



Guidelines for Rodent Ear Tagging with Metal Hanging Tags

1.0 Scope and Application

Accurate identification of individual rodents is essential for quality research and maintenance of animal health records. This document provides guidelines for the proper placement of metal band rodent ear tags to promote consistent application and the reduction of post-procedural complications. This suggested guidance is intended to assist personnel within the Florida State University Animal Care and Use Program who apply ear tags for rodent identification. Complimentary mouse and rat Standard Library Procedures for ear tag placement are available in RAMP.

2.0 Summary of Method

Ear tagging should only be performed on rodents over 14 days old. The ears on younger animals are not large enough to support the weight of the tag ^{1,2}. No anesthesia is required when tagging is performed by trained personnel.

Metal tags cannot be present during ECHO MRI, MRI, or CT imaging. If these procedures are anticipated, another identification method should be chosen, or ear tags will need to be removed. While inexpensive, due to possible use limitations and associated medical issues, alternative tags should be considered (e.g. RapID tags or La Pias like tags).

- **Equipment Required**

- Metal ear tags (appropriately sized for the species and age)
- Ear tag applicator
- Diagonal, carbide-tipped wire cutters (for tag removal)

- **Methodology**

- Ear tags and associated instruments must be sterilized prior to the tagging session and visually inspected to ensure they are free of rust or other damage. Steam autoclaving is the preferred method of sterilization; other sterilization methods are listed in Table 1.

- Place tag into applicator device (holed end of tag is positioned over notched area of the applicator; pointed end of tag is opposite the hole), as shown below.



Image Credit: Johns Hopkins University Animal Care and Use Committee

- Gently restrain the awake mouse manually by scruffing the animal high on the neck to control both the body and the head, leaving the ears accessible.
- Wipe the ear with 70% alcohol or chlorohexidine.
- Position the ear pinna between the point and the hole of the tag. Place the tag near the base of the ear, approximately 3mm from the edge of the pinna. There is a ring of cartilage on the base of the ear that you will use as an anatomical landmark when locating the appropriate spot to place the tag. In some strains of mice, it may be more visible than others. In the photo below, the red box indicates the ear tag placement location.

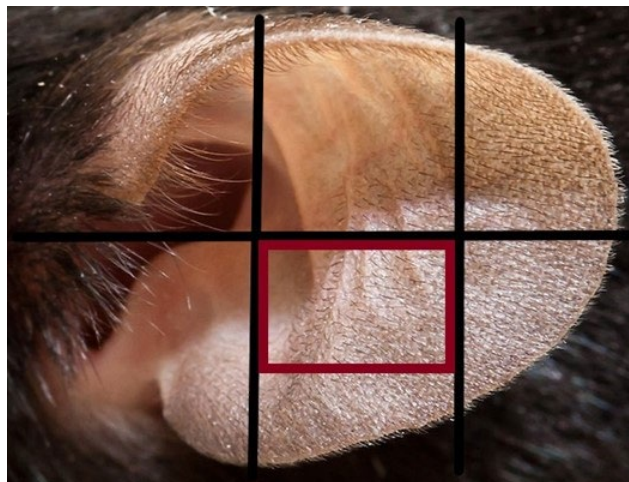


Image Credit: University of North Carolina Chapel Hill Office of Animal Care and Use

- Apply the tag so that the number is visible towards the front or back, whichever is preferable. The photo on the left shows the numbers visible from the front, while the photo on the right shows the numbers facing towards the back.

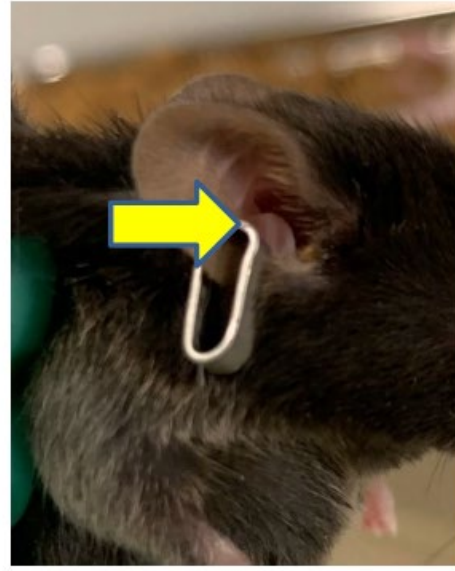


Image Credit: Johns Hopkins University Animal Care and Use Committee

- Squeeze applicator firmly to apply the tag.
 - Be sure that the tag point has come through the hole and is bent over to secure the tag properly.
 - Verify the tag is secure and there is no active bleeding. Return the animal to the cage and observe for normal behavior, then transfer the animal to the animal housing.
 - Ear tags should be checked whenever the animal is handled to verify that there is no tearing, inflammation, or infection. Ear tags may need to be removed if they are incorrectly attached, if tearing, swelling, bleeding, redness, or dermatitis of the ear is observed, if the animal is frequently scratching, or if an infection develops.
- **Removal**
 - If the tag needs to be removed, use carbide-tipped sterile diagonal wire cutters. Angle the tag so the curved end faces you. Apply the cutter to the curved part to cut the tag into two pieces and gently remove the tag. Apply an antiseptic (e.g. chlorohexidine) to clean and disinfect the area.
 - Verify there is no active bleeding. Return the animal to the cage and observe for normal behavior, then transfer the animal to the animal housing.
- **Treatment (if a tag is torn out)**
 - If comfortable with assessment and treatment, follow steps below. If not comfortable, or ear damage is extensive, submit a [clinical case request for veterinary care](#).

- If the ear is still bleeding, apply firm digital pressure for 30 seconds to 1 minute to stop bleeding
- Once bleeding has stopped (or if no bleeding is observed), inspect the ear for any swelling, debris, dermatitis or other signs of bacterial infection.
- Clean the wound or torn edges with a cotton-tipped applicator or gauze soaked with antiseptic or disinfectant (e.g. chlorhexidine).
- Apply a topical antibiotic for 1-7 days.
- Record all treatment on a green sick animal card.

Table 1: Examples of Sterilization Methods For Surgical Instruments & Equipment

AGENT	*EXAMPLES	COMMENTS
Steam Sterilization (moist heat)	Autoclave	Effectiveness dependent upon temperature, pressure and time, e.g. 121°C for 15 min vs 131°C for 3 min. Appropriate sterilization indicators should be used to ensure sterility.
Dry Heat	Dry Chamber (static or forced air)	340°F for 60 minutes; 320°F for 120 minutes; 300°F for 150 minutes Instruments must be cooled before contacting tissue.
Glass/Hot Bead “Sterilizer”	Glass bead sterilizer	Not cleared by FDA as a sterilization device. Fast, but only sterilizes portion of instruments in full contact with glass beads. Must not be used with hollow instruments due to possibility for heated instruments to explode. Must not be used for survival surgeries involving gross contamination (e.g. gastrointestinal surgery). For survival surgeries, instruments must first be sterilized using another CDC recommended sterilization method.
Gas sterilization	Ethylene Oxide	Requires 30% or greater relative humidity for effectiveness against spores. Gas is irritating to tissue; all materials require safe airing time. Appropriate sterilization indicators should be used to ensure sterility.
Chlorine	Sterilant Levels of Chlorine dioxide (Clidox®, Alcide®) Sodium hypochlorite (Clorox® 10% solution)	Corrosive to instruments. Items must be clean and free of organic material. Instruments must be rinsed with sterile saline or sterile water before use.

Glutaraldehydes	Glutaraldehyde (Cidex®, Cetylcode®, Metricide®)	Several hours required for sterilization. Corrosive and irritating. Instruments must be rinsed with sterile saline or sterile water before use. Product expiration dates must be adhered to as per manufacturer's instructions.
Hydrogen peroxide Acetic acid	Actril®, Spor-Klenz®	Several hours required for sterilization. Corrosive and irritating. Instruments must be rinsed with sterile saline or sterile water before use.
Alcohol	Ethanol or Isopropanol	Alcohol is neither a sterilant or high-level disinfectant. May be acceptable for some procedures, if prolonged contact time are used.
*The use of common brand names as examples does not indicate a product endorsement. Note: Always follow manufacturer's instructions for dilution, exposure times and expiration Periods.		

¹ Dahlborn, K., Bugnon, P., Nevalainen, T., Raspa, M., Verbost, P., and E. Spangenberg. 2013. Report of the Federation of European Laboratory Animal Sciences Working Group on Animal Identification. *Laboratory Animals* 47(1): 2-11.

² Wever, K., Geessink, J., Brouwer, M., Tillema, A., and M. Ritskes-Hottinga. 2017. A Systematic Review of Discomfort Due to Toe or Ear Clipping in Laboratory Rodents. *Laboratory Animals* 51(6): 583-600.