

**Ventral Tail Artery
Blood Collection
In Mice
IACUC Standard Procedure
Effective Date: December 2024**

Description of procedure:

Blood collection from the ventral tail artery allows for the maximum allowable sample volume with minimal trauma to the animal. Repeated collection is allowed. This technique can be performed on restrained mice using a restrainer; however it is strongly recommended to anesthetize mice by trained personnel. When proficient, this blood collection technique takes less than 3 minutes following isoflurane induction.

For information regarding maximum blood collection volume please refer to the UCSF [Mouse Blood Collection Guidelines](#).

Supplies:

- Heat source- ensure that this is not too hot as to cause a burn
- Warm water
- Eye lubrication
- Sterile 26 or 27ga needle
- Blood collection tubes
- Heparinized capillary tubes/Natelson capillary tubes
- Gauze sponges
- Isoflurane anesthesia system

Anatomical location:

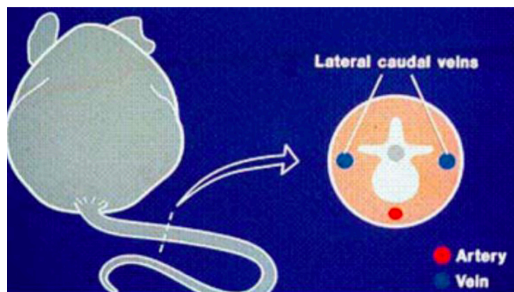


Diagram of a transverse sectional view of mouse tail lateral veins and ventral artery.
Kathryn Flynn, NIH - DVR - SoBran

Procedure Steps:

The mouse should be anesthetized and placed in dorsal recumbency. Mice should receive eye lube and be placed indirectly on a heat source to prevent hypothermia while anesthetized. Use an intervening layer between animal and heat source. Arterial dilatation can be induced by applying warm water-soaked gauze to ventral tail surface.

- Starting point for puncture should be mid-point on the tail (retries should be done slightly proximal on the tail and with a new needle).
- Insert the needle bevel up into the tail artery entering at a 10-15 degree angle. If placed properly the hub will begin to fill with blood (image 2).
- Place capillary tube in hub and gently agitate the artery proximal to puncture sight with a capillary tube to keep clots from forming and to facilitate blood flow. If blood flow is slow or stops, slowly withdraw the needle a short distance to re-establish flow and/or retry. (image 3)
- When blood volume is attained, apply gentle pressure with a piece of gauze on the site to cease blood flow after needle withdrawal.

- When animals are fully recovered and hemostasis has been achieved, they can be returned to their cage. Observe to make sure bleeding does not resume. Contact a veterinarian if you cannot achieve adequate hemostasis.

Image 1.

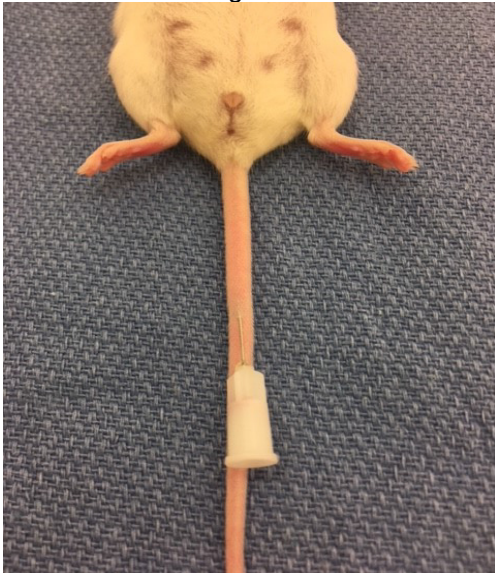


Image 2.

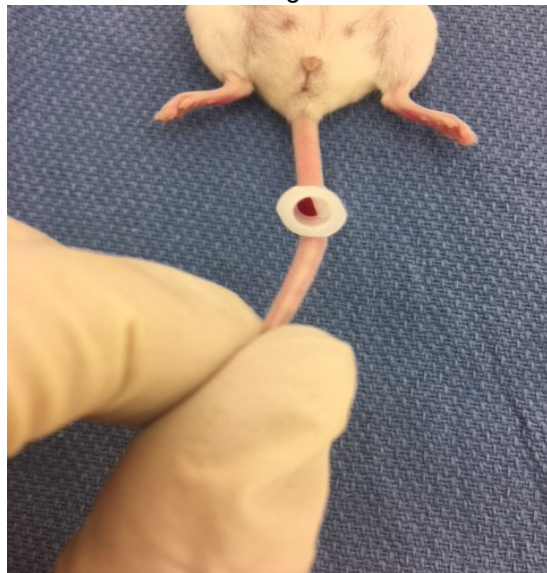
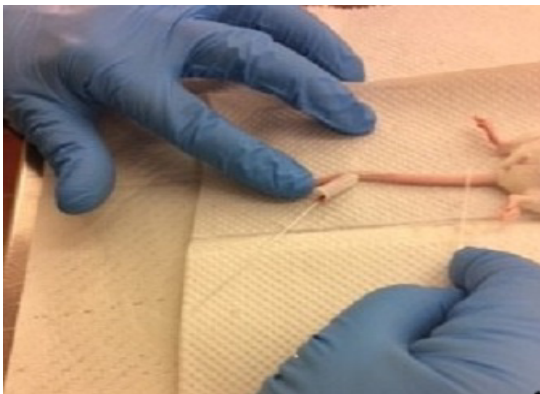


Image 3.



Supplies.



Should you have any questions or would like training in the above technique, please contact the IACUC Training and Compliance staff by email at trainerIACUC@ucsf.edu.

Potential adverse effects to be considered:

- Blood loss
- Hematoma (rare)