

University Animal Care Committee Standard Operating Procedure		
Document No: 7.30	Subject: Orchidectomy in Mice	
Date Issued: April 17 th , 2023	Revision: Original	Page No: 1

Location: Queen's University

Responsibility: Principal Investigators, Research Staff, Veterinary Staff

Purpose: The purpose of this Standard Operating Procedure (SOP) is to describe the technique for performing an Orchidectomy procedure in mice.

1. Introduction and Definitions: Orchidectomy is a common procedure in rodents and involves the surgical removal of testicles.

Abbreviations: Animal Care Services **ACS**, Principal Investigator **PI**, subcutaneous **SC**, intravenous **IV**, intraperitoneal **IP**, intramuscular **IM**, per os **PO**, per rectum **PR**

2. Materials:

- Anesthetics (refer to SOP 7.6)
 - Gas anesthesia machine (calibrated within the last 12 months and with active or passive scavenging)
 - Transparent induction chamber
 - Nose cone
 - Analgesics (refer to SOP 7.1)
 - PPE (cap, gloves, mask, clean lab coat or surgical gown)
 - Standard surgical gloves
 - Clippers
 - Scale
 - Eye lubricant and sterile cotton tip applicator
 - Heat lamp
 - Lactated Ringers solution (fluid therapy)
 - Surgical scrub (4% chlorhexidine scrub, 70% isopropyl alcohol and iodine solution)
 - Alcohol (for cleaning surgical equipment/gloves between surgeries)
 - Bead sterilizer
 - External heat source for maintaining body temperature
 - Sterile surgical kit
 - Scalpel blade
 - Suture material
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- Tissue glue

3. Procedures:

Preparation for Surgery:

- Analgesics may be given preoperatively as per protocol. Refer to SOP 7.1 "Pain Management (Mice)"
- Anesthetize and prep mouse as per SOP 7.3 "Aseptic Surgical Techniques (Mice)"
- Place the mouse on the prep area in dorsal recumbency
- The scrotum of the mouse needs to be shaved.

Surgical Procedure:

- Place a sterile drape over the mouse with the opening situated over the surgery site. **(Figure 1)**
- After pushing the testicle into the scrotum and holding it in position with your non-dominant hand, use a sterile scalpel blade to make a single incision (0.5cm) on the ventral surface of the scrotum. If the testicle is inguinal and can not be pushed into the scrotum the incision will need to be over the inguinal area. **(Figure 2)**
- Using forceps, gently pull the testicular fat pad through the incisional opening, the cremaster muscle needs to be separated from the fat pad. **(Figure 3)**
- The testicular content will be exposed at this time (wrapped in adipose tissue), the cauda epididymis, the caput epididymis, and the vas deferens along with the testicular blood vessels.
- Using hemostats crush the blood vessels for at least 15 seconds to minimize hemorrhage. **(Figure 4)**
- Absorbable suture (5-0/6-0) will be used to place a single suture where the hemostats were placed. Four throws of the suture will ensure tight placement and less chance of the suture falling off. **(Figure 5)**
- The testicle will be removed by scissors or scalpel by cutting approx. 5mm above where the suture was placed.
- Holding the remaining testicular stump with forceps watch for any bleeding before returning the remaining content back into the scrotum.
- Using the same incision locate the remaining testicle and repeat the above steps to remove it.
- Two simple interrupted skin sutures or tissue glue can be used to close the incision.

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- Remove the drape and gently clean the surgery site as needed.
- Follow postoperative care and monitoring as per SOP 7.4 "Rodent Post-Operative Care (Mice)"

Notes:

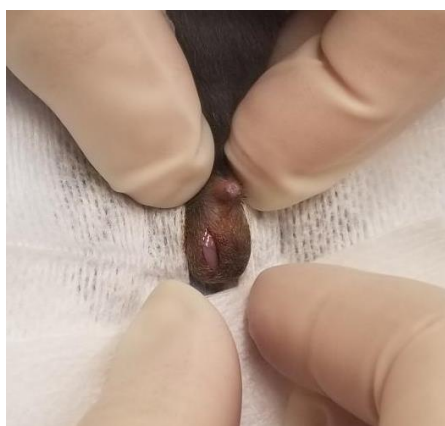
- *Ensure to place ligature either on the hemostat crush site or below, never above.*
- *Ligature must be very tight to guarantee it will not slip from the stump and there will be no haemorrhaging from the site.*



Figure 1: Incision site prepped



Figure 2: Mouse scrotum incision



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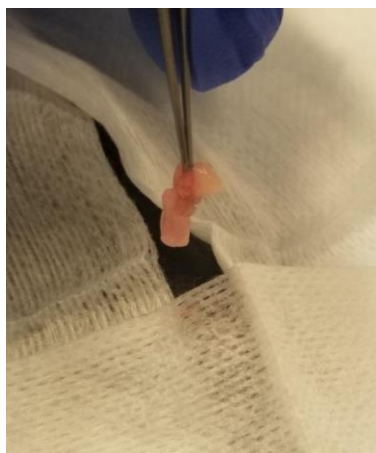


Figure 3: Removal of testicular fat pad and testicular content



Figure 4: Testicular clamp with hemostat



Figure 5: Ligation at site of hemostat clamp.

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References:

SOP Revision History:

Date	New Version