



Cornell University
Cornell Center for Animal Resources and Education

CARE552.01 Mouse Identification

The intent of this standard operating procedure (SOP) is to list methods and procedures that can be used to identify mice. This SOP is intended for use by all mice users. This procedure is approved by the Cornell Institutional Animal Care and Use Committee (IACUC) and the Cornell Center for Animal Resources and Education (CARE). Any exemption must be approved by the IACUC prior to its application.

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1. Introduction

Proper identification of research animals is an essential component of a research design. It allows an easy method for tracking an animal throughout a research project and assists animal care staff in providing appropriate care to the appropriate animal.

This document identifies various methods of identifying individual or groups of mice. Cage cards should be used for all mouse cages. Additional forms of identification can be added to individually identify mice within a cage. Whichever method meets the needs of the intended research purpose should be selected and must be listed on the IACUC approved protocol.

2. Materials

- Cage cards
- Other materials depend on method of identification used

3. Procedures

A. Cage Cards – use for all mice

- a. Cage card information includes: species, strain or stock, source of animal, names and locations of responsible investigators, date of birth and protocol number, when applicable
- b. Cage card can be used as only method of identification for:
 - i. individually housed mice or a breeding pair

- ii. groups of mice on protocols where individual identification is not necessary

B. Temporary Markings

- a. Use an indelible marker to write numbers, bars, or other distinguishable markings, on the tail or the ears

Note: Temporary marking can be used for short-term individual identification; this marking lasts up to 3-4 days

- b. If temporary marking is to be used for duration exceeding 3-4 days, repeat markings every 3-4 days

C. Tattooing

- a. Use an electric tattoo machine to write numbers on the tail
- b. Use only sterile and sharp tattoo needles.
- c. This procedure is easier to perform under general anesthesia
- d. If not using general anesthesia, apply a local anesthetic on the tail before tattooing (EMLA cream or a local anesthetic spray). See CARE SOP101: Rodent Anesthesia and CARE SOP102: Analgesia for further details.

D. Micro-tattooing

- a. Use a micro-tattooer to inject tattoo ink in the toe pads and/or the ears
- b. Whenever possible, use a simple identification code to limit the number of toes tattooed
- c. Have the identification code chart readily available in the animal room to allow prompt identification of individuals

E. Ear Tags

- a. Mice should be ear tagged at weaning age or older
- b. Use tags that are about 5 mm long
- c. Rinse tag in 70% alcohol before use to help prevent ear infection
- d. Position the tag in the applicator so that the end with the hole is positioned over the notched area of the applicator; the pointed end should be opposite the hole
- e. Scruff the mouse so that the ears are easily accessible
- f. Place the ear between the point and the hole of the tag; the numbers should be in an upward configuration so that they can be easily read without restraining the animal
- g. The tag should be positioned at the lateral base of the ear, approximately 3 mm from the edge of the ear pinna (see picture below)
- h. Once the tag is positioned correctly, squeeze the applicator firmly to apply the tag
- i. Monitor the tag implantation intermittently for signs of local infection
- j. Do Not place a second ear tag without first consulting with a CARE veterinarian



F. Ear Notching/Punching

- a. **Do not** use this method in mice under 2 weeks of age
- b. Restrain the mouse by the scruff and using the ear punch to create holes and/or notches in the ears, following an identification chart
- c. Whenever possible, use a simple code to limit the number of notches/punches
- d. Have the identification chart readily available in the animal room to allow prompt identification of individuals
- e. If possible, use the excised tissue as a sample for genotyping, replacing the need for a tail biopsy.

G. Microchips

- a. **Do not** implant microchips in mice less than 3 weeks old
- c. Use appropriate anesthesia and analgesia to implant the microchip, see CARE SOP 101: Rodent Anesthesia and CARE SOP 102: Analgesia
- d. Apply disinfectant on the skin (e.g. chlorhexidine, betadine)
- e. Implant microchips subcutaneously in the dorsal neck area; the standard size for a mouse microchip is about 2 x 13 mm
- e. Have a compatible reader available to allow identification of the mice
- f. Reuse microchips only after proper cleaning and sterilization (follow manufacturer's recommendation)

H. Toe Amputation

- a. Use of this method must be justified and approved by the IACUC.
- b. Toe clipping is acceptable only under these conditions:
 - i. The genotype needs to be known before weaning; this method replaces the tail biopsy as a sample for genotyping
 - ii. Mice must be less than 10 days old
 - iii. No more than 2 digits (total) can be affected, on separate limbs; Only the tip of the digit can be severed
 - iv. Sharp iris scissors or scalpel blade must be used
 - v. Apply a local anesthetic (e.g., lidocaine, bupivacaine, local anesthetic spray) on the site of amputation

4. Safety

When working with animals, wear appropriate PPE, and be aware of allergy, zoonosis and injury risks, refer to applicable references in section 6 of this document.

5. Contingencies

Emergency veterinary care is available at all times through CARE (pager 1-800-349-2456)

6. References

- a. *Guide for the Care and Use of Laboratory Animals*. National Research Council; National Academy Press, Washington, DC, 1996.
- b. 2003 Supplement on Refinement and Reduction in Production of Genetically Modified Mice. *Laboratory Animals*, vol. 37, no. 3, Suppl.1 July 2003.

- c. *Guidelines for the Toe-Clipping of Rodents*. National Institute of Health, Animal Research Advisory Committee (ARAC); <http://oacu.od.nih.gov/ARAC/FinalToeClip0504.pdf>, Revised 5/12/04.
- d. CARE SOP 101: Rodent Anesthesia: <http://www.research.cornell.edu/care/documents/SOPs/CARE101.pdf>
- e. CARE SOP 102: Analgesia: <http://www.research.cornell.edu/care/documents/SOPs/CARE102.pdf>
- f. CARE SOP 715: Personal Protective Equipment: <http://www.research.cornell.edu/care/documents/SOPs/CARE715.pdf>
- g. CARE SOP 707: Animal Related Injury: <http://www.research.cornell.edu/care/documents/SOPs/CARE707.pdf>
- h. Zoonosis: <http://www.research.cornell.edu/care/zoonoses.html>
- i. Allergen Prevention: <http://www.research.cornell.edu/CARE/documents/OHS/AllergypreventionFactSheet.pdf>

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