

Procedure Type: Tissue Collection for Genotyping

Procedure Title: Ear Punching for Genotyping in Conscious Mice

Species: Mouse

Pain/Distress Category: C

Background Information:

Techniques will comply with ACUC Guidelines for “Antemortem Tissue Collection for Genotyping.” If techniques will not comply with ACUC Guidelines, insert variation with justification below in the section: "How does this procedure fit into or address your overall research goals?"

Tissue collection for genotyping guidelines: Obtaining blood/tissue samples from mice to determine the presence/absence of a particular gene product is a common procedure when breeding genetically modified mice. The tissue collection method used is largely dependent upon the quantity of DNA sample required for Polymerase Chain Reaction (PCR) analysis. For smaller sample requirements, you may be able to use hair, buccal epithelial cells from mouth swabs, a dried blood spot, or an ear punch (which also serves as a method of identification).

Note: Can be performed on an awake, properly restrained mouse. This method can also be used to identify individual mice (minimum age of p12) – see ACUC Procedure “Identification of Conscious Mice (Pre filled).”

Procedure Description Tab:

Procedure Description:

Procedural Steps for ear punch:

1. Manually restrain mouse, allowing access to the ears.
2. Using a special ear punch tool that has been chemically disinfected, place the ear punch on the appropriate position on the pinnae of the ear and engage the punch quickly and firmly to ensure a clean cut. The punch will yield a sample of tissue approximately 1-2 mm in diameter. Place tissue sample into specimen vial.
3. Return mouse to its cage. Be sure to remove any blood from the ears of pups before returning to dam to discourage cannibalism.
4. Note: Disinfect punch between animals.

How does this procedure fit into or address your overall research goals?

(Insert protocol-specific rationale here.)

Please list any clinical effects or changes from the normal health and behavior of an untreated animal which may occur as a result of this procedure.

While negative clinical effects from ear punching are not expected, unreadable punches/notches, cannibalism of neonates, tissue trauma, and infection may occur.

Describe post procedure monitoring that will be performed.

Mice will be examined immediately following the genotyping procedure to verify hemostasis, as well as the following day for general appearance, activity level, and the potential adverse events listed above.

What criteria will be used to determine if animals exhibiting clinical or behavioral changes should be euthanized?

If any abnormal signs are noted the animal will be euthanized immediately.

Peri procedure Care/Analgesics tab:

Not applicable.

Other Agents Utilized tab:

Not applicable.

Reference:

Ren S., et al. 2001. A simplified method to prepare PCR template DNA for screening of transgenic and knockout mice. Contemp Top Lab Anim Sci 40:27-30.

Updated/ACUC approved:

Jan. 2022