
1. PURPOSE

This Standard Operating Procedure describes acceptable methods for identifying rodents.

2. RESPONSIBILITY

Principal investigator (PI) and their research staff, veterinary care staff.

3. MATERIALS

- 3.1. Cage cards
- 3.2. Non-toxic, indelible markers
- 3.3. Tattoo machine
- 3.4. Micro-tattoo system
- 3.5. Ear punch
- 3.6. Ear tags and applier
- 3.7. Microchip system
- 3.8. Analgesics
- 3.9. Anesthetics (general and local)
- 3.10. Skin disinfectant (e.g., 2% chlorhexidine solution)
- 3.11. 70% alcohol
- 3.12. Clean, sharp iris scissors or disposable scalpel blade

4. PROCEDURES

- 4.1. Cage cards:
 - 4.1.1. Use cage cards to identify individually-housed mice or a single breeding pair.
 - 4.1.2. Use cage cards to identify groups of mice on protocols where individual identification is not necessary.
- 4.2. Temporary markings:
 - 4.2.1. Temporary marking can be used for short-term individual identification.
 - 4.2.2. Use a non-toxic, indelible marker to write numbers, bars, or other distinguishable markings, on the tail or the ears.
 - 4.2.3. If temporary marking is to be used for a duration exceeding a week, repeat markings as needed.
- 4.3. Tattooing:
 - 4.3.1. This procedure is performed under general or local anesthesia.
 - 4.3.2. Use an electric tattoo machine to write numbers on the tail.
 - 4.3.3. Ensure that needles are sterile and sharp.
- 4.4. Micro-tattooing:
 - 4.4.1. Use a micro-tattooer or 30G needle to inject tattoo ink in the toe pads or the ears or the tail.
 - 4.4.2. This method is suitable for both neonates and adults.
 - 4.4.3. Whenever possible, use a simple code to limit the number of toes tattooed. See [Annex 1](#).
 - 4.4.4. Have the identification chart readily available in the animal room to allow prompt identification of individuals.

- 4.5. Ear notching/ ear punching:
- 4.5.1. **Do not** use this method in rodents under 2 weeks of age.
 - 4.5.2. Restrain the animal securely and using the ear punch, punch holes and/or notches in the ears, following an identification chart.
 - 4.5.3. Use a maximum of two punches per ear.
 - 4.5.4. Whenever possible, use a simple code to limit the number of notches/punches. See [Annex 1](#).
 - 4.5.5. Have the identification chart readily available in the animal room to allow prompt identification of individuals.
 - 4.5.6. If possible, use the excised tissue as a sample for genotyping, replacing the need for a tail biopsy.
- 4.6. Ear tags:
- 4.6.1. Use tags that are about 5 mm long.
 - 4.6.2. Rinse the tags in 70% alcohol before use.
 - 4.6.3. Place the tag low on the pinna (distal 1/3) so that it rests against the mouse and does not bend the ear, cause the mouse to hold its head in a lopsided manner, or catch on the cage. See [Annex 1](#).
 - 4.6.4. Monitor site of implantation for local infection or inflammation. If signs of infection or inflammation are noted, please consult veterinary care staff; the ear tag may require removal.
- 4.7. Microchips:
- 4.7.1. Use appropriate general anesthesia and analgesia to implant the microchip.
 - 4.7.2. Implant microchips subcutaneously in the neck area.
 - 4.7.3. **Do not** implant microchips in animals less than 3 weeks old.
 - 4.7.4. Apply disinfectant on the skin (e.g., 2% chlorhexidine solution).
 - 4.7.5. Using the implanter, inject the microchip subcutaneously in the neck area.
 - 4.7.6. Have available a compatible reader to allow identification of the mice.
 - 4.7.7. Reuse microchips only after proper cleaning and sterilization (follow manufacturer’s recommendation).
- 4.8. Distal phalanx biopsy (toe amputation):
- 4.8.1. This method is not acceptable when used for the sole purpose of identifying rodents. Refer to SOP 402 Tissue Collection for Genotyping – Mice.

5. REFERENCES

- 5.1. Canadian Council on Animal Care ([CCAC](#)) [guidelines: Mice](#), August 2019.
- 5.2. Roughan, J. V., & Sevenoaks, T. (2019). Welfare and Scientific Considerations of Tattooing and Ear Tagging for Mouse Identification. *Journal of the American Association for Laboratory Animal Science* : JAALAS, 58(2), 142–153. <https://doi.org/10.30802/AALAS-JAALAS-18-000057>

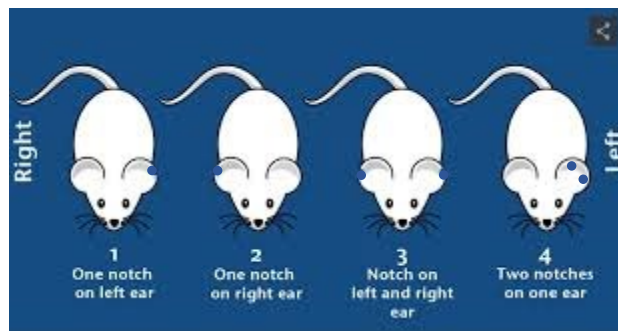
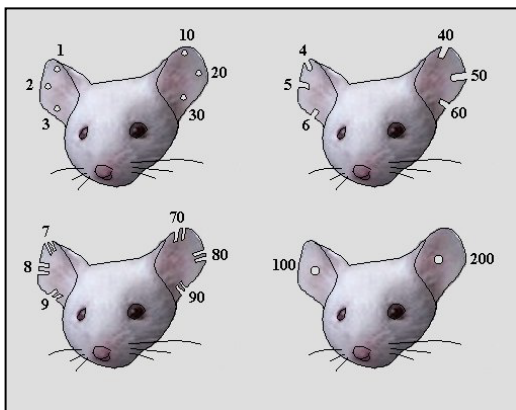
SOP REVISION HISTORY

DATE	NEW VERSION
2019.06.18	4.4.2. This method is suitable for both neonates and adults.
2019.06.18	4.8. Distal phalanx biopsy (toe amputation): 4.8.1. This method is not acceptable when used for the sole purpose of identifying rodents. Refer to SOP 402 Tissue Collection for Genotyping – Mice.
2023.06.09	4.2.3. If temporary marking is to be used for a duration exceeding a week, repeat markings every 2-3 days as needed.
2023.06.09	4.3.1. This procedure is performed under general or local anesthesia. Refer to SOP.
2023.06.09	4.4.1. Use a micro-tattooer or 30G needle to inject tattoo ink in the toe pads or the ears or the tail.

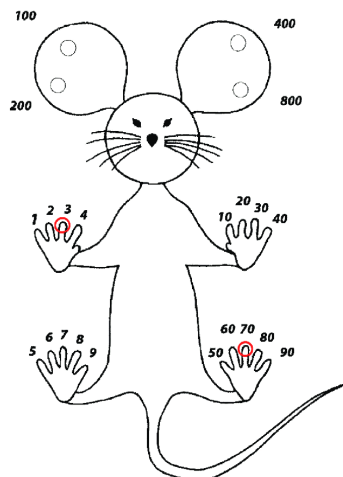
2023.06.09	4.5.3. Use a maximum of two punches per ear.
2023.06.09	4.6.4. Monitor site of implantation for local infection or inflammation. If signs of infection or inflammation are noted, please consult veterinary care staff; the ear tag may require removal.
2023.06.09	4.7.1. Use appropriate general anesthesia and analgesia to implant the microchip. Refer to SOPs.
2023.06.09	5.1. Guidelines on Genetically Engineered Animals, 2nd Draft; Canadian Council on Animal Care (CCAC): http://ccac.ca/gea_downloads/GEA_Guidelines_Second_Draft_18Aug08.pdf guidelines: Mice, August 2019.
2023.06.09	5.2. CompMed listserv; American Association for Laboratory Animal Science (AALAS): http://www.aalas.org/online_resources/listserves.asp#compmed
2023.06.09	5.2. Roughan, J. V., & Sevenoaks, T. (2019). Welfare and Scientific Considerations of Tattooing and Ear Tagging for Mouse Identification. Journal of the American Association for Laboratory Animal Science : JAALAS, 58(2), 142–153. https://doi.org/10.30802/AALAS-JAALAS-18-000057

Annex 1 – Rodent Identification Examples

Ear notch code samples



Toe microtattoo code samples



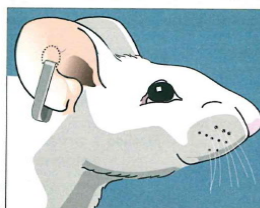
Ear tag placements



EAR TAG TARGET AREA



PROPER PLACEMENT



INCORRECT PLACEMENT



Position applicator such that the pointed end of the ear tag is within the area enclosed by the dashed oval and the curved end of the tag will be on the lower end of the ear. Do not insert the tag through the folds of cartilage that protect the auditor canal (shown as gray area).