

INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE (IACUC)

POLICY ON TOE-CLIPPING OF MICE

Overview/Purpose

This IACUC policy describes when mouse toe clipping is permitted, and the standard procedures required for performing this technique. The policy is intended for use by mouse users only when individual mouse pup identification or genotyping is required prior to an age when other methods (e.g., ear punch, tail biopsy, tattoo, ear tag, or microchip) are appropriate. Toe-clipping should not be used when less painful methods can be performed.

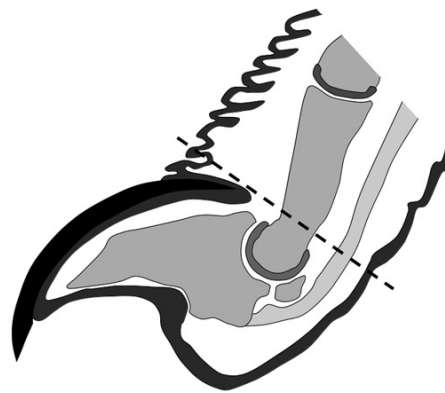
Requirements

1. Toe clipping is a potentially painful procedure depending on the age in which it is performed and its use in animal studies is discouraged.
2. Toe clipping should be performed only on neonatal mice 7 days of age or younger.
3. Toe clipping as a method of identification or genotyping should be used only when no other individual identification method is feasible or when there is a scientific need to obtain genotyping results at an early age, before tail snipping or ear notching are viable options.
4. The investigator must justify use of this method in the animal care and use protocol.
 - a. Breeding form. The Breeding form must include an explanation why identification or genotyping of individual neonatal animals is necessary within the context of the experiment and why the use of other methods of identification or genotyping are not possible. The explanation should describe the scientific need to genotype neonates rather than waiting until the animal is large enough to utilize less invasive methods such as ear notching or tail biopsy. Examples include studies involving mutant strains exhibiting a phenotype at a young age that must be genotyped and identified prior to

tissue harvest or administration of experimental substances before ear notching or tail biopsy can be performed

- b. Procedure form. A Procedure form that includes a detailed description of the toe clipping procedure must be added to the protocol; a Procedure Bank form is available for importing into the protocol ([Toe Clip for Mice](#)). All toe-clipping must be approved by the IACUC.
5. Toe clipping should be performed only by trained personnel using sanitized, sharp scissors of suitable size, in a manner that instantly removes the last end joint of the toe with minimal trauma. Under all circumstances aseptic practices should be followed. Scissors must be sanitized between mice. The IACUC also recommends that the scissors should be frequently sharpened or replaced.
6. Only the end joint of the toe should be removed per diagram below:

Figure 1. 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 (adapted from Dahlberg, et al., 2013).



7. No more than 2 toes per foot may have their end joints removed. Do not cut thumbs on the forefoot.
8. Toe-clipped mice should be observed for at least 5 minutes to ensure that bleeding is controlled. Operators should be prepared to apply pressure with sterile gauze if bleeding continues.
9. Mice that have had toes clipped should be observed closely to confirm the absence of infection.
10. If toe-clipping is approved on the IACUC protocol, the toe tissue, when possible, should be used as a source of DNA for genotyping instead of collecting additional tissue samples.

11. If tissue samples alone are needed, the investigator should consider ear punching or other alternative methods.
12. If identification alone is needed, the investigator should consider tattoo application, non-toxic permanent marker, ear notching, or other alternative methods.
13. The IACUC will monitor implementation of this policy and will modify it based upon its experience, as well as emerging material trends or policy.
14. Investigators who need to perform toe clipping other than as described above must provide further scientific justification as to why they cannot comply with the policy. Additional requirements, such as anesthesia and analgesia, will likely be required when toe clipping is performed other than as described in this policy.

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v1.1, March 2017
v1.2, 19 August 2020