Procedure Type: Tissue Collection for Genotyping
Procedure Title: Tail Clipping for Genotyping in Anesthetized Mice
Species: Mouse
Pain/Distress Category: D

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. Some analytical and confirmatory techniques may require more tissue. The most common method for collecting those tissue samples (< 5mm) is tail clipping.

Note: Anesthesia is required if performed after the mouse is weaned (> 21 days of age). Prior to weaning (≤ 21 days), procedure can be done in conscious pups (please use Pre-filled Procedure "Tail Clipping for Genotyping in Conscious Mice").

Procedure Description Tab:

Procedure Description:

Procedural Steps for tail clipping:

1. Anesthetize mouse per regimen outlined in the Anesthetic Regimen tab.
2. Moisten site with alcohol.
3. Using autoclaved, chemically disinfected, or glass bead sterilized scissors or blade, make a transverse cut approximately 2-4 mm from the distal tip of the tail. Place tissue sample into specimen vial.
4. Apply pressure to the tip of the tail with a sterile gauze pad until bleeding has stopped. Styptic powder or tissue adhesive can also be used to aid hemostasis.
5. Return mouse to its cage once it is fully conscious and ambulatory.
6. Note: Disinfect scissors or blade between animals. Scissor blades should be sharpened and blades should be replaced regularly to minimize tissue trauma.

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 tail clipping are not expected, cannibalism of neonates, tissue trauma, and infection may occur.

Describe post procedure monitoring that will be performed.
Hemostasis will be verified, and mice will be monitored until they are fully awake (e.g., upright and ambulatory), before returning any animal to their housing room. Mice will be examined immediately following blood collection and weekly thereafter, for general appearance and activity level, as well as potential adverse events based on blood collection method (see above).

What criteria will be used to determine if animals exhibiting clinical or behavioral changes should be euthanized?
If any abnormal signs are noted, an OLAC veterinarian will be contacted or the animal will be euthanized immediately.

Anesthetic Regimen tab:

Anesthetists:
(Insert anesthetists here keeping in mind that all anesthetists must be certified by OLAC prior to performing this procedure independently.)

Parameters that will be monitored during anesthesia (check all that apply):

☑	**Respiratory Rate**
☐	**Heart Rate**
☐	**Body Temperature**
☐	**Blood Pressure**
☐	**Corneal/Palpebral Reflex**
☑	**Pedal Reflex**
☐	**Capillary Refill**
☐	**PO2**
☐	**ETCO2**
☑	**Other (Describe)**
	Skin color or mucous membrane color

Describe recordkeeping methods during anesthesia. For guidance, please refer the ACUC Recordkeeping Guidelines for Surgical Procedures on Laboratory Animals.
Stable respiratory rate, lack of pedal reflex, and skin color or mucous membrane color will be monitored during anesthesia and recorded initially, as well as every fifteen minutes if necessary, until the animal has fully recovered. Anesthetic records will be kept in the lab notebook.

Anesthetic Agents:
Agent Name: Isoflurane
Dosage: Induce 3-4%; Maintain 1-2%
Route: Inhalation (IN)
Describe timing frequency and duration of administration: Mice are initially anesthetized

with 3-4% isoflurane by placing them in an induction chamber. Once anesthetized, the mouse is then transferred to a nose cone respirator connected to a precision vaporizer that delivers 1-2% isoflurane for maintenance.

Agent Name: Other
Isoflurane via drop jar method
Dosage: 1-2 drops
Route: Inhalation (IN)
Describe timing frequency and duration of administration: Mice will be anesthetized using an open-drop isoflurane chamber. The mouse will be placed in this chamber, which contains a cotton ball (or equivalent) saturated with isoflurane. The cotton ball will be physically separated from the animal to ensure that the cotton ball will not come into direct contact the mouse.

Other pre-medications not already listed above:
Agent Name: Ocular Lubricant
Dosage: NA
Route: Topical
Describe timing frequency and duration of administration: A thin strip of ointment is applied to each eye upon induction of anesthesia.

Peri procedure Care/Analgesics tab:
Not applicable.

Other Agents Utilized tab:
Not applicable.