



## CM SOP #410 – Rodent Identification Methods

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### I. Purpose & Scope

To establish approved methods and procedures for the identification of rodents within Comparative Medicine–managed facilities, ensuring accurate animal identification while maintaining animal welfare and compliance with institutional and regulatory standards. This SOP applies to any CM or research personnel performing rodent identification procedures, including temporary and permanent identification methods, for animals housed in CM-managed vivaria.

### II. Roles & Responsibilities

#### Comparative Medicine Staff

- Perform rodent identification procedures in accordance with this SOP and the approved IACUC protocol.
- Use approved identification methods appropriate for the species and age of the animal.
- Ensure instruments and equipment used for identification are properly sterilized or disinfected between animals.
- Handle animals using appropriate restraint techniques to minimize stress and risk of injury.
- Document identification activities as required in breeding colony management systems or other approved records.
- Report any complications, injuries, or concerns to supervisory staff.

#### Research Staff, Students, Visitors

- Perform rodent identification procedures only if approved on the relevant IACUC protocol and appropriately trained.
- Follow all facility biosecurity, PPE, and animal handling requirements.
- Maintain accurate records of animal identification within the research colony records.
- Notify CM staff of any animal health concerns associated with identification procedures.

#### CM Assistant and Associate Directors

- Ensure personnel performing rodent identification procedures are properly trained and authorized.
- Monitor compliance with this SOP and applicable IACUC policies.
- Ensure appropriate equipment, supplies, and sterilization methods are available.
- Address procedural deviations and implement corrective actions as necessary.

#### CM Director and AV

- Provide oversight of rodent identification practices to ensure compliance with institutional policies and regulatory standards.



- Approve acceptable identification methods and ensure alignment with animal welfare best practices.
- Ensure appropriate training, resources, and guidance are available to personnel performing identification procedures.
- Review and address any animal welfare concerns associated with identification methods.

### III. General Notes & Definitions

- Rodent identification methods must be consistent with the approved IACUC protocol and institutional policies.
- The least invasive method that provides reliable identification should be used whenever possible.
- Identification procedures should be performed in a manner that minimizes pain, distress, and risk of injury to the animal.
- Appropriate restraint techniques must be used to ensure both animal welfare and personnel safety.
- Instruments used for identification procedures must be sterile prior to use and disinfected between animals to prevent cross-contamination.
- Some identification procedures may require anesthesia depending on the method used and the age of the animal; investigators must verify protocol requirements prior to performing the procedure.
- Identification methods that also collect tissue for genotyping must comply with institutional policies regarding genotyping procedures.
- **Temporary Identification:** Non-permanent marking methods used for short-term identification, such as fur clipping or non-toxic dyes.
- **Permanent Identification:** Longer-lasting identification methods including ear punching, ear tagging, tattooing, or subcutaneous transponders.
- **Ear Punching / Ear Notching:** A method of identification involving removal of a small portion of the ear pinna to create a unique pattern for identification and, in some cases, to obtain tissue for genotyping.
- **Subcutaneous Transponder:** A small electronic microchip implanted under the skin that can be read with a scanner to uniquely identify an animal.
- **Toe Clipping:** A method of identification involving removal of the distal phalanx of a toe. This method is restricted and may only be used when specifically approved by the IACUC and when alternative methods are not feasible.
- **Weanling:** A young rodent that has recently been weaned from the dam, typically around 21 days of age for mice.

### IV. Materials & Equipment

- Animal restraint devices or appropriate manual restraint techniques
- Personal protective equipment (PPE) as required by facility biosecurity procedures
- Sterile ear punch or ear notch device
- Sterile scissors (if used for ear notching)
- Ear tagging device and sterile ear tags (as applicable)
- Tattoo device and non-toxic tattoo ink or paste (as applicable)
- Subcutaneous transponder chips and compatible reader/scanner (as applicable)
- Non-toxic markers or dyes for temporary identification



- Hot bead sterilizer or approved cold disinfectant for instrument sterilization between animals
- Chlorhexidine or other approved disinfectant for cleaning instruments and equipment
- Hemostasis supplies (e.g., styptic powder or silver nitrate) if needed
- Anesthesia equipment and supplies when required by the procedure or protocol (see applicable anesthesia SOPs)

## V. Procedure

### A. General Preparation

1. Verify that the identification method is approved in the applicable IACUC protocol.
2. Confirm whether anesthesia is required based on the approved method and age of the animals.
3. Assemble all required equipment and ensure identification instruments are sterile prior to use.
4. Disinfect instruments between animals using an approved disinfectant or hot bead sterilizer, observing appropriate contact time where applicable.
5. Handle animals using proper restraint techniques to minimize stress and risk of injury.

### B. Temporary Identification Methods

#### Fur Clipping or Shaving

1. Restrain the animal using appropriate technique.
2. Clip or shave a small, clearly visible area of fur using clippers or scissors.
3. Ensure the pattern used is consistent with colony identification practices.

#### Non-Toxic Markers or Dyes

1. Restrain the animal.
2. Apply a small mark to the fur using a non-toxic marker or dye.
3. Allow the mark to dry before returning the animal to the cage.
4. Reapply as needed since these marks are temporary.

### C. Ear Punching/Ear Notching

Ear punching or notching may be used for permanent identification and may also provide tissue for genotyping. *Note: Ear punching should generally be performed on animals near weaning age or older to reduce the likelihood of the hole closing as the ear grows.*

1. Use a sterile ear punch device or sterile scissors designed for this purpose.
2. Ensure instruments are sterile before beginning and disinfected between animals.
3. Restrain the animal by scruffing to expose the ear pinna.
4. Create the identifying punch or notch according to the colony ear-punch chart or identification scheme (see Figure 1 below).
5. Place punches toward the center of the ear when possible to reduce the risk of tearing as the ear grows.
6. Monitor for bleeding. If bleeding occurs, apply digital pressure or use styptic powder or silver nitrate as needed to achieve hemostasis.
7. Ensure the identification pattern is clearly visible and recorded.

### D. Ear Tagging



1. Confirm the tag numbering system required by the PI or colony management records.
2. Disinfect the ear tagging device and ear tag with chlorhexidine or other approved disinfectant.
3. Load the ear tag into the applicator according to manufacturer instructions.
4. Restrain the animal and position the ear within the applicator.
5. Apply the tag toward the center of the pinna, avoiding major blood vessels.
6. Close the applicator firmly to secure the tag.
7. Confirm the tag is properly locked and moves freely without restricting the ear.
8. Verify that the tag number is readable.

**E. Tattoo**

1. Restrain the animal appropriately.
2. Prepare the tattoo site (commonly the tail, ear, or footpad depending on the system used).
3. Apply non-toxic tattoo ink or paste as recommended by the tattoo device manufacturer.
4. Use the tattoo device to insert ink under the skin to create the identifying mark.
5. Verify the tattoo is clearly visible before returning the animal to the cage.

**F. Subcutaneous Transponders**

1. Confirm the transponder type and reader compatibility.
2. Load the sterile transponder into the injector according to manufacturer instructions.
3. Restrain the animal.
4. Insert the injector subcutaneously, typically between the scapulae.
5. Deploy the transponder and withdraw the needle.
6. Scan the animal with the reader to confirm proper implantation and identification number.

**G. Toe Biopsy (Toe Clipping; Restricted Use)**

Toe clipping may only be performed when specifically approved by the IACUC and when alternative identification methods are not feasible.

1. Confirm that toe clipping is approved in the IACUC protocol and that the animals meet the appropriate age criteria.
2. Restrain the neonatal animal.
3. Using sterile scissors, remove only the distal portion of the toe (third phalanx).
4. Only one toe per paw may be clipped.
5. Apply gentle pressure to ensure hemostasis if needed.
6. Record the identification pattern used.

**H. Post-Procedure**

1. Observe the animal briefly to ensure normal behavior and absence of excessive bleeding or injury.
2. Return the animal to its cage.
3. Clean and disinfect all equipment used during the procedure.
4. Record the identification method and pattern in the colony management system or other approved records.



### VI. Health & Safety

- Personnel must wear appropriate personal protective equipment (PPE) when handling rodents or performing identification procedures.
- Personnel must be trained in proper rodent handling and restraint techniques to minimize the risk of bites, scratches, and animal escape.
- Mice and rats are capable of inflicting bites and scratches. Any injury must be reported immediately to a supervisor and documented according to institutional injury reporting procedures.
- Hands must be washed after handling animals, biological materials, or disinfectants. Eating, drinking, chewing gum, or applying cosmetics is not permitted in animal areas.
- Instruments used for identification procedures must be sterilized prior to use and disinfected between animals to prevent cross-contamination and potential pathogen transmission.
- Care must be taken when using sharp instruments such as scissors, ear punch devices, or tagging applicators to prevent injury to both personnel and animals.
- Chemical disinfectants used for instrument sanitation must be handled according to manufacturer instructions and institutional safety guidance, including observing proper contact times.
- When anesthesia is required for identification procedures, it must be administered and monitored in accordance with applicable anesthesia SOPs and institutional veterinary guidance.
- Any equipment malfunction, animal welfare concern, or unexpected complication during the procedure must be reported to supervisory personnel and/or the Attending Veterinarian.

### VII. References & Attachments

- *Guide for the Care and Use of Laboratory Animals*, 8th Edition. National Research Council. National Academies Press, Washington, DC.
- Public Health Service (PHS) Policy on Humane Care and Use of Laboratory Animals. Office of Laboratory Animal Welfare (OLAW), NIH.
- AVMA Guidelines for the Euthanasia of Animals (latest edition)
- FAU IACUC Policy 10.4.8: *Identification of Rodents*
- CMSOP 409: *Mouse Breeding Colony Management*
- CMSOP 206: *Anesthetic Vaporizer Maintenance and Calibration*

### VIII. Revision History

Revision Date	Revision Number	Summary of Changes
01/12/2021	2	Remove rat toe clipping; change date for mouse toe clipping; sterilization/cleaning
01/31/2024	3	Review- no changes
03/01/2026	4	Reformat, made ADA compliant, updated figures

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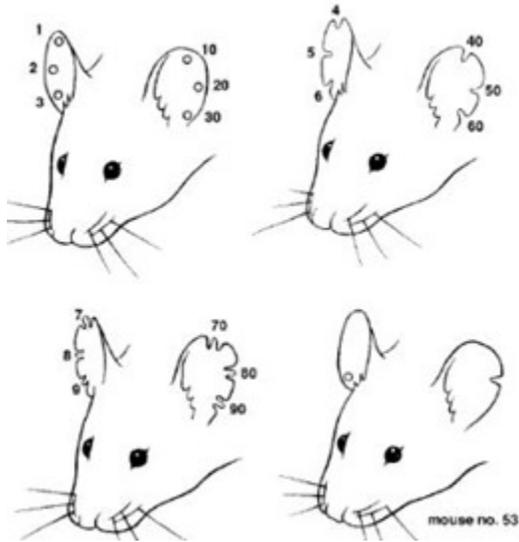


Figure 1: Standardized rodent ear punching numbering scheme



Figure 2: Proper placement of a rodent ear tag (Brown University. Rodent Identification Policy. 2020)