

UBC Animal Care Guidelines

SOP: ACC-2012-Tech02

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Blood Collection from the Lateral Saphenous Vein in Mice and Rats SOP

Purpose

This Standard Operating Procedure (SOP) describes the methods for blood collection in rats and mice using the lateral saphenous vein. This SOP follows the UBC and CCAC guidelines for the collection of blood in laboratory rodents.

Responsibility

Those trained persons listed on an approved Animal Care Committee protocol performing the procedure

All animal users collecting blood from rodents must have successfully completed the UBC Animal Care Services (or equivalent) Rodent Biology and Husbandry course

References

Canadian Council on Animal Care (CCAC) guidelines (www.ccac.ca)

UBC Animal Care Committee; Policy on Acceptable Methods of Rodent Blood Withdrawal:
[ANIMAL CARE POLICIES, SOPs & GUIDELINES | Office of Research Services](#)

Calculations

As a general rule most mammals have close to 70ml per kg of circulating blood volume. 10% of this volume (7 ml/kg) can be taken from healthy animals without deleterious effects. This amount can usually be removed every 2-3 weeks.

A volume of 200 μ L can readily be collected using the lateral saphenous technique in adult mice and rats.

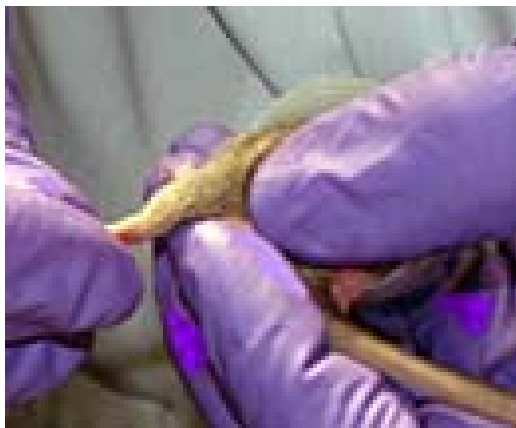
Single or serial blood samples can be collected from rodents without anesthesia using the lateral saphenous vein.

Materials

- Appropriate animal restrainer
- Clippers or depilatory cream (Nair®)
- 70% Isopropyl alcohol
- Cotton swabs
- Glycerin or petroleum jelly
- Blood collection tube
- 25-26 gauge needle or animal lancet appropriately sized for the animal
(Goldenrod from MEDpoint Inc)
- 2 x 2" gauze

Procedure

1. Choose the appropriate restrainer for the species.
2. The animal is held in the restrainer head first so that only the rear legs and tail are free. The rear leg can be stretched out into a natural position.



Mouse



Rat

3. To secure the animal and elevate the vein, the skin on the upper thigh is gently but firmly squeezed, using the same hand that is holding the restrainer.



Mouse



Rat

- The hair is removed either by clippers or by using a depilatory cream and swabbing with 70% alcohol. Depilatory cream should not be left in contact with the skin for more than 1 minute and can be wiped away with alcohol.
- Swab the skin with a small amount of alcohol to help visualize the vein.

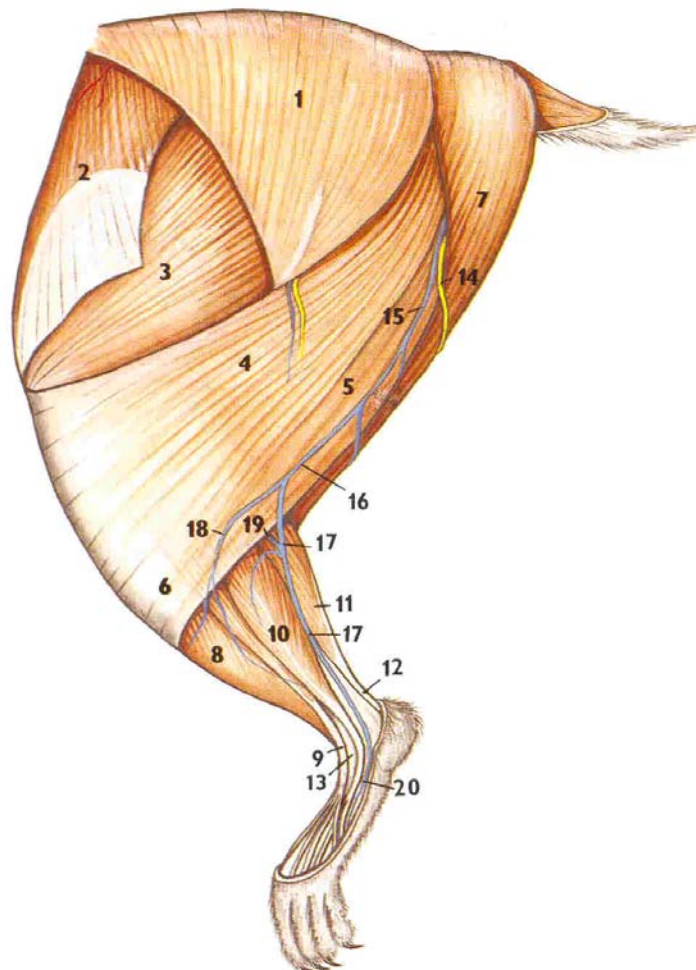


Mouse



Rat

- Locate the lateral saphenous vein (see number 17 below).



7. A thin film of a bland ointment such as Vaseline® or glycerin can be applied to prevent blood from seeping into the fur and allow for blood drop formation.



Mouse

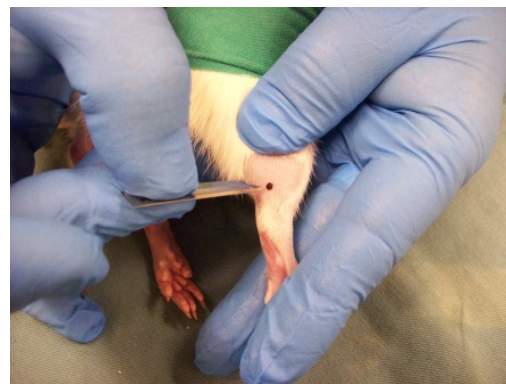


Rat

8. Using a 25-26 gauge needle or an animal lancet, puncture the vessel at a 90° angle at the most proximal (closest to the body) visible site.

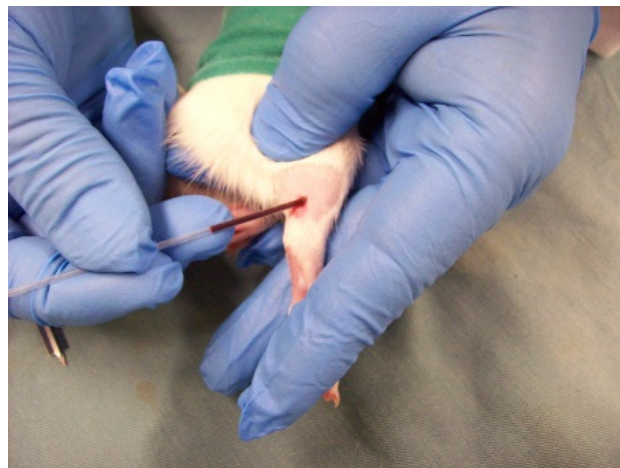


Mouse



Rat

9. Collect the sample into your collection tube ensuring you do not exceed the allotted 10% blood volume loss.



10. Use a dry piece of gauze to apply pressure to the puncture site while releasing pressure on the upper thigh until bleeding stops.
11. Remove the mouse or rat from the restrainer and place it back in its cage.
12. Monitor the animal for 5-10 minutes to ensure hemostasis (bleeding has stopped).
13. For repeat samples, the scab may be brushed off with a dry piece of gauze or a new puncture site can be made distal to the previous site (towards the foot).