Institutional Animal Care and Use Committee (IACUC)

Rodent Identification Policy

Date of IACUC Review and Approval: February 3, 2017

I. **Purpose:** The Brown University IACUC has developed this policy to provide information and guidance regarding commonly used rodent identification techniques. Whichever method is used must be indicated in the protocol and approved by the IACUC. For training in any of these methods, please contact veterinary services.

II. **Ear punching:**
   - Definition: Application of a specific combination of small hole punches or notches to the outside edges of a rodent’s ear.
   - This method can be performed on animals 14 days old or older.
   - Punch devices should be disinfected between animals with chlorhexidine or 70% alcohol.
   - Punched tissue may grow back, so the ears must be checked periodically and punching may need to be repeated.
   - The tissue removed can also be used for genotyping.
   - Please see an example of a punching device and a numbering system at the end of the policy (Fig 1).

III. **Ear tagging:**
   - Definition: Attachment of a metal or plastic tag with a unique identification number or code to the base of a rodent’s ear.
   - This method can be performed on animals 14 days old or older.
   - The site should be disinfected prior to placement with chlorhexidine or 70% alcohol to minimize potential for infection.
   - Ear tags should be monitored regularly after placement and assessed for complications.
   - Ear tagging can lead to pressure necrosis, ulcerations, inflammation, neoplasia, and infection. These conditions can be exacerbated by improper placement.
   - Ear tags may not be compatible with protocols involving advanced imaging (MRI, CT).
   - Please see the image at the end of the policy for proper ear tag placement (Fig 2).

IV. **Tattooing:**
   - Definition: A permanent mark made using needle and ink, which is applied to the tail, toes, ears, or foot pads.
   - This method may be done in neonates or adults. Anesthesia is recommended, but not required, when tattooing adults.
• There are manual and electric equipment options commercially available.
• The site should be disinfected using chlorhexidine or 70% alcohol before injection to minimize risk of infection.

V. Microchipping:
• Definition: Injection of a small transponder subcutaneously between the shoulder blades using a large bore needle. The microchip is read by use of a scanner.
• This method should be performed on animals over 7 days old, and preferably after weaning.
• The site should be disinfected using chlorhexidine or 70% alcohol before injection to minimize potential for infection.
• Some microchips can also measure physiologic data (e.g., body temperature).
• Microchips may not be compatible with protocols involving advanced imaging (MRI, CT).
• Microchips can lead to tissue response or neoplasia with prolonged placement.

VI. Non-permanent methods:
• Definition: These techniques are temporary and are only appropriate for short term identification purposes.
• Methods include fur clipping, application of non-toxic fur dyes, or markers used on the tail.

VII. Toe clipping:
• Toe clipping should only be used when no other individual identification method is feasible.
• Definition: Procedure in which the most distal bone of the toe (3rd phalanx) is removed with a sharp instrument.
• This method can only be performed in rats 5-7 days old and mice 7-10 days old.
• Sharp scissors are recommended for toe-clipping in neonatal rodents. The site should be disinfected and the equipment should be disinfected between animals with chlorhexidine or 70% alcohol.
• The aim is to remove only the complete distal phalanx, if possible.
• Any numbering system used should be designed to minimize the total number of toes clipped per animal. Similarly, a given foot should have as few toes clipped as possible; two is the maximal number.
• Front toes should never be clipped if animals may subsequently be used in grip testing.
• The tissue removed can also be used for genotyping.
• Please see the reference and example numbering system at the end of the policy (Figs 3a and 3b).
VIII. References:

Fig 1: A commercially available ear punch and a commonly used numbering scheme for mouse ear punches.

Fig 2: Correct placement of a metal ear tag in the pinna of a mouse.

Fig 3a: Proper technique for toe clipping requires removal of the entire most distal toe bone (3rd phalanx) and nail bed, which often requires removal of a small portion of the 2nd phalanx.

Fig 3b: Commonly used numbering scheme for mouse toe clipping.