

1. PURPOSE

The intent of this Standard Operating Procedure (SOP) is to describe procedures for the surgical resection of encapsulated soft tissue masses in rodents.

2. RESPONSIBILITY

Principal investigators (PI) and their staff, veterinary care staff or any individual performing surgery on rodents, or assisting in those procedures.

3. MATERIALS

- 3.1. Analgesics
- 3.2. Anesthetic: isoflurane
- 3.3. Sterile ophthalmic ointment
- 3.4. Electric clipper or depilatory cream
- 3.5. Gauze
- 3.6. Antiseptic solution for skin (e.g., chlorhexidine 2% solution or povidone-iodine solution used alternatively with 70% alcohol, or 2% chlorhexidine in 70% alcohol solution)
- 3.7. Sterile cotton swabs
- 3.8. Sterile surgical instruments
- 3.9. Dry bead sterilizer
- 3.10. 7mm or 9mm wound clips (Autoclips®) or non-absorbable suture material
- 3.11. Heating disc/pad, red heat lamp or incubator. Do not use electric heating pads unless specifically designed for use with laboratory rodents.

4. PROCEDURES

- 4.1. Refer to Rodent Surgery SOP.
- 4.2. Document the details of the surgical procedure in the Rodent Procedure Log.
- 4.3. Administer analgesia as per Rodent Analgesia SOP.
- 4.4. Anesthetize animal using isoflurane as per Anesthesia SOP.
- 4.5. Apply ophthalmic ointment in both eyes to prevent corneal desiccation. Reapply as needed.
- 4.6. Remove hair over the surgical area with a clipper, depilatory cream or by plucking allowing a perimeter of at least 1cm around tumor site. Remove loose hair with gauze.
- 4.7. Wipe the skin surface with antiseptic solution.
- 4.8. Tumor resection:
 - 4.8.1. Locate the tumor to remove and make the smallest skin incision allowing tumor removal.
 - 4.8.2. The skin and the internal cavity membrane are gently separated from the tumor using cotton swabs, a blunt probe or by blunt dissection using scissors (scissors are inserted with closed tips, blades are opened separating tissue connections, scissors tips are removed without closing the blades to prevent uncontrolled cutting, the process is repeated as needed).
 - 4.8.3. Remove the tumor and reserve for processing.

- 4.9. Apply topical local analgesic inside the incision site.
- 4.10. Hold the edges of the incision together with forceps and use wound clips or sutures to close the skin.
- 4.11. Allow animals to recover in a clean cage. Provide supplemental heat (use a heating disc or pad, heating lamp or incubator) for approximately 30 minutes and monitor the animals until they have fully recovered prior to returning them to their housing room.
- 4.12. Administer post-operative analgesia as per Rodent Analgesia SOP.
- 4.13. Remove wound clips or sutures once the incision is completely closed, usually 7-10 days following tumor resection.

SOP REVISION HISTORY

DATE	NEW VERSION
2020.11.17	3.6. Antiseptic solution for skin (e.g., chlorhexidine 2% solution or povidone-iodine solution used alternatively with 70% alcohol, or 2% chlorhexidine in 70% alcohol solution) 3.7. 70% Alcohol 3.8. Chlorhexidine 2% solution or povidone-iodine solution 3.9. 2% chlorhexidine in 70% alcohol solution
2020.11.17	4.6. Wipe the skin surface with 70% alcohol followed by 2% chlorhexidine solution or povidone-iodine antiseptic solution.
2020.12.07	3.11. Heating disc/pad, red heat lamp or incubator. Do not use electric heating pads unless specifically designed for use with laboratory rodents.
2020.12.07	4.2. Document the details of the surgical procedure in the Rodent Procedure Log.

Investigator:	Protocol:
Procedure: Tumor Resection	Performed by:

Instructions: complete this log for rodent procedures requiring anesthesia, analgesia or post-procedure care (ex. surgeries, experimental infection). Keep the log in the housing room while active and in your files for 3 years for future review by the Quality Assistant and/or the FACC.

ANALGESIA

- carprofen: mouse: 20mg/kg, rat: 5-10 mg/kg, SC, every 24 hrs
- buprenorphine: mouse: 0.1mg/kg SC or IP every 4-8 hrs;
rat: 0.05mg/kg, SC or IP, every 8-12 hrs
- lidocaine/bupivacaine (local analgesic)
- other: _____

ANESTHESIA

- isoflurane 2-2.5%
- ketamine/xylazine/acepromazine*:
mouse: 100 mg/kg (K)- 10 mg/kg (X)- 3 mg/kg (A) IP
rat: 50 mg/kg (K)- 5 mg/kg (X)- 1 mg/kg (A); IP or IM
- other: _____

OTHER AGENTS ADMINISTERED

- _____
- _____
- _____

Animal ID	Date	Anesthesia		Analgesia		Other		Heat Source Provided		Recovery time	Comments/observations	Initials
		dose	time	dose	time	dose	time	procedure	recovery			
1								<input type="checkbox"/>	<input type="checkbox"/>			
2								<input type="checkbox"/>	<input type="checkbox"/>			
3								<input type="checkbox"/>	<input type="checkbox"/>			
4								<input type="checkbox"/>	<input type="checkbox"/>			
5								<input type="checkbox"/>	<input type="checkbox"/>			
6								<input type="checkbox"/>	<input type="checkbox"/>			
7								<input type="checkbox"/>	<input type="checkbox"/>			
8								<input type="checkbox"/>	<input type="checkbox"/>			
9								<input type="checkbox"/>	<input type="checkbox"/>			
10								<input type="checkbox"/>	<input type="checkbox"/>			
11								<input type="checkbox"/>	<input type="checkbox"/>			
12								<input type="checkbox"/>	<input type="checkbox"/>			
13								<input type="checkbox"/>	<input type="checkbox"/>			
14								<input type="checkbox"/>	<input type="checkbox"/>			

Comments/footnotes:

*Dose can vary with the sex, the age, the strain, and the body condition of the animal.

ANALGESIA

- carprofen: mouse: 20mg/kg, rat: 5-10 mg/kg, SC, every 24 hrs
- buprenorphine: mouse: 0.1mg/kg SC or IP every 4-8 hrs; rat: 0.05mg/kg, SC or IP, every 8-12 hrs
- OTHER _____

Initial the appropriate boxes when completed

	Animal ID	Date	Analgesia			SC fluids			Wet food			Time			Remove Sutures (Day 7-10)
			Day 1	Day 2	Day 3	Day 1	Day 2	Day 3	Day 1	Day 2	Day 3	Day 1	Day 2	Day 3	
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
Comments/footnotes:															