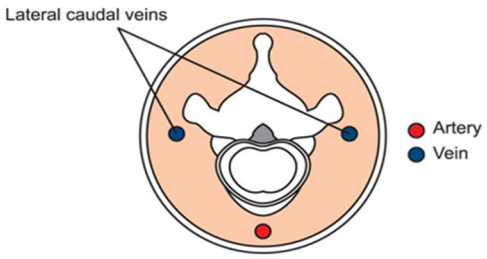
Rodent Tail Vein Blood Collection

Small amounts of blood can be collected from the lateral tail veins in rodents. Animals should be restrained using either an appropriate rodent restrainer or by using anesthesia. The tail can be warmed prior to collection to dilate the blood vessels, which may help facilitate blood collection.

Necessary Supplies:

- Blood collection tubes
- 25 to 27 gauge needles or Lancets
- 70% Isopropyl alcohol
- Gauze pads



Technique:

1. Place the animal in the rodent restrainer with the tail exposed. **(Image 1)** Position the animal on its side, so that the lateral tail vein is facing up. Tighten the locking mechanism to reduce animal movement but ensure the animal can breathe comfortably.
2. Wipe the tail with alcohol to disinfect the skin. This will also increase visibility of the vein.
3. Holding the tail in your non-dominant hand, locate the lateral tail vein.
4. Gently but securely use the needle or lancet to puncture the lateral tail vein. To increase blood flow, you can "milk" the tail by rubbing towards the tip of the tail with your thumb and forefinger. **(Image 2)**
5. For repeat samples (ie. glucose measurements) the scab/clot can be gently removed.
6. For larger sample volumes, the tail can be cannulated with a needle although this is more difficult in mice. **(Image 3)**
7. After blood collection is finished, apply gentle pressure to the injection site using a clean gauze pad until bleeding stops.

Notes:

- A new needle or lancet must be used for each animal.
- Maximum amount of blood that can be collected from rodents is 10% of circulating blood volume (CBV = 55-70ml/kg of body weight) every 10-14 days, 7.5% of CBV every 7 days, or 1% of CBV every 24 hours.
- Warming of the tail can be done by placing the tail in a cup of warm water or by placing the animal's enclosure on a heating pad (85°-95°F) for 1-2 minutes.

Image 1- Proper restraint and needle placement.

Image 2-Successful puncture: Blood flowing.

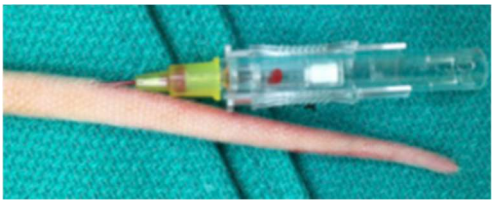


Image 3- Vein cannulation with catheter.