



**Institutional Animal Care  
and Use Committee  
(IACUC): Rodent  
Identification Policy**

POL 10.10.03

Effective Date: May 21, 2020

## 1.0 Policy Purpose

This policy provides information and guidance regarding commonly used rodent identification techniques. All rodent identification techniques and methods must be indicated in the animal use protocol approved by the Brown University Institutional Animal Care and Use Committee (IACUC).

## 2.0 To Whom the Policy Applies

This policy applies to all individuals using rodents on an IACUC-approved animal use protocol at Brown University.

## 3.0 Policy Statement

All personnel performing rodent identifications methods must adhere to the following instructions and principles.

### 3.1 Ear Punching

- This method can only be performed on animals fourteen days old or older.
- Punch devices must be disinfected between animals with chlorhexidine or 70% alcohol.
- Punched tissue may grow back, so the ears must be checked periodically and punching may need to be repeated.
- The tissue removed can be used for genotyping.
- An example of a punching device and a numbering system can be found in [Appendix A: Fig. 1](#).

### 3.2 Ear Tagging

- This method can only be performed on animals fourteen days old or older.
- The site must be disinfected prior to placement with chlorhexidine or 70% alcohol to minimize potential for infection.
- Ear tags must be monitored regularly after placement and assessed for complications.
- Ear Tagging can lead to pressure necrosis, ulcerations, inflammation, neoplasia, and infection. These conditions can be exacerbated by improper placement.
- Ear tags may not be compatible with protocols involving advanced imaging (e.g., Magnetic Resonance Imaging [MRI], Computerized Tomography [CT]).
- An image depicting proper ear tag placement can be found in [Appendix A: Fig. 2](#).

### 3.3 Tattooing

- This method may be done in neonates or adults. Anesthesia is recommended, but not required, when Tattooing adults.
- Manual and electric equipment options are commercially available and acceptable for use under this policy.
- The site must be disinfected using chlorhexidine or 70% alcohol before injection to minimize risk of infection.

### 3.4 Microchipping

- This method should only be performed on animals over 7 days old, and preferably after weaning.
- The site must be disinfected using chlorhexidine or 70% alcohol before injection to minimize potential for infection.
- Microchips can be used to measure physiologic data (e.g., body temperature).
- Microchips may not be compatible with protocols involving advanced imaging (e.g., MRI, CT).
- Microchips can lead to tissue response or neoplasia with prolonged placement.

### 3.5 Non-Permanent Methods

Non-Permanent Methods include fur clipping, application of non-toxic fur dyes, or markers used on the tail. These techniques are temporary and are only appropriate for short-term identification purposes.

### 3.6 Toe clipping

Toe Clipping should only be used when no other individual identification method is feasible.

- This method can only be performed in rats 5-7 days old and mice 7-10 days old.
- Sharp scissors are recommended for toe-clipping in neonatal rodents. The site must be disinfected and the equipment must be disinfected between animals with chlorhexidine or 70% alcohol.
- The aim is to remove only the complete distal phalanx, if possible. Proper technique for Toe Clipping requires removal of the entire most distal toe bone (3rd phalanx) and nail bed, which often requires removal of a small portion of the 2nd phalanx. (See [Appendix A: Fig. 3](#))
- Any numbering system used should be designed to minimize the total number of toes clipped per animal. Similarly, a given foot should have as few toes clipped as possible; two is the maximal number. Please see the reference and example numbering system at the end of the policy. (See [Appendix A: Fig. 4](#))
- Front toes should never be clipped if animals may subsequently be used in grip testing.
- The tissue removed can be used for genotyping.

#### 4.0 Definitions

For the purpose of this policy, the terms below have the following definitions:

**Ear Punching:** Application of a specific combination of small hole punches or notches to the outside edges of a rodent's ear.

**Ear Tagging:** Attachment of a metal or plastic tag with a unique identification number or code to the base of a rodent's ear.

**Microchipping:** Injection of a small transponder subcutaneously between the shoulder blades using a large bore needle. The microchip is read by use of a scanner.

**Tattooing:** A permanent mark made using needle and ink, which is applied to the tail, toes, ears, or foot pads.

**Toe Clipping:** Procedure in which the most distal bone of the toe (3rd phalanx) is removed with a sharp instrument.

#### 5.0 Responsibilities

All individuals to whom this policy applies are responsible for becoming familiar with and following this policy. University supervisors are responsible for promoting the understanding of this policy and for taking appropriate steps to help ensure compliance with it.

#### 6.0 Consequences for Violating this Policy

Violation of this policy may be considered a serious event of noncompliance that is reportable to the IACUC and funding and accrediting agencies, as well as other regulatory agencies. Violations are a serious matter that may adversely affect both the ability to perform animal work and acquire funding sources.

Failure to comply with this and related policies is subject to disciplinary action, up to and including suspension without pay, or termination of employment or association with the University, in accordance with applicable (e.g., staff, faculty, student) disciplinary procedures, or for non-employees may result in the suspension or revocation of the individual's relationship with Brown University.

#### 7.0 Related Information

Brown University is a community in which employees are encouraged to share workplace concerns with University leadership. Additionally, Brown's [Ethics and Compliance Reporting System](#) allows anonymous and confidential reporting on matters of concern online or by phone (877-318-9184).

The following information complements and supplements this document. The information is intended to help explain this policy and is not an all-inclusive list of policies, procedures, laws and requirements.

7.1 **Related Policies:** N/A

7.2 **Related Procedures:** N/A

7.3 **Related Forms:** N/A

7.4 **Frequently Asked Questions (FAQs):** N/A

7.5 **Other Related Information:**

- Castelhano-Carlos, M.J., N. Sousa, F. Ohl, and V. Baumans. Identification methods in newborn C57BL/6 mice: a developmental and behavioural evaluation. *Lab Anim* 44.2 (2010): 88-103.
- Dahlborn, K., P. Bugnon, T. Nevalainen, M. Raspa, P. Verbost, and E. Spangenberg. Report of the Federation of European Laboratory Animal Science Associations Working Group on animal identification. *Lab Anim* 47.1 (2013): 2-11.
- National Research Council. *Guide for the Care and Use of Laboratory Animals*. 8th ed. Washington, D.C.: The National Academies Press. (2011).
- Paluch, L.R., C.C. Lieggi, M. Dumont, S. Monette, E.R. Riedel, and N.S. Lipman. Developmental and behavioral effects of toe clipping on neonatal and preweanling mice with and without vapocoolant anesthesia. *JAALAS* 53.2 (2014): 132-140.
- Schaefer, D., I.N. Asner, B. Seifert, K. Burki, and P. Cinelli. Analysis of physiological and behavioural parameters in mice after toe clipping as newborns. *Lab Anim* 44.1 (2010): 7-13.
- Wang, L. A primer on rodent identification methods. *Lab Anim* 34.4 (2005) 64–7.

## 8.0 Policy Owner and Contact

8.1 **Policy Owner:** Vice President for Research

8.2 **Policy Approved by:** Vice President for Research

8.3 **Subject Matter Contact:** Animal Research Protection Program (ARPP)

- Telephone: 401-863-3050
- Email: IACUC@brown.edu

## 9.0 Policy History

9.1 **Policy Effective Date:** May 21, 2020

9.2 **Policy Last Reviewed:** March 6, 2020 (IACUC review date)

9.3 **Policy Update/Review Summary:** This policy is not new; it was converted to the University's new policy template and re-reviewed by the IACUC at its convened meeting on March 6, 2020. The current policy effective date reflects the date the policy was approved via the University Comprehensive Policy Review. Prior policy version:

- Institutional Animal Care and Use Committee Rodent Identification Policy; Date of IACUC Review and Approval: February 3, 2017

# Appendix A

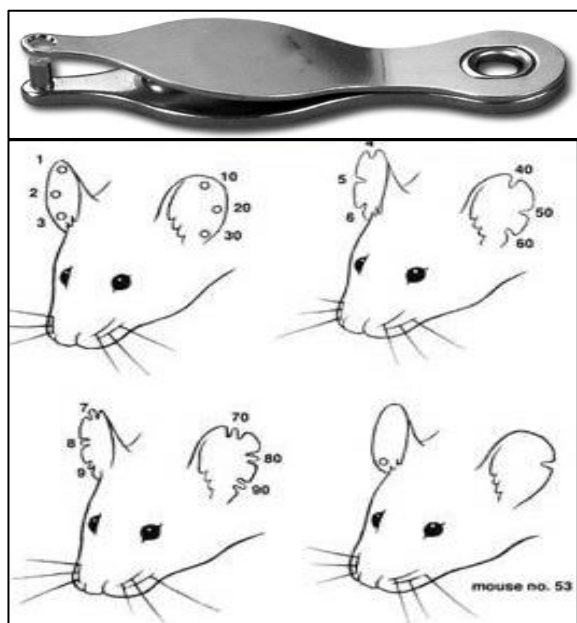


Fig 1: A commercially available ear punch and a sample ear punch numbering scheme

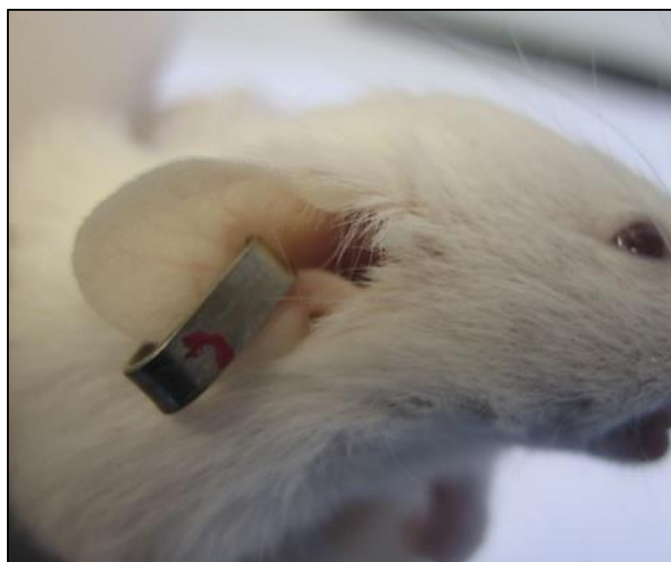


Fig 2: Correct placement of a metal ear tag

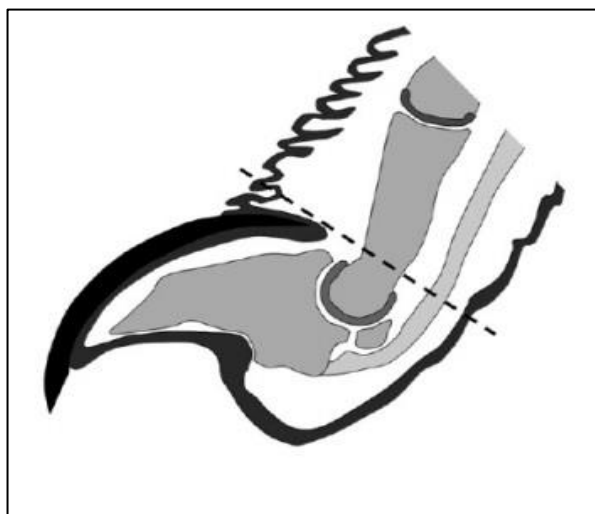


Fig 3: Schematic detailing proper placement of toe clip on digit

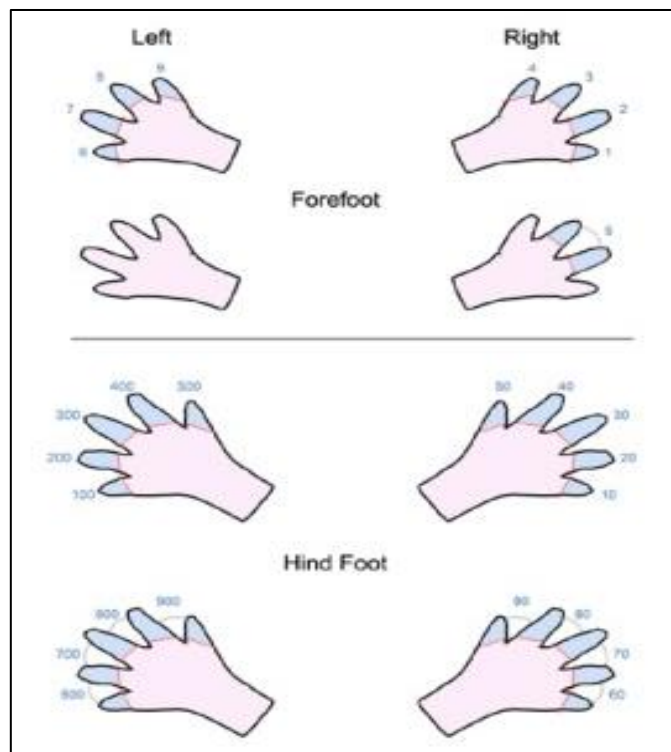


Fig 4: Sample toe clip numbering scheme