release Buprenorphine

- **Peri-operative:** Bupivacaine/Lidocaine is given at the surgical site prior to incision.
- **Post-operative:** Sustained-release buprenorphine is given immediately after animals recover from anesthesia. If signs of pain are evident during post-operative monitoring, consult with LARC veterinary staff.

Anesthesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Ketamine-combination (Choose one combination and combine in same syringe)	Ketamine-Xylazine (Recommended): 80-100 Ket+ 5-10 Xyl Ketamine-Xylazine-Acepromazine (Recommended): 70-100 Ket + 10-20 Xyl + 2-3 Ace Ketamine-Dexmedetomidine: 50-75 Ket + 0.25-0.5 Dex Ketamine-Midazolam: 80-100 Ket + 4-5 Mid	IP	Whenever general anesthesia is required
Isoflurane	1-3% inhalant to effect (up to 5% for induction)	Inhalant	Whenever general anesthesia is required
Analgesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Bupivacaine/Lidocaine (Choose one)	Bupivacaine (Recommended): Dilute to 0.25%, do not exceed 8 mg/kg total dose Lidocaine: Dilute to 0.5%, do not exceed 7 mg/kg total dose	SC, Intra-incisional	Once at the time of surgery, given locally before making surgical incision
Buprenorphine (Sustained-Release)	1.5	SC	Immediately after animals recover from anesthesia. If signs of pain are evident during post-operative monitoring, consult with LARC veterinary staff

Rat Anesthesia and Analgesia

- **Severe Pain Anticipated (Examples):**
 - Thoracotomy for cardiac manipulation
 - Orthopedic / Trauma procedures (e.g. long-bone fractures, TBI, vertebral procedures)
 - Abdominal surgeries with organ manipulation
- **NSAIDs must be avoided**

Anesthesia: Ketamine-combination, Isoflurane

Analgesia: Bupivacaine/Lidocaine, Sustained-release Buprenorphine

- **Peri-operative:** Bupivacaine/Lidocaine is given at the surgical site prior to incision.
- **Post-operative:** Sustained-release buprenorphine is given immediately after animals recover from anesthesia. If signs of pain are evident during post-operative monitoring, consult with LARC veterinary staff.

Anesthesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Ketamine-combination (Choose one combination and combine in same syringe)	<p>Ketamine-Xylazine (Recommended): 40-80 Ket+ 5-10 Xyl</p> <p>Ketamine-Xylazine-Acepromazine (Recommended): 40-80 Ket + 8 Xyl + 4 Ace</p> <p>Ketamine-Dexmedetomidine: 60-75 Ket + 0.25-0.5 Dex</p>	IP	Whenever general anesthesia is required
Isoflurane	1-3% inhalant to effect (up to 5% for induction)	Inhalant	Whenever general anesthesia is required
Analgesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Bupivacaine/Lidocaine (Choose one)	<p>Bupivacaine (Recommended): Dilute to 0.25%, do not exceed 8 mg/kg total dose</p> <p>Lidocaine: Dilute to 0.5%, do not exceed 7 mg/kg total dose</p>	SC, Intra-incisional	Once at the time of surgery, given locally before making surgical incision
Buprenorphine (Sustained-Release)	1.2	SC	Immediately after animals recover from anesthesia. If signs of pain are evident during post-operative monitoring, consult with LARC veterinary staff.

Mouse Anesthesia and Analgesia

- **Severe Pain Anticipated (Examples):**
 - Thoracotomy for cardiac manipulation
 - Orthopedic / Trauma procedures (e.g. long-bone fractures, TBI, vertebral procedures)
 - Abdominal surgeries with organ manipulation
- **NSAIDs must be avoided**

Anesthesia: Isoflurane

Analgesia: Bupivacaine/Lidocaine, Buprenorphine

- **Pre-operative:** Buprenorphine is given once at the time of surgery, administered 30-60 minutes prior to incision.
- **Peri-operative:** Bupivacaine/Lidocaine is given at the surgical site prior to incision.
- **Post-operative:** Buprenorphine is given 4-8 hours post-surgery, on the next morning following surgery, and on the next afternoon following surgery.

Anesthesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Isoflurane	1-3% inhalant to effect (up to 5% for induction)	Inhalant	Whenever general anesthesia is required
Analgesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Bupivacaine/Lidocaine (Choose one)	Bupivacaine (Recommended): Dilute to 0.25%, do not exceed 8 mg/kg total dose Lidocaine: Dilute to 0.5%, do not exceed 7 mg/kg total dose	SC, Intra-incisional	Once at the time of surgery, given locally before making surgical incision
Buprenorphine	0.05-0.1	SC or IP	Once at the time of surgery (administered 30-60 minutes prior to incision), 4-8 hours post-surgery, on the next morning following surgery, and on the next afternoon following surgery

Rat Anesthesia and Analgesia

- **Severe Pain Anticipated (Examples):**
 - Thoracotomy for cardiac manipulation
 - Orthopedic / Trauma procedures (e.g. long-bone fractures, TBI, vertebral procedures)
 - Abdominal surgeries with organ manipulation
- **NSAIDs must be avoided**

Anesthesia: Isoflurane

Analgesia: Bupivacaine/Lidocaine, Buprenorphine

- **Pre-operative:** Buprenorphine is given once at the time of surgery, administered 30-60 minutes prior to incision.
- **Peri-operative:** Bupivacaine/Lidocaine is given at the surgical site prior to incision.
- **Post-operative:** Buprenorphine is given 4-8 hours post-surgery, on the next morning following surgery, and on the next afternoon following surgery.

Anesthesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Isoflurane	1-3% inhalant to effect (up to 5% for induction)	Inhalant	Whenever general anesthesia is required
Analgesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Bupivacaine/Lidocaine (Choose one)	Bupivacaine (Recommended): Dilute to 0.25%, do not exceed 8 mg/kg total dose Lidocaine: Dilute to 0.5%, do not exceed 7 mg/kg total dose	SC, Intra-incisional	Once at the time of surgery, given locally before making surgical incision
Buprenorphine	0.01-0.05	SC or IP	Once at the time of surgery (administered 30-60 minutes prior to incision), 4-8 hours post-surgery, on the next morning following surgery, and on the next afternoon following surgery

Mouse Anesthesia and Analgesia

- **Severe Pain Anticipated (Examples):**
 - Thoracotomy for cardiac manipulation
 - Orthopedic / Trauma procedures (e.g. long-bone fractures, TBI, vertebral procedures)
 - Abdominal surgeries with organ manipulation
- **NSAIDs must be avoided**

Anesthesia: Ketamine-combination, Isoflurane

Analgesia: Bupivacaine/Lidocaine, Buprenorphine

- **Peri-operative:** Bupivacaine/Lidocaine is given at the surgical site prior to incision.
- **Post-operative:** Buprenorphine is given immediately after animals recover from anesthesia, 4-8 hours post-surgery, on the next morning following surgery, and on the next afternoon following surgery.

Anesthesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Ketamine-combination (Choose one combination and combine in same syringe)	<p>Ketamine-Xylazine (Recommended): 80-100 Ket+ 5-10 Xyl</p> <p>Ketamine-Xylazine-Acepromazine (Recommended): 70-100 Ket + 10-20 Xyl + 2-3 Ace</p> <p>Ketamine-Dexmedetomidine: 50-75 Ket + 0.25-0.5 Dex</p> <p>Ketamine-Midazolam: 80-100 Ket + 4-5 Mid</p>	IP	Whenever general anesthesia is required
Isoflurane	1-3% inhalant to effect (up to 5% for induction)	Inhalant	Whenever general anesthesia is required
Analgesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Bupivacaine/Lidocaine (Choose one)	<p>Bupivacaine (Recommended): Dilute to 0.25%, do not exceed 8 mg/kg total dose</p> <p>Lidocaine: Dilute to 0.5%, do not exceed 7 mg/kg total dose</p>	SC, Intra-incisional	Once at the time of surgery, given locally before making surgical incision
Buprenorphine	0.05-0.1	SC or IP	Once immediately after animals recover from anesthesia, 4-8 hours post-surgery, on the next morning following surgery, and on the next afternoon following surgery

Rat Anesthesia and Analgesia

- **Severe Pain Anticipated (Examples):**
 - Thoracotomy for cardiac manipulation
 - Orthopedic / Trauma procedures (e.g. long-bone fractures, TBI, vertebral procedures)
 - Abdominal surgeries with organ manipulation
- **NSAIDs must be avoided**

Anesthesia: Ketamine-combination, Isoflurane

Analgesia: Bupivacaine/Lidocaine, Buprenorphine

- **Peri-operative:** Bupivacaine/Lidocaine is given at the surgical site prior to incision.
- **Post-operative:** Buprenorphine is given immediately after animals recover from anesthesia, 4-8 hours post-surgery, on the next morning following surgery, and on the next afternoon following surgery.

Anesthesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Ketamine-combination (Choose one combination and combine in same syringe)	<p>Ketamine-Xylazine (Recommended): 40-80 Ket+ 5-10 Xyl</p> <p>Ketamine-Xylazine-Acepromazine (Recommended): 40-80 Ket + 8 Xyl + 4 Ace</p> <p>Ketamine-Dexmedetomidine: 60-75 Ket + 0.25-0.5 Dex</p>	IP	Whenever general anesthesia is required
Isoflurane	1-3% inhalant to effect (up to 5% for induction)	Inhalant	Whenever general anesthesia is required
Analgesia Agent	Dose Range (mg/kg)	Route	Frequency & Total Duration
Bupivacaine/Lidocaine (Choose one)	<p>Bupivacaine (Recommended): Dilute to 0.25%, do not exceed 8 mg/kg total dose</p> <p>Lidocaine: Dilute to 0.5%, do not exceed 7 mg/kg total dose</p>	SC, Intra-incisional	Once at the time of surgery, given locally before making surgical incision
Buprenorphine	0.01-0.05	SC or IP	Once immediately after animals recover from anesthesia, 4-8 hours post-surgery, on the next morning following surgery, and on the next afternoon following surgery

Mouse Anesthesia/Surgery/Post-Operative Record

PI		Protocol # AN		
Personnel		Surgery Type Survival		
Date		Experimental agents administered		
Procedure name				
Anesthetics used	(1) Isoflurane	Dose + Route (mg/kg)	(1) 1%-5% to effect	(1) Inhalation
Analgesics used (All must be used)	(1) Lidocaine -OR- Bupivacaine (2) Buprenorphine (3) Meloxicam -OR- Carprofen	Dose + Route (mg/kg)	(1) < 7-8 (2) 0.05-0.1 (3) 5-10 (Mel) -OR- ~5 (Car)	(1) Local (2) SC/IP (3) SC/IP/PO
<input type="checkbox"/> Ophthalmic ointment administered in eyes of all anesthetized animals <input type="checkbox"/> Heat provided during surgery and recovery <input type="checkbox"/> Pedal reflex (pinch at both foot pads) checked periodically during surgery to evaluate depth of anesthesia <input type="checkbox"/> Green surgery tag affixed to cage card or onto cage				

Circle Animal ID	Cage ID				
Body weight (grams)					
Anesthesia start time					
Analgesics Name	Time and volume administered				
Lidocaine -OR- Bupivacaine					
Buprenorphine					
Meloxicam -OR- Carprofen					
Other Agents Name	Time and dosage/volume administered				
Anesthesia end time					
Complications? Y/N					

Note complications here and on back of page if needed:

POST-OPERATIVE

- Record dates and times of post-op observations or analgesic administrations.
- Checkboxes below indicate required doses of analgesia. If an NSOP checkbox is also included in the same details section, observe animals for signs of pain. If pain is observed, administer analgesic(s) and re-evaluate at time point when next analgesic administration is due. If no pain is observed, mark the NSOP checkbox.
- Once post-surgical pain assessment has concluded, all other monitoring will continue as approved per protocol.

Animal or Cage ID #					
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Mel/Car	<input type="checkbox"/> Mel/Car	<input type="checkbox"/> Mel/Car	<input type="checkbox"/> Mel/Car	<input type="checkbox"/> Mel/Car
Date/Time					
NSOP or Analgesic details					
Date/Time					
NSOP or Analgesic details					

Rat Anesthesia/Surgery/Post-Operative Record

PI		Protocol # AN		
Personnel		Surgery Type Survival		
Date		Experimental agents administered		
Procedure name				
Anesthetics used	(1) Isoflurane	Dose + Route (mg/kg)	(1) 1%-5% to effect	(1) Inhalation
Analgesics used (All must be used)	(1) Lidocaine -OR- Bupivacaine (2) Buprenorphine (3) Meloxicam -OR- Carprofen	Dose + Route (mg/kg)	(1) < 7-8 (2) 0.01-0.05 (3) 2 (Mel) -OR- 5 (Car)	(1) Local (2) SC/IP (3) SC/IP/PO
<input type="checkbox"/> Ophthalmic ointment administered in eyes of all anesthetized animals <input type="checkbox"/> Heat provided during surgery and recovery <input type="checkbox"/> Pedal reflex (pinch at both foot pads) checked periodically during surgery to evaluate depth of anesthesia <input type="checkbox"/> Green surgery tag affixed to cage card or onto cage				

Circle	Animal ID	Cage ID				
Body weight (grams)						
Anesthesia start time						
Analgesics	Name	Time and volume administered				
	Lidocaine -OR- Bupivacaine					
	Buprenorphine					
	Meloxicam -OR- Carprofen					
Other Agents	Name	Time and dosage/volume administered				
Anesthesia end time						
Complications? Y/N						

Note complications here and on back of page if needed:

POST-OPERATIVE

- Record dates and times of post-op observations or analgesic administrations.
- Checkboxes below indicate required doses of analgesia. If an NSOP checkbox is also included in the same details section, observe animals for signs of pain. If pain is observed, administer analgesic(s) and re-evaluate at time point when next analgesic administration is due. If no pain is observed, mark the NSOP checkbox.
- Once post-surgical pain assessment has concluded, all other monitoring will continue as approved per protocol.

Animal or Cage ID #					
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Mel/Car	<input type="checkbox"/> Mel/Car	<input type="checkbox"/> Mel/Car	<input type="checkbox"/> Mel/Car	<input type="checkbox"/> Mel/Car
Date/Time					
NSOP or Analgesic details					
Date/Time					
NSOP or Analgesic details					

Mouse Anesthesia/Surgery/Post-Operative Record

PI		Protocol #		
Personnel		Surgery Type Survival		
Date		Experimental agents administered		
Procedure name				
Anesthetics used	(1) Isoflurane (2) Ketamine + Xylazine	Dose + Route (mg/kg)	(1) 1%-5% to effect (2) 80-100 K + 10-20 X	(1) Inhalation (2) IP
Analgesics used (All must be used)	(1) Lidocaine -OR- Bupivacaine (2) Buprenorphine (3) Meloxicam -OR- Carprofen	Dose + Route (mg/kg)	(1) < 7-8 (2) 0.05-0.1 (3) 5-10 (Mel) -OR- ~5 (Car)	(1) Local (2) SC/IP (3) SC/IP/PO
<input type="checkbox"/> Ophthalmic ointment administered in eyes of all anesthetized animals <input type="checkbox"/> Heat provided during surgery and recovery <input type="checkbox"/> Pedal reflex (pinch at both foot pads) checked periodically during surgery to evaluate depth of anesthesia <input type="checkbox"/> Green surgery tag affixed to cage card or onto cage				

Circle	Animal ID	Cage ID				
Body weight (grams)						
Anesthesia start time						
Analgesics	Name	Time and volume administered				
	Lidocaine -OR- Bupivacaine					
	Buprenorphine					
	Meloxicam -OR- Carprofen					
Other Agents	Name	Time and dosage/volume administered				
Anesthesia end time						
Complications? Y/N						

Note complications here and on back of page if needed:

POST-OPERATIVE

- Record dates and times of post-op observations or analgesic administrations.
- Checkboxes below indicate required doses of analgesia. If an NSOP checkbox is also included in the same details section, observe animals for signs of pain. If pain is observed, administer analgesic(s) and re-evaluate at time point when next analgesic administration is due. If no pain is observed, mark the NSOP checkbox.
- Once post-surgical pain assessment has concluded, all other monitoring will continue as approved per protocol.

Animal or Cage ID #					
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Mel/Car	<input type="checkbox"/> Mel/Car	<input type="checkbox"/> Mel/Car	<input type="checkbox"/> Mel/Car	<input type="checkbox"/> Mel/Car
Date/Time					
NSOP or Analgesic details					
Date/Time					
NSOP or Analgesic details					

Rat Anesthesia/Surgery/Post-Operative Record

PI		Protocol # AN		
Personnel		Surgery Type Survival		
Date		Experimental agents administered		
Procedure name				
Anesthetics used	(1) Isoflurane (2) Ketamine + Xylazine	Dose + Route (mg/kg)	(1) 1%-5% to effect (2) 40-80 K + 5-10 X	(1) Inhalation (2) IP
Analgesics used (All must be used)	(1) Lidocaine -OR- Bupivacaine (2) Buprenorphine (3) Meloxicam -OR- Carprofen	Dose + Route (mg/kg)	(1) < 7-8 (2) 0.01-0.05 (3) 2 (Mel) -OR- 5 (Car)	(1) Local (2) SC/IP (3) SC/IP/PO
<input type="checkbox"/> Ophthalmic ointment administered in eyes of all anesthetized animals <input type="checkbox"/> Heat provided during surgery and recovery <input type="checkbox"/> Pedal reflex (pinch at both foot pads) checked periodically during surgery to evaluate depth of anesthesia <input type="checkbox"/> Green surgery tag affixed to cage card or onto cage				

Circle	Animal ID	Cage ID				
Body weight (grams)						
Anesthesia start time						
Analgesics	Name	Time and volume administered				
	Lidocaine -OR- Bupivacaine					
	Buprenorphine					
	Meloxicam -OR- Carprofen					
Other Agents	Name	Time and dosage/volume administered				
Anesthesia end time						
Complications? Y/N						

Note complications here and on back of page if needed:

POST-OPERATIVE

- Record dates and times of post-op observations or analgesic administrations.
- Checkboxes below indicate required doses of analgesia. If an NSOP checkbox is also included in the same details section, observe animals for signs of pain. If pain is observed, administer analgesic(s) and re-evaluate at time point when next analgesic administration is due. If no pain is observed, mark the NSOP checkbox.
- Once post-surgical pain assessment has concluded, all other monitoring will continue as approved per protocol.

Animal or Cage ID #					
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Mel/Car	<input type="checkbox"/> Mel/Car	<input type="checkbox"/> Mel/Car	<input type="checkbox"/> Mel/Car	<input type="checkbox"/> Mel/Car
Date/Time					
NSOP or Analgesic details					
Date/Time					
NSOP or Analgesic details					

Mouse Anesthesia/Surgery/Post-Operative Record

PI		Protocol # AN		
Personnel		Surgery Type Survival		
Date		Experimental agents administered		
Procedure name				
Anesthetics used	(1) Isoflurane	Dose + Route (mg/kg)	(1) 1%-5% to effect	(1) Inhalation
Analgesics used (All must be used)	(1) Lidocaine -OR- Bupivacaine (2) Buprenorphine	Dose + Route (mg/kg)	(1) < 7-8 (2) 0.05-0.1	(1) Local (2) SC/IP
<input type="checkbox"/> Ophthalmic ointment administered in eyes of all anesthetized animals <input type="checkbox"/> Heat provided during surgery and recovery <input type="checkbox"/> Pedal reflex (pinch at both foot pads) checked periodically during surgery to evaluate depth of anesthesia <input type="checkbox"/> Green surgery tag affixed to cage card or onto cage				

Circle	Animal ID	Cage ID				
Body weight (grams)						
Anesthesia start time						
Analgesics	Name	Time and volume administered				
	Lidocaine -OR- Bupivacaine					
	Buprenorphine					
Other Agents	Name	Time and dosage/volume administered				
Anesthesia end time						
Complications? Y/N						

Note complications here and on back of page if needed:

POST-OPERATIVE

- Record dates and times of post-op observations or analgesic administrations.
- Checkboxes below indicate required doses of analgesia. If an NSOP checkbox is also included in the same details section, observe animals for signs of pain. If pain is observed, administer analgesic(s) and re-evaluate at time point when next analgesic administration is due. If no pain is observed, mark the NSOP checkbox.
- Once post-surgical pain assessment has concluded, all other monitoring will continue as approved per protocol.

Animal or Cage ID #					
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP

Rat Anesthesia/Surgery/Post-Operative Record

PI		Protocol # AN		
Personnel		Surgery Type Survival		
Date		Experimental agents administered		
Procedure name				
Anesthetics used	(1) Isoflurane	Dose + Route (mg/kg)	(1) 1%-5% to effect	(1) Inhalation
Analgesics used (All must be used)	(1) Lidocaine -OR- Bupivacaine (2) Buprenorphine	Dose + Route (mg/kg)	(1) < 7-8 (2) 0.01-0.05	(1) Local (2) SC/IP
<input type="checkbox"/> Ophthalmic ointment administered in eyes of all anesthetized animals <input type="checkbox"/> Heat provided during surgery and recovery <input type="checkbox"/> Pedal reflex (pinch at both foot pads) checked periodically during surgery to evaluate depth of anesthesia <input type="checkbox"/> Green surgery tag affixed to cage card or onto cage				

Circle	Animal ID	Cage ID				
Body weight (grams)						
Anesthesia start time						
Analgesics	Name	Time and volume administered				
	Lidocaine -OR- Bupivacaine					
	Buprenorphine					
Other Agents	Name	Time and dosage/volume administered				
Anesthesia end time						
Complications? Y/N						

Note complications here and on back of page if needed:

POST-OPERATIVE

- Record dates and times of post-op observations or analgesic administrations.
- Checkboxes below indicate required doses of analgesia. If an NSOP checkbox is also included in the same details section, observe animals for signs of pain. If pain is observed, administer analgesic(s) and re-evaluate at time point when next analgesic administration is due. If no pain is observed, mark the NSOP checkbox.
- Once post-surgical pain assessment has concluded, all other monitoring will continue as approved per protocol.

Animal or Cage ID #					
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP

Mouse Anesthesia/Surgery/Post-Operative Record

PI		Protocol # AN		
Personnel		Surgery Type Survival		
Date		Experimental agents administered		
Procedure name				
Anesthetics used	(1) Isoflurane (2) Ketamine + Xylazine	Dose + Route (mg/kg)	(1) 1%-5% to effect (2) 80-100 K + 10-20 X	(1) Inhalation (2) IP
Analgesics used (All must be used)	(1) Lidocaine -OR- Bupivacaine (2) Buprenorphine	Dose + Route (mg/kg)	(1) < 7-8 (2) 0.05-0.1	(1) Local (2) SC/IP
<input type="checkbox"/> Ophthalmic ointment administered in eyes of all anesthetized animals <input type="checkbox"/> Heat provided during surgery and recovery <input type="checkbox"/> Pedal reflex (pinch at both foot pads) checked periodically during surgery to evaluate depth of anesthesia <input type="checkbox"/> Green surgery tag affixed to cage card or onto cage				

Circle Animal ID	Cage ID				
Body weight (grams)					
Anesthesia start time					
Analgesics Name	Time and volume administered				
Lidocaine -OR- Bupivacaine					
Buprenorphine					
Other Agents Name	Time and dosage/volume administered				
Anesthesia end time					
Complications? Y/N					

Note complications here and on back of page if needed:

POST-OPERATIVE

- Record dates and times of post-op observations or analgesic administrations.
- Checkboxes below indicate required doses of analgesia. If an NSOP checkbox is also included in the same details section, observe animals for signs of pain. If pain is observed, administer analgesic(s) and re-evaluate at time point when next analgesic administration is due. If no pain is observed, mark the NSOP checkbox.
- Once post-surgical pain assessment has concluded, all other monitoring will continue as approved per protocol.

Animal or Cage ID #					
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP

Rat Anesthesia/Surgery/Post-Operative Record

PI		Protocol # AN		
Personnel		Surgery Type Survival		
Date		Experimental agents administered		
Procedure name				
Anesthetics used	(1) Isoflurane (2) Ketamine + Xylazine	Dose + Route (mg/kg)	(1) 1%-5% to effect (2) 40-80 K + 5-10 X	(1) Inhalation (2) IP
Analgesics used (All must be used)	(1) Lidocaine -OR- Bupivacaine (2) Buprenorphine	Dose + Route (mg/kg)	(1) < 7-8 (2) 0.01-0.05	(1) Local (2) SC/IP
<input type="checkbox"/> Ophthalmic ointment administered in eyes of all anesthetized animals <input type="checkbox"/> Heat provided during surgery and recovery <input type="checkbox"/> Pedal reflex (pinch at both foot pads) checked periodically during surgery to evaluate depth of anesthesia <input type="checkbox"/> Green surgery tag affixed to cage card or onto cage				

Circle	Animal ID	Cage ID				
Body weight (grams)						
Anesthesia start time						
Analgesics	Name	Time and volume administered				
	Lidocaine -OR- Bupivacaine					
	Buprenorphine					
Other Agents	Name	Time and dosage/volume administered				
Anesthesia end time						
Complications? Y/N						

Note complications here and on back of page if needed:

POST-OPERATIVE

- Record dates and times of post-op observations or analgesic administrations.
- Checkboxes below indicate required doses of analgesia. If an NSOP checkbox is also included in the same details section, observe animals for signs of pain. If pain is observed, administer analgesic(s) and re-evaluate at time point when next analgesic administration is due. If no pain is observed, mark the NSOP checkbox.
- Once post-surgical pain assessment has concluded, all other monitoring will continue as approved per protocol.

Animal or Cage ID #					
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP

Mouse Anesthesia/Surgery/Post-Operative Record

PI		Protocol # AN		
Personnel		Surgery Type Survival		
Date		Experimental agents administered		
Procedure name				
Anesthetics used	(1) Isoflurane	Dose + Route (mg/kg)	(1) 1%-5% to effect	(1) Inhalation
Analgesics used (All must be used)	(1) Lidocaine -OR- Bupivacaine (2) Buprenorphine SR (3) Meloxicam -OR- Carprofen	Dose + Route (mg/kg)	(1) < 7-8 (2) 1.5 (3) 5-10 (Mel) -OR- ~5 (Car)	(1) Local (2) SC (3) SC/IP/PO
<input type="checkbox"/> Ophthalmic ointment administered in eyes of all anesthetized animals <input type="checkbox"/> Heat provided during surgery and recovery <input type="checkbox"/> Pedal reflex (pinch at both foot pads) checked periodically during surgery to evaluate depth of anesthesia <input type="checkbox"/> Green surgery tag affixed to cage card or onto cage				

Circle	Animal ID	Cage ID				
Body weight (grams)						
Anesthesia start time						
Analgesics	Name	Time and volume administered				
Lidocaine -OR- Bupivacaine						
Buprenorphine SR						
Meloxicam -OR- Carprofen						
Other Agents	Name	Time and dosage/volume administered				
Anesthesia end time						
Complications? Y/N						

Note complications here and on back of page if needed:

POST-OPERATIVE

- Record dates and times of post-op observations or analgesic administrations.
- Checkboxes below indicate required doses of analgesia. If an NSOP checkbox is also included in the same details section, observe animals for signs of pain. If pain is observed, administer analgesic(s) and re-evaluate at time point when next analgesic administration is due. If no pain is observed, mark the NSOP checkbox.
- Once post-surgical pain assessment has concluded, all other monitoring will continue as approved per protocol.

Animal or Cage ID #					
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Mel/Car	<input type="checkbox"/> Mel/Car	<input type="checkbox"/> Mel/Car	<input type="checkbox"/> Mel/Car	<input type="checkbox"/> Mel/Car
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Mel/Car <input type="checkbox"/> NSOP	<input type="checkbox"/> Mel/Car <input type="checkbox"/> NSOP	<input type="checkbox"/> Mel/Car <input type="checkbox"/> NSOP	<input type="checkbox"/> Mel/Car <input type="checkbox"/> NSOP	<input type="checkbox"/> Mel/Car <input type="checkbox"/> NSOP
Date/Time					
NSOP or Analgesic details					

Rat Anesthesia/Surgery/Post-Operative Record

PI		Protocol # AN		
Personnel		Surgery Type Survival		
Date		Experimental agents administered		
Procedure name				
Anesthetics used	(1) Isoflurane	Dose + Route (mg/kg)	(1) 1%-5% to effect	(1) Inhalation
Analgesics used (All must be used)	(1) Lidocaine -OR- Bupivacaine (2) Buprenorphine SR (3) Meloxicam -OR- Carprofen	Dose + Route (mg/kg)	(1) < 7-8 (2) 1.2 (3) 2 (Mel) -OR- 5 (Car)	(1) Local (2) SC (3) SC/IP/PO
<input type="checkbox"/> Ophthalmic ointment administered in eyes of all anesthetized animals <input type="checkbox"/> Heat provided during surgery and recovery <input type="checkbox"/> Pedal reflex (pinch at both foot pads) checked periodically during surgery to evaluate depth of anesthesia <input type="checkbox"/> Green surgery tag affixed to cage card or onto cage				

Circle	Animal ID	Cage ID				
Body weight (grams)						
Anesthesia start time						
Analgesics	Name	Time and volume administered				
Lidocaine -OR- Bupivacaine						
Buprenorphine SR						
Meloxicam -OR- Carprofen						
Other Agents	Name	Time and dosage/volume administered				
Anesthesia end time						
Complications? Y/N						

Note complications here and on back of page if needed:

POST-OPERATIVE

- Record dates and times of post-op observations or analgesic administrations.
- Checkboxes below indicate required doses of analgesia. If an NSOP checkbox is also included in the same details section, observe animals for signs of pain. If pain is observed, administer analgesic(s) and re-evaluate at time point when next analgesic administration is due. If no pain is observed, mark the NSOP checkbox.
- Once post-surgical pain assessment has concluded, all other monitoring will continue as approved per protocol.

Animal or Cage ID #					
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Mel/Car	<input type="checkbox"/> Mel/Car	<input type="checkbox"/> Mel/Car	<input type="checkbox"/> Mel/Car	<input type="checkbox"/> Mel/Car
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Mel/Car <input type="checkbox"/> NSOP	<input type="checkbox"/> Mel/Car <input type="checkbox"/> NSOP	<input type="checkbox"/> Mel/Car <input type="checkbox"/> NSOP	<input type="checkbox"/> Mel/Car <input type="checkbox"/> NSOP	<input type="checkbox"/> Mel/Car <input type="checkbox"/> NSOP
Date/Time					
NSOP or Analgesic details					

Mouse Anesthesia/Surgery/Post-Operative Record

PI		Protocol # AN		
Personnel		Surgery Type Survival		
Date		Experimental agents administered		
Procedure name				
Anesthetics used	(1) Isoflurane (2) Ketamine + Xylazine	Dose + Route (mg/kg)	(1) 1%-5% to effect (2) 80-100 K + 10-20 X	(1) Inhalation (2) IP
Analgesics used (All must be used)	(1) Lidocaine -OR- Bupivacaine (2) Buprenorphine (3) Meloxicam -OR- Carprofen	Dose + Route (mg/kg)	(1) < 7-8 (2) 0.05-0.1 (3) 5-10 (Mel) -OR- ~5 (Car)	(1) Local (2) SC/IP (3) SC/IP/PO
<input type="checkbox"/> Ophthalmic ointment administered in eyes of all anesthetized animals <input type="checkbox"/> Heat provided during surgery and recovery <input type="checkbox"/> Pedal reflex (pinch at both foot pads) checked periodically during surgery to evaluate depth of anesthesia <input type="checkbox"/> Green surgery tag affixed to cage card or onto cage				

Circle	Animal ID	Cage ID				
Body weight (grams)						
Anesthesia start time						
Analgesics	Name	Time and volume administered				
Lidocaine -OR- Bupivacaine						
Buprenorphine						
Meloxicam -OR- Carprofen						
Other Agents	Name	Time and dosage/volume administered				
Anesthesia end time						
Complications? Y/N						

Note complications here and on back of page if needed:

POST-OPERATIVE

- Record dates and times of post-op observations or analgesic administrations.
- Checkboxes below indicate required doses of analgesia. If an NSOP checkbox is also included in the same details section, observe animals for signs of pain. If pain is observed, administer analgesic(s) and re-evaluate at time point when next analgesic administration is due. If no pain is observed, mark the NSOP checkbox.
- Once post-surgical pain assessment has concluded, all other monitoring will continue as approved per protocol.

Animal or Cage ID #					
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup <input type="checkbox"/> Mel/Car	<input type="checkbox"/> Bup <input type="checkbox"/> Mel/Car	<input type="checkbox"/> Bup <input type="checkbox"/> Mel/Car	<input type="checkbox"/> Bup <input type="checkbox"/> Mel/Car	<input type="checkbox"/> Bup <input type="checkbox"/> Mel/Car
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP

Rat Anesthesia/Surgery/Post-Operative Record

PI		Protocol # AN		
Personnel		Surgery Type Survival		
Date		Experimental agents administered		
Procedure name				
Anesthetics used	(1) Isoflurane (2) Ketamine + Xylazine	Dose + Route (mg/kg)	(1) 1%-5% to effect (2) 40-80 K + 5-10 X	(1) Inhalation (2) IP
Analgesics used (All must be used)	(1) Lidocaine -OR- Bupivacaine (2) Buprenorphine (3) Meloxicam -OR- Carprofen	Dose + Route (mg/kg)	(1) < 7-8 (2) 0.01-0.05 (3) 2 (Mel) -OR- 5 (Car)	(1) Local (2) SC/IP (3) SC/IP/PO
<input type="checkbox"/> Ophthalmic ointment administered in eyes of all anesthetized animals <input type="checkbox"/> Heat provided during surgery and recovery <input type="checkbox"/> Pedal reflex (pinch at both foot pads) checked periodically during surgery to evaluate depth of anesthesia <input type="checkbox"/> Green surgery tag affixed to cage card or onto cage				

Circle	Animal ID	Cage ID				
Body weight (grams)						
Anesthesia start time						
Analgesics	Name	Time and volume administered				
Lidocaine -OR- Bupivacaine						
Buprenorphine						
Meloxicam -OR- Carprofen						
Other Agents	Name	Time and dosage/volume administered				
Anesthesia end time						
Complications? Y/N						

Note complications here and on back of page if needed:

POST-OPERATIVE

- Record dates and times of post-op observations or analgesic administrations.
- Checkboxes below indicate required doses of analgesia. If an NSOP checkbox is also included in the same details section, observe animals for signs of pain. If pain is observed, administer analgesic(s) and re-evaluate at time point when next analgesic administration is due. If no pain is observed, mark the NSOP checkbox.
- Once post-surgical pain assessment has concluded, all other monitoring will continue as approved per protocol.

Animal or Cage ID #					
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup <input type="checkbox"/> Mel/Car	<input type="checkbox"/> Bup <input type="checkbox"/> Mel/Car	<input type="checkbox"/> Bup <input type="checkbox"/> Mel/Car	<input type="checkbox"/> Bup <input type="checkbox"/> Mel/Car	<input type="checkbox"/> Bup <input type="checkbox"/> Mel/Car
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP

Mouse Anesthesia/Surgery/Post-Operative Record

PI		Protocol # AN		
Personnel		Surgery Type Survival		
Date		Experimental agents administered		
Procedure name				
Anesthetics used	(1) Isoflurane	Dose + Route (mg/kg)	(1) 1%-5% to effect	(1) Inhalation
Analgesics used (All must be used)	(1) Lidocaine -OR- Bupivacaine (2) Buprenorphine (3) Meloxicam -OR- Carprofen	Dose + Route (mg/kg)	(1) < 7-8 (2) 0.05-0.1 (3) 5-10 (Mel) -OR- ~5 (Car)	(1) Local (2) SC/IP (3) SC/IP/PO
<input type="checkbox"/> Ophthalmic ointment administered in eyes of all anesthetized animals <input type="checkbox"/> Heat provided during surgery and recovery <input type="checkbox"/> Pedal reflex (pinch at both foot pads) checked periodically during surgery to evaluate depth of anesthesia <input type="checkbox"/> Green surgery tag affixed to cage card or onto cage				

Circle	Animal ID	Cage ID				
Body weight (grams)						
Anesthesia start time						
Analgesics	Name	Time and volume administered				
	Lidocaine -OR- Bupivacaine					
	Buprenorphine					
	Meloxicam -OR- Carprofen					
Other Agents	Name	Time and dosage/volume administered				
Anesthesia end time						
Complications? Y/N						

Note complications here and on back of page if needed:

POST-OPERATIVE

- Record dates and times of post-op observations or analgesic administrations.
- Checkboxes below indicate required doses of analgesia. If an NSOP checkbox is also included in the same details section, observe animals for signs of pain. If pain is observed, administer analgesic(s) and re-evaluate at time point when next analgesic administration is due. If no pain is observed, mark the NSOP checkbox.
- Once post-surgical pain assessment has concluded, all other monitoring will continue as approved per protocol.

Animal or Cage ID #					
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup <input type="checkbox"/> Mel/Car	<input type="checkbox"/> Bup <input type="checkbox"/> Mel/Car	<input type="checkbox"/> Bup <input type="checkbox"/> Mel/Car	<input type="checkbox"/> Bup <input type="checkbox"/> Mel/Car	<input type="checkbox"/> Bup <input type="checkbox"/> Mel/Car
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP

Rat Anesthesia/Surgery/Post-Operative Record

PI		Protocol # AN		
Personnel		Surgery Type Survival		
Date		Experimental agents administered		
Procedure name				
Anesthetics used	(1) Isoflurane	Dose + Route (mg/kg)	(1) 1%-5% to effect	(1) Inhalation
Analgesics used (All must be used)	(1) Lidocaine -OR- Bupivacaine (2) Buprenorphine (3) Meloxicam -OR- Carprofen	Dose + Route (mg/kg)	(1) < 7-8 (2) 0.01-0.05 (3) 2 (Mel) -OR- 5 (Car)	(1) Local (2) SC/IP (3) SC/IP/PO
<input type="checkbox"/> Ophthalmic ointment administered in eyes of all anesthetized animals <input type="checkbox"/> Heat provided during surgery and recovery <input type="checkbox"/> Pedal reflex (pinch at both foot pads) checked periodically during surgery to evaluate depth of anesthesia <input type="checkbox"/> Green surgery tag affixed to cage card or onto cage				

Circle	Animal ID	Cage ID				
Body weight (grams)						
Anesthesia start time						
Analgesics	Name	Time and volume administered				
	Lidocaine -OR- Bupivacaine					
	Buprenorphine					
	Meloxicam -OR- Carprofen					
Other Agents	Name	Time and dosage/volume administered				
Anesthesia end time						
Complications? Y/N						

Note complications here and on back of page if needed:

POST-OPERATIVE

- Record dates and times of post-op observations or analgesic administrations.
- Checkboxes below indicate required doses of analgesia. If an NSOP checkbox is also included in the same details section, observe animals for signs of pain. If pain is observed, administer analgesic(s) and re-evaluate at time point when next analgesic administration is due. If no pain is observed, mark the NSOP checkbox.
- Once post-surgical pain assessment has concluded, all other monitoring will continue as approved per protocol.

Animal or Cage ID #					
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup <input type="checkbox"/> Mel/Car	<input type="checkbox"/> Bup <input type="checkbox"/> Mel/Car	<input type="checkbox"/> Bup <input type="checkbox"/> Mel/Car	<input type="checkbox"/> Bup <input type="checkbox"/> Mel/Car	<input type="checkbox"/> Bup <input type="checkbox"/> Mel/Car
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP	<input type="checkbox"/> Bup <input type="checkbox"/> NSOP

Mouse Anesthesia/Surgery/Post-Operative Record

PI		Protocol # AN		
Personnel		Surgery Type Survival		
Date		Experimental agents administered		
Procedure name				
Anesthetics used	(1) Isoflurane	Dose + Route (mg/kg)	(1) 1%-5% to effect	(1) Inhalation
Analgesics used (All must be used)	(1) Lidocaine -OR- Bupivacaine (2) Buprenorphine SR	Dose + Route (mg/kg)	(1) < 7-8 (2) 1.5	(1) Local (2) SC
<input type="checkbox"/> Ophthalmic ointment administered in eyes of all anesthetized animals <input type="checkbox"/> Heat provided during surgery and recovery <input type="checkbox"/> Pedal reflex (pinch at both foot pads) checked periodically during surgery to evaluate depth of anesthesia <input type="checkbox"/> Green surgery tag affixed to cage card or onto cage				

Circle	Animal ID	Cage ID				
Body weight (grams)						
Anesthesia start time						
Analgesics	Name	Time and volume administered				
Lidocaine -OR- Bupivacaine						
Buprenorphine SR						
Other Agents	Name	Time and dosage/volume administered				
Anesthesia end time						
Complications? Y/N						

Note complications here and on back of page if needed:

POST-OPERATIVE

- Record dates and times of post-op observations or analgesic administrations.
- Checkboxes below indicate required doses of analgesia. If an NSOP checkbox is also included in the same details section, observe animals for signs of pain. If pain is observed, administer analgesic(s) and re-evaluate at time point when next analgesic administration is due. If no pain is observed, mark the NSOP checkbox.
- Once post-surgical pain assessment has concluded, all other monitoring will continue as approved per protocol.

Animal or Cage ID #					
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP

Rat Anesthesia/Surgery/Post-Operative Record

PI		Protocol # AN		
Personnel		Surgery Type Survival		
Date		Experimental agents administered		
Procedure name				
Anesthetics used	(1) Isoflurane	Dose + Route (mg/kg)	(1) 1%-5% to effect	(1) Inhalation
Analgesics used (All must be used)	(1) Lidocaine -OR- Bupivacaine (2) Buprenorphine SR	Dose + Route (mg/kg)	(1) < 7-8 (2) 1.2	(1) Local (2) SC
<input type="checkbox"/> Ophthalmic ointment administered in eyes of all anesthetized animals <input type="checkbox"/> Heat provided during surgery and recovery <input type="checkbox"/> Pedal reflex (pinch at both foot pads) checked periodically during surgery to evaluate depth of anesthesia <input type="checkbox"/> Green surgery tag affixed to cage card or onto cage				

Circle	Animal ID	Cage ID				
Body weight (grams)						
Anesthesia start time						
Analgesics	Name	Time and volume administered				
	Lidocaine -OR- Bupivacaine					
	Buprenorphine SR					
Other Agents	Name	Time and dosage/volume administered				
Anesthesia end time						
Complications? Y/N						

Note complications here and on back of page if needed:

POST-OPERATIVE

- Record dates and times of post-op observations or analgesic administrations.
- Checkboxes below indicate required doses of analgesia. If an NSOP checkbox is also included in the same details section, observe animals for signs of pain. If pain is observed, administer analgesic(s) and re-evaluate at time point when next analgesic administration is due. If no pain is observed, mark the NSOP checkbox.
- Once post-surgical pain assessment has concluded, all other monitoring will continue as approved per protocol.

Animal or Cage ID #					
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP

Mouse Anesthesia/Surgery/Post-Operative Record

PI		Protocol # AN		
Personnel		Surgery Type Survival		
Date		Experimental agents administered		
Procedure name				
Anesthetics used	(1) Isoflurane (2) Ketamine + Xylazine	Dose + Route (mg/kg)	(1) 1%-5% to effect (2) 80-100 K + 10-20 X	(1) Inhalation (2) IP
Analgesics used (All must be used)	(1) Lidocaine -OR- Bupivacaine (2) Buprenorphine SR	Dose + Route (mg/kg)	(1) < 7-8 (2) 1.5	(1) Local (2) SC
<input type="checkbox"/> Ophthalmic ointment administered in eyes of all anesthetized animals <input type="checkbox"/> Heat provided during surgery and recovery <input type="checkbox"/> Pedal reflex (pinch at both foot pads) checked periodically during surgery to evaluate depth of anesthesia <input type="checkbox"/> Green surgery tag affixed to cage card or onto cage				

Circle Animal ID	Cage ID				
Body weight (grams)					
Anesthesia start time					
Analgesics Name	Time and volume administered				
Lidocaine -OR- Bupivacaine					
Buprenorphine SR					
Other Agents Name	Time and dosage/volume administered				
Anesthesia end time					
Complications? Y/N					

Note complications here and on back of page if needed:

POST-OPERATIVE

- Record dates and times of post-op observations or analgesic administrations.
- Checkboxes below indicate required doses of analgesia. If an NSOP checkbox is also included in the same details section, observe animals for signs of pain. If pain is observed, administer analgesic(s) and re-evaluate at time point when next analgesic administration is due. If no pain is observed, mark the NSOP checkbox.
- Once post-surgical pain assessment has concluded, all other monitoring will continue as approved per protocol.

Animal or Cage ID #					
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP

Rat Anesthesia/Surgery/Post-Operative Record

PI		Protocol # AN		
Personnel		Surgery Type Survival		
Date		Experimental agents administered		
Procedure name				
Anesthetics used	(1) Isoflurane (2) Ketamine + Xylazine	Dose + Route (mg/kg)	(1) 1%-5% to effect (2) 40-80 K + 5-10 X	(1) Inhalation (2) IP
Analgesics used (All must be used)	(1) Lidocaine -OR- Bupivacaine (2) Buprenorphine SR	Dose + Route (mg/kg)	(1) < 7-8 (2) 1.2	(1) Local (2) SC
<input type="checkbox"/> Ophthalmic ointment administered in eyes of all anesthetized animals <input type="checkbox"/> Heat provided during surgery and recovery <input type="checkbox"/> Pedal reflex (pinch at both foot pads) checked periodically during surgery to evaluate depth of anesthesia <input type="checkbox"/> Green surgery tag affixed to cage card or onto cage				

Circle Animal ID	Cage ID				
Body weight (grams)					
Anesthesia start time					
Analgesics Name	Time and volume administered				
Lidocaine -OR- Bupivacaine					
Buprenorphine SR					
Other Agents Name	Time and dosage/volume administered				
Anesthesia end time					
Complications? Y/N					

Note complications here and on back of page if needed:

POST-OPERATIVE

- Record dates and times of post-op observations or analgesic administrations.
- Checkboxes below indicate required doses of analgesia. If an NSOP checkbox is also included in the same details section, observe animals for signs of pain. If pain is observed, administer analgesic(s) and re-evaluate at time point when next analgesic administration is due. If no pain is observed, mark the NSOP checkbox.
- Once post-surgical pain assessment has concluded, all other monitoring will continue as approved per protocol.

Animal or Cage ID #					
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP	<input type="checkbox"/> NSOP

Mouse Anesthesia/Surgery/Post-Operative Record

PI		Protocol # AN		
Personnel		Surgery Type Survival		
Date		Experimental agents administered		
Procedure name				
Anesthetics used	(1) Isoflurane	Dose + Route (mg/kg)	(1) 1%-5% to effect	(1) Inhalation
Analgesics used (All must be used)	(1) Lidocaine -OR- Bupivacaine (2) Buprenorphine	Dose + Route (mg/kg)	(1) < 7-8 (2) 0.05-0.1	(1) Local (2) SC/IP
<input type="checkbox"/> Ophthalmic ointment administered in eyes of all anesthetized animals <input type="checkbox"/> Heat provided during surgery and recovery <input type="checkbox"/> Pedal reflex (pinch at both foot pads) checked periodically during surgery to evaluate depth of anesthesia <input type="checkbox"/> Green surgery tag affixed to cage card or onto cage				

Circle Animal ID	Cage ID				
Body weight (grams)					
Anesthesia start time					
Analgesics Name	Time and volume administered				
Lidocaine -OR- Bupivacaine					
Buprenorphine					
Other Agents Name	Time and dosage/volume administered				
Anesthesia end time					
Complications? Y/N					

Note complications here and on back of page if needed:

POST-OPERATIVE

- Record dates and times of post-op observations or analgesic administrations.
- Checkboxes below indicate required doses of analgesia. If an NSOP checkbox is also included in the same details section, observe animals for signs of pain. If pain is observed, administer analgesic(s) and re-evaluate at time point when next analgesic administration is due. If no pain is observed, mark the NSOP checkbox.
- Once post-surgical pain assessment has concluded, all other monitoring will continue as approved per protocol.

Animal or Cage ID #					
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup

Rat Anesthesia/Surgery/Post-Operative Record

PI		Protocol # AN		
Personnel		Surgery Type Survival		
Date		Experimental agents administered		
Procedure name				
Anesthetics used	(1) Isoflurane	Dose + Route (mg/kg)	(1) 1%-5% to effect	(1) Inhalation
Analgesics used (All must be used)	(1) Lidocaine -OR- Bupivacaine (2) Buprenorphine	Dose + Route (mg/kg)	(1) < 7-8 (2) 0.01-0.05	(1) Local (2) SC/IP
<input type="checkbox"/> Ophthalmic ointment administered in eyes of all anesthetized animals <input type="checkbox"/> Heat provided during surgery and recovery <input type="checkbox"/> Pedal reflex (pinch at both foot pads) checked periodically during surgery to evaluate depth of anesthesia <input type="checkbox"/> Green surgery tag affixed to cage card or onto cage				

Circle	Animal ID	Cage ID				
Body weight (grams)						
Anesthesia start time						
Analgesics	Name	Time and volume administered				
Lidocaine -OR- Bupivacaine						
Buprenorphine						
Other Agents	Name	Time and dosage/volume administered				
Anesthesia end time						
Complications? Y/N						

Note complications here and on back of page if needed:

POST-OPERATIVE

- Record dates and times of post-op observations or analgesic administrations.
- Checkboxes below indicate required doses of analgesia. If an NSOP checkbox is also included in the same details section, observe animals for signs of pain. If pain is observed, administer analgesic(s) and re-evaluate at time point when next analgesic administration is due. If no pain is observed, mark the NSOP checkbox.
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Animal or Cage ID #					
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup

Mouse Anesthesia/Surgery/Post-Operative Record

PI		Protocol # AN		
Personnel		Surgery Type Survival		
Date		Experimental agents administered		
Procedure name				
Anesthetics used	(1) Isoflurane (2) Ketamine + Xylazine	Dose + Route (mg/kg)	(1) 1%-5% to effect (2) 80-100 K + 10-20 X	(1) Inhalation (2) IP
Analgesics used (All must be used)	(1) Lidocaine -OR- Bupivacaine (2) Buprenorphine	Dose + Route (mg/kg)	(1) < 7-8 (2) 0.05-0.1	(1) Local (2) SC/IP
<input type="checkbox"/> Ophthalmic ointment administered in eyes of all anesthetized animals <input type="checkbox"/> Heat provided during surgery and recovery <input type="checkbox"/> Pedal reflex (pinch at both foot pads) checked periodically during surgery to evaluate depth of anesthesia <input type="checkbox"/> Green surgery tag affixed to cage card or onto cage				

Circle Animal ID	Cage ID				
Body weight (grams)					
Anesthesia start time					
Analgesics Name	Time and volume administered				
Lidocaine -OR- Bupivacaine					
Buprenorphine					
Other Agents Name	Time and dosage/volume administered				
Anesthesia end time					
Complications? Y/N					

Note complications here and on back of page if needed:

POST-OPERATIVE

- Record dates and times of post-op observations or analgesic administrations.
- Checkboxes below indicate required doses of analgesia. If an NSOP checkbox is also included in the same details section, observe animals for signs of pain. If pain is observed, administer analgesic(s) and re-evaluate at time point when next analgesic administration is due. If no pain is observed, mark the NSOP checkbox.
- Once post-surgical pain assessment has concluded, all other monitoring will continue as approved per protocol.

Animal or Cage ID #					
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup

Rat Anesthesia/Surgery/Post-Operative Record

PI		Protocol # AN		
Personnel		Surgery Type Survival		
Date		Experimental agents administered		
Procedure name				
Anesthetics used	(1) Isoflurane (2) Ketamine + Xylazine	Dose + Route (mg/kg)	(1) 1%-5% to effect (2) 40-80 K + 5-10 X	(1) Inhalation (2) IP
Analgesics used (All must be used)	(1) Lidocaine -OR- Bupivacaine (2) Buprenorphine	Dose + Route (mg/kg)	(1) < 7-8 (2) 0.01-0.05	(1) Local (2) SC/IP
<input type="checkbox"/> Ophthalmic ointment administered in eyes of all anesthetized animals <input type="checkbox"/> Heat provided during surgery and recovery <input type="checkbox"/> Pedal reflex (pinch at both foot pads) checked periodically during surgery to evaluate depth of anesthesia <input type="checkbox"/> Green surgery tag affixed to cage card or onto cage				

Circle	Animal ID	Cage ID				
Body weight (grams)						
Anesthesia start time						
Analgesics	Name	Time and volume administered				
Lidocaine -OR- Bupivacaine						
Buprenorphine						
Other Agents	Name	Time and dosage/volume administered				
Anesthesia end time						
Complications? Y/N						

Note complications here and on back of page if needed:

POST-OPERATIVE

- Record dates and times of post-op observations or analgesic administrations.
- Checkboxes below indicate required doses of analgesia. If an NSOP checkbox is also included in the same details section, observe animals for signs of pain. If pain is observed, administer analgesic(s) and re-evaluate at time point when next analgesic administration is due. If no pain is observed, mark the NSOP checkbox.
- Once post-surgical pain assessment has concluded, all other monitoring will continue as approved per protocol.

Animal or Cage ID #					
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup
Date/Time					
NSOP or Analgesic details	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup	<input type="checkbox"/> Bup