

Institutional Animal Care & Use Program - UTEP	
Title: Tail Biopsy of Mice and Rats	
Policy#: 002	Date in Effect: 24 October 2014
Version #: A	Rev Date:
In Effect <input checked="" type="checkbox"/> Rescinded <input type="checkbox"/>	Date Rescinded:

A) RESPONSIBILITIES

It is the responsibility of all personnel using animals at UTEP to abide by this policy.

B) APPLICATION

This policy applies to all mice and rats used in research and teaching at UTEP.

C) DEFINITIONS

Tail Biopsy - a procedure to remove the distal end of the tail to obtain small amounts of tissue or blood from a mouse or rat. It involves the removal of a 5 mm or smaller piece at the tip of the tail.

D) PROCEDURES

- 1) Only the minimum amount of tissue necessary for analysis should be taken.
- 2) Tail clipping is not considered a surgical procedure. Because it is not a surgical procedure:
 - a) 70% ethanol/isopropanol can be used to wipe down the tail.
 - b) Instruments must be sharp, sterile or disinfected and clean of visible debris.
At a minimum, instruments must be wiped down with 70% alcohol. Ideal methods of sterilizing/disinfecting instruments include exposure to autoclave, glass bead sterilizer, or chemical disinfectants.
- 3) Bleeding from the sampling site may stop spontaneously, however if required, adequate hemostasis must be achieved via a styptic pen, silver nitrate, tissue adhesive, gauze, cotton ball, tape, electrocautery and direct pressure.
- 4) The investigator should be aware that handling pups may lead to rejection by the dam in some cases; therefore, investigators may want to consider performing tail biopsies at an appropriate post-natal time that will not lead to pup rejection or after the weaning period.

- 5) Data¹ indicates that significant ossification of the distal end of the tail has occurred by post-partum day 17. Based on this data, appropriate analgesia/anesthesia* IS always required when:
 - a) Animal is \leq 16 days old and more than 2 mm of the tail will be biopsied.
 - b) Animal is \geq 17 days old regardless of the amount of tail that will be biopsied.
- 6) Analgesia*/anesthesia** is NOT required when:
 - a) Animal is \leq 16 days old and 2 mm or less of tail is biopsied.
- 7) Only one biopsy sample per animal should be performed unless it is scientifically justified and approved by the IACUC.
- 8) Other less invasive alternatives should be considered in lieu of tail biopsy. Examples of alternatives are small ear punch, small quantity of blood from distal veins (e.g., saphenous or submandibular vein), and PCR analyses using saliva or hair.
- 9) Scientific justification for doing tail biopsies is required when:
 - a) Analgesia/anesthesia cannot be provided and the rodent is \geq 17 days old.
 - b) Anesthesia/analgesia cannot be used and the sample is to be >2 mm.
 - c) Sample is >5 mm.
 - d) More than one biopsy is needed for each animal.
 - e) Other less invasive procedures could be used.

*Topical and/or general analgesic/anesthetic may be used. Refer to *Tail Clipping in Mice & Rats* presentation {[Instructional Slides on Tail Clipping UTSA](#)}.

¹ Hankenson F. Claire, Laura M. Garzel, David D. Fischer, Bonnie Nolan and Kurt D. Hankenson. "Evaluation of Tail Biopsy Collection in Laboratory Mice (*Mus musculus*): Vertebral Ossification, DNA Quantity, and Acute Behavioral Responses." Journal of the American Association for Laboratory Animal Science 47.6 (2008): 10-18.