

# **DREXEL UNIVERSITY ANIMAL CARE AND USE COMMITTEE POLICY ON TISSUE COLLECTION FOR GENOTYPING (Mice and Rats)**

**OBJECTIVE:** To provide guidance to the research community with the selection and execution of methods used to obtain mouse or rat tissue for genotyping purposes.

**RESPONSIBILITY:** The Investigator is responsible for obtaining IACUC approval prior to implementation of any genotyping procedure and should highlight any deviation from this policy. The investigator is also responsible to ensure that individuals performing genotyping procedures have been appropriately trained.

## **Genotyping Methods Guide:**

Researchers should select the least invasive method possible and should collect the smallest sample necessary for reliable results.

### **I. Ear Punching**

- I. This method can be performed on animals 14 days old or older.
  - a. Ear punching should be performed on mice close to weaning age or older to ensure that the pinnae are large enough for the punch size.
- II. This method does not require anesthesia.
- III. A sharp commercial punch device can be used to remove a 2 mm diameter piece of tissue from the middle of the pinna.
- IV. Ear punching is also an effective technique for animal identification.

### **II. Tail Tissue**

- I. Animals less than 21 days old:
  - a. Anesthesia is not required if no more than 12 mm of tissue is being collected from the tip of the tail
  - b. If more than 12 mm of tissue is being collected or tissue is being collected more than once, anesthesia may be required
- II. Animals 21 days and older:
  - a. Tail snipping for animals in this age group is strongly discouraged
  - b. General anesthesia is required for all tissue collection.
- III. Pressure on the open wound or use of a chemical coagulant should be used to ensure hemostasis following amputation of the tail tip.

### **III. Toe Clipping –**

- I. **As a method of identification of small rodents, toe-clipping should be used only when no other individual identification method is feasible.**
  - a. The primary use of this procedure is for identification purposes, however, the sample should serve a dual-purpose if genotyping is to also be performed.
- II. This method can only be performed in rats 5-7 days old and mice 7-10 days old.

- III. This method does not require anesthesia
- IV. Sharp scissors can be used to remove the distal phalanx in neonatal rodents.
- V. Only the complete distal phalanx should be removed
- VI. Front toes should never be clipped if animals may subsequently be used in grip testing.

References:

[https://www.brown.edu/research/sites/research/files/Rodent%20Genotyping%20Policy\\_1.pdf](https://www.brown.edu/research/sites/research/files/Rodent%20Genotyping%20Policy_1.pdf)

[https://oacu.oir.nih.gov/sites/default/files/uploads/arac-guidelines/b3-rodent\\_genotyping.pdf](https://oacu.oir.nih.gov/sites/default/files/uploads/arac-guidelines/b3-rodent_genotyping.pdf)

<https://grants.nih.gov/grants/olaw/guide-for-the-care-and-use-of-laboratory-animals.pdf>

Date approved: December 2003

Review date: January 2012

Last review date: June 2019