Tail Clipping in Mice

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Applications

- Blood collection
- Genotyping
# Alternatives

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<thead>
<tr>
<th></th>
<th>ID</th>
<th>Genotyping</th>
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<tbody>
<tr>
<td>Toe clipping</td>
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<tr>
<td>Tail clipping</td>
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<td>Ear punch</td>
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<td>Tattooing</td>
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<td>Metal ear tag</td>
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<td>Microchip</td>
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<td>Toe nail clipping</td>
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<td>Blood sampling</td>
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<td>Dye on skin/hair clip</td>
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<td>Saliva/epithelial cells</td>
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<td>Rectal scrapings/feces</td>
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<td>Hair follicles</td>
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UTD Policy

- Up P21 – anesthesia not required
- P22+ anesthesia/analgesia required
- Aseptic technique – alcohol minimum
- Bleeding control – required

P = Postnatal day
Technique

- Anesthesia/analgesia for P22+ (not required up to P21)
- Sharp scissors or surgical blade (preferred)
- Wipe tail and scissors with alcohol
- Remove up to 5 mm
- Bleeding control
Anesthesia/Analgesia – P22+

- Gas - isoflurane
- Topical
- Local with lidocaine with epinephrine
- Local hypothermia
- If systemic analgesics, should be administered at least 30 min < tail snip
General Anesthesia

- Isoflurane
  - Vaporizer induction chamber
  - Open drop technique
Isoflurane - Vaporizer

- Induction chamber
  - 3-5% isoflurane
  - 0.5 L/min oxygen
Open Drop

Pathology cassette with isoflurane soaked material

Centrifuge tube
Depth of anesthesia can be controlled by moving the nose cone closer or farther away from the nostrils

Wire or plastic grate

Absorbent material
Isoflurane soaked
Open Drop

- Scavenging required (e.g., fume hood)
- Used for short term anesthesia (vs. calibrated vaporizer)
- Prolonged use (beyond a couple of minutes) results in deaths
Topical Anesthesia

- **Cetacaine**
  - Benzocaine, Butamben & Tetracaine
- **Ethyl chloride**
  - Topical anesthetic skin refrigerant
  - Flammable
  - Freezing may cause tissue distortion
Local Anesthesia

• Infiltration: Lidocaine 2% with Epinephrine 1:100,000
• Epinephrine?
  – Prolongs anesthetic effect of lidocaine
  – Vasoconstriction facilitates hemostasis
• Helpful for clipping older mice P22+ (with justification)
Bleeding Control

- Kwik Stop
- Silver Nitrate
- Gauze