Rodent Tail Vein Injections

Tail Anatomy

**Mice**
Veins are very superficial and can be seen in mice with light colored skin. Only the lateral tail veins should be used for injection.

**Rats**
Rats have thicker skin resulting in deeper veins. Only the lateral tail veins should be used for injection.

Recommended Supplies and Injection Amounts

**Examples of Rodent Restrainers**

### Recommended Supplies
- Restrainer
- Syringes
- Needles (23 gauge or smaller)
- Alcohol swabs
- Heat source (warm water bath or heat lamp)

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<th>Possible Injection Amounts</th>
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<tr>
<td><strong>Mice</strong></td>
<td>Lateral Tail Vein 0.2 – 3.0 ml</td>
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<tr>
<td><strong>Rats</strong></td>
<td>Lateral Tail Vein 0.2 – 3.0 ml</td>
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<tr>
<td>Procedure</td>
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| 1) Load syringe with the injection substance.  
  - Make sure no air bubbles are present; bubbles can be fatal if injected. |
| 2) Place the animal in the appropriate restrainer. |
| 3) Warm the tail by immersing it in a warm water bath (around 45 degrees C) for approximately 30 seconds or use a heat lamp.  
  - If it’s too warm for you, it’s too warm for the animal! |
| 4) Wipe the tail with alcohol and locate one of the lateral tail veins. |
| 5) Hold the syringe in your dominant hand. |
| 6) Starting 2/3 the way down the tail, with the bevel up going almost parallel to the vein, insert the needle into the vein.  
  - The vessel is located approximately 2mm under the skin. A flash of blood may be seen in the hub of the needle. The fluid should inject freely without resistance.  
  - If the tail starts to blanch and swell up, remove the needle and try again proximal to the previous location. |
| 7) After injection, remove the needle and apply hemostasis (slight pressure to the puncture site). |
| 8) Return animal to cage. |

When warming mice with a heat lamp, be sure to keep the heat lamp a safe distance (as shown in the picture) from the cage to avoid thermal burns.

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Successful Tail Vein Injection

Unsuccessful Tail Vein Injection

Tail will blanch and a small bleb may form in area of injection if outside of vein.