Animal Facility SOP 21.1
Identification of Animals SOP

Date Adopted	9/29/20
Date Last Updated	9/29/20
Prepared by	Gloria Hoffman/Julie Watson updated by Ingrid Tulloch
Reviewed by	Julie Watson; Terzi 2/25/2020

I. SCOPE: The Guide for the Care and Use of Laboratory Animals (Guide) NRC 2011 indicates means of animal identification including room, rack, pen stall and cage cards with written or bar-coded or radio frequency identification (RFID) information. Identification cards should include the source of the animal, the strain or stock, names and contact information for the responsible investigator(s), pertinent dates (e.g. arrival or birth dates) and protocol information. Genotype information should also be included and consistent unambiguous abbreviations should be used when the full genotype nomenclature is too lengthy. Animals may wear collars, bands, plates or tabs or be marked by colored stains, ear notches/punches and tags, tattoos, subcutaneous transponders and freeze brands. Toe clipping for small rodents should only be used when no other individual identification method is feasible, however it may be the preferred method for simultaneous genotyping and identification in mice 0-7d.*New information suggests that the age range where this is acceptable may be up to 12d).

The most common methods for rodent identification include ear tags and ear punch. Ear punch has the advantage that a single procedure provides identification and samples for genotyping. As it is in the slight or momentary pain category it does not require analgesics. However it cannot be used in animals 0-15d due to the small size of the ears. More recent information suggests that toe clipping is an acceptable alternative for mice aged 0-15d. Transponders and RFID tags are a valuable means of permanent identification but cost may limit their use to valuable/long term animals.

II. Standard Operating Procedures:

1. Color Staining or marking: Marking of the fur with a permanent marker (*e.g.* sharpie™) is useful for temporary identification of different animals within the cage. Only non-toxic markers should be used and markings refreshed every other day to ensure it does not fade. Each cage on a rack is assigned an alpha-numeric and sex symbol code number that is written on the cage card to indicate the room, rack, cage, number of animals and the sex (e.g., 116U-R1-C1-2♂ = Room 116 U, Rack 1, cage1, male 1 & 2). An individual animal in a given cage can be identified as follows.

On animal tail Rat 1 = "I" Rat 2 = "II"	On animal tail Mouse 1 = "I" Mouse 2 = "II"

	Mouse 3 = “III” Mouse 4 = “IV”
On cage card 16U-R1-C1-2♂	On cage card 116-R4-C2 4♀

2. Ear Punching/Notching: This is performed using a punching/notching device. Training is required. Holes that are placed too close to the ear margin will have a tendency to tear, while holes too close to the head are prone to close. The most common use for ear punching/notching is to identify different animals within a cage, although the use of a standardized system and multiple notches can allow numbering up to several hundred. However damage to the ears can result in these becoming unreadable. **Not recommended by facility staff but allowed if approved by the IACUC for specific researchers with appropriate training.**

3. Ear Tags: Rodent ear tags designed specifically for small rodents and are predominantly made of nickel-copper alloy. Ear tags are self-piercing and a tag is attached with a special applicator. Training is required. Positioning of the ear tag is important - the tag should be placed sufficiently far into the ear to prevent it from easily pulling out, but space should be left to allow for ear growth. Tags should be sterilized before use. They can be lost due to fighting or irritation, and are not advisable in immune deficient mice because of the risk of infection. **Not recommended by facility staff but allowed if approved by the IACUC for specific researchers with appropriate training.**

4. Tattoos: Tattoo identification of toes or tail can be done by using a sterile needle to inject a small amount of dye, or using a commercial tattoo device such as the one made by Ketchum manufacturing. **can be used with appropriate training if approved by IACUC on the researcher’s protocol**

5. Subcutaneous Transponders: A sterile transponder is inserted under the animal's skin by subcutaneous injection. Issues to consider are size, (the cheapest transponders are the largest and may not be suitable for very small mice), compatibility (not all transponders are compatible with all receivers), range (it is helpful to reach cage-side) and recyclability. **Not recommended by facility staff but allowed if approved by the IACUC for specific researchers.**

6. Toe-clipping (disarticulating the joint between P2 and P3 of the digit). This method requires training and is applicable for simultaneous identification and genotyping of animals less than 15d of age. It requires approval by the IACUC. **Not recommended by facility staff but allowed if approved by the IACUC for specific researchers.**

Mouse Identification Methods:

Method	Pros	Cons
Ear punching	Simple, inexpensive, and easy to read; tissue may be used for genotyping	Subject to tearing; limited numbering system, up to 399
Ear tagging	Relatively inexpensive; customized numbering available	Can become detached; potential for infections; can be hard to read
Tattooing	Permanent; can be done on neonates and adults; inexpensive equipment is available	Mechanical equipment is expensive; aged animals may require re-tattooing
Microchip	Permanent; unlimited numbers	Expensive; may require anesthesia; mice must be sufficient size to tolerate implant
Toe clipping	Permanent; inexpensive ; tissue may be used for genotyping	Requires scientific justification in the animal protocol