

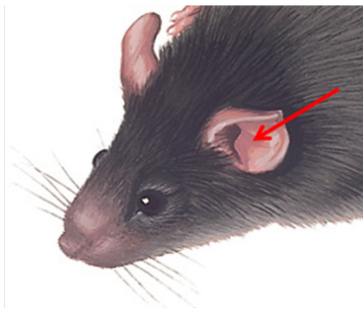
**Rodent Identification
IACUC Standard Procedure
Effective Date: 9/28/2021**

Description of procedure:

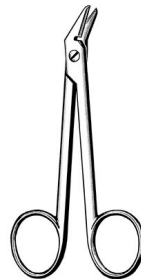
Individual identification of animals plays a critical role in accurate record keeping. There are several options for identification of rodents:

1. **Metal ear tags** do not require anesthesia for application, however, the animal must be securely restrained. The tags need to be appropriate size for the species and should be applied to the inner lower 1/3 of the pinnae. If placed correctly the tag should hang from the bottom of the ear and eye adjacent to the face. Usually, ear tags last for 6 months. Wire suture scissors should be available and can be used to cut through the tags for removal.

****This method is not advised for animals undergoing MRI and/or CT imaging. If animals already have metal ear tags in place, they must be removed prior to imaging.****

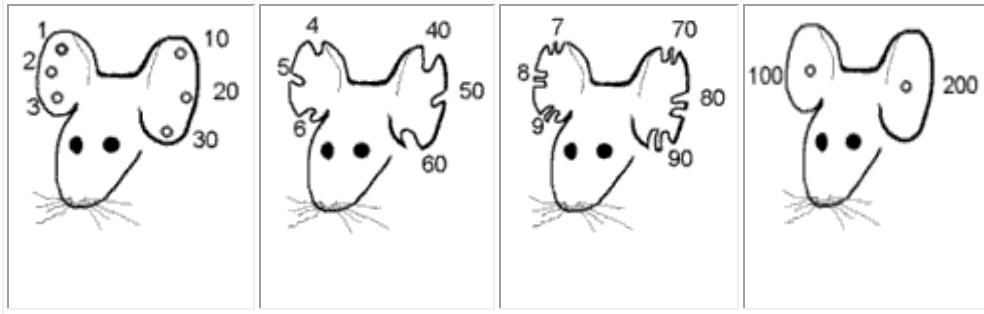


Metal Tags and Wire Suture Scissors:



2. **Ear notching** is a permanent method of identification. The animal must be securely restrained. Anesthesia is not required but may be used if needed for chemical restraint. Ear notch or punch remnants usually provide enough DNA for an initial PCR screening.

Ear notch punch code:



3. Tattoos are an effective method of permanent identification. Tattoos can be applied anywhere on the body but are most commonly applied either to the tail (adult rodents, often in the form of numbers) or to the foot pad (neonates, colored dots).

a. Electric tattooing

- An electric tattoo machine can be used to write numbers or symbols on the tail, ear, or footpads.
- Needles must be sterile and sharp. Needles should be changed between each group of animals or when the needle becomes blunted.
- Anesthesia is recommended when tattooing mice over three weeks of age with more than a colored dot.

b. Microtattooing

- Microtattooing systems utilize a hypodermic needle at one end of a stainless steel forcep and a small metal cup containing a tattoo paste at the other side of the forcep.
- By squeezing the forceps together, the needle penetrates the toe/foot pad, ear or tail of the animal and injects a deposit of tattoo ink in the animal.
- Anesthesia is required when tattooing adult mice with more than a colored dot.

Note: If a rodent is tattooed as a neonate, the animal may need to be re-tattooed when older. Follow manufacturer's guidelines for procedures and recommended age for both electric tattooing and microtattooing. Tattooing may require special training. For information on training, please contact trainer@ACUC@ucsf.edu

4. Toe clipping can be used as a method of identification and collection of tissue for genotyping. This method can be considered under the following conditions:

- Alternative methods of identification are first considered and scientific justification is provided.
- It should only be performed when mice are between 5-14 days of age and anesthesia is required for mice >7 days of age.
- The procedure is limited to only one digit per extremity and permits removal of just the first bone.
- The foot should be cleaned with aseptic technique and sharp sterile scissors should be used.
- After removing the digit gentle pressure should be applied until hemostasis occurs.

5. Electronic transponders are an effective method of automated identification of individual animals. The microchip must be encapsulated in biocompatible material and sterilized before implantation. A subcutaneous implantation site is advised in the lateral left side of the neck, slightly cranial to the shoulder. Anesthesia or physical restraint may be used when applying the transponder. We recommend following manufacturers guidance regarding what need gauge to choose.

References:

The Jackson Laboratory: <https://ucsf.box.com/s/9wwpjm8m9j3im0jv2up5hk9lbr13a8t3>

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Paluch LR, Lieggi CC, Dumont M, Monette S, Riedel ER, Lipman NS. Developmental and behavioral effects of toe clipping on neonatal and preweanling mice with and without vapocoolant anesthesia. *J Am Assoc Lab Anim Sci.* 2014;53(2):132-140.

Schaefer DC, Asner IN, Seifert B, Bürki K, Cinelli P. Analysis of physiological and behavioural parameters in mice after toe clipping as newborns. *Lab Anim.* 2010;44(1):7-13. doi:10.1258/la.2009.009020