

# Submental Blood Collection in Mice

## IACUC Standard Procedure

Effective Date: October 12, 2021

Submental blood collection (Chin Bleed) is an acceptable alternative to the submandibular method. This method allows for maximum allowable sample volume with minimal trauma to the animal. Submental collection may be easier to perform due to the direct visibility of the target vessels, which are located in a sparsely furred region. Multiple samples can be taken daily by alternating sides. This technique must be performed on anesthetized animals. Only trained personnel may perform this procedure.

This technique may yield a moderate sample volume (100-200µl) so will not be appropriate for frequent small blood volume collection. For information regarding maximum blood collection volume please refer to the [UCSF Blood Collection Guidelines](#).

### Supplies:

- Isoflurane anesthesia system
- 4-5 mm lancet or 25–27-gauge needles
- Gauze sponges
- Lubricant
- Blood collection tube

### Procedure:

1. Anesthetize the mouse with isoflurane in an induction chamber.
2. Flush out the isoflurane in the anesthesia chamber and then open chamber.
3. Remove the mouse from the induction chamber and restrain the mouse with the non-dominant hand by grasping the loose skin over the shoulders and behind the ears; the skin should be taut under the chin (submental region), but not so tight as to restrict breathing.
4. Apply sterile lubricant to the ventral chin to improve visibility of the vessels and **locate the puncture site** (the vessels should be visible approximately 0.5 cm rostral and lateral toward the lower jaw).
5. Prick the blood vessel (linguofacialis vein firmly using the sterile lancet or needle tip (1-2mm depth). Blood will flow immediately.
6. Collect sample with a pipette or other collection tube, until the target volume is reached.
7. Bleeding typically stops automatically when the mouse is released and the head position goes back to normal. Mild pressure can be applied with a sterile gauze sponge if needed.
8. The animal may be returned to their home cage once they have fully recovered from the anesthesia and ensure that all animals have stopped active bleeding before returning cage to the rack.

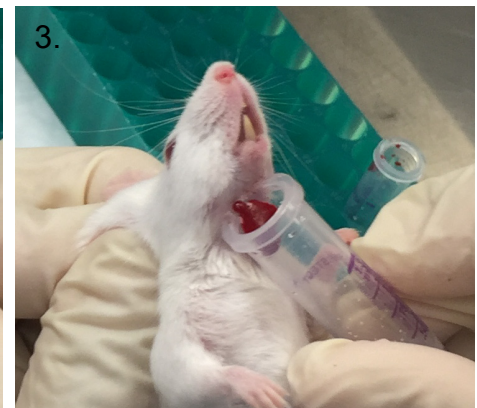
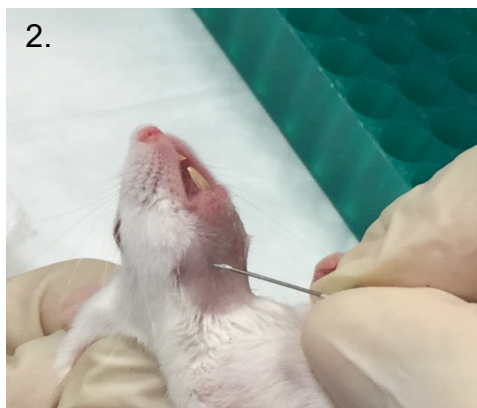
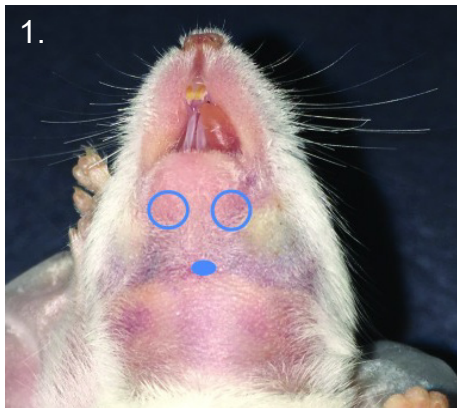


Image 1: Blue dot indicates location of fur whirl landmark. Open circles indicate target location.

[Regan et al. JAALAS, 2016, 55 \(5\): 570-576.](#)

Image 2 and 3: Demonstration of submental puncture and blood collection. Images courtesy of Jay Simmons.

**Agents:**

This procedure requires gas anesthesia. All agents administered to animals should be listed in the "Agents" section of RIO.

**Adverse effects:**

Hemorrhage from the oral or nasal cavity, hematoma formation

**References:**

Constantinescu, G.M and Dufee, N.M. (2017). Letter to the Editor: Comparison of Submental Blood Collection with the Retroorbital and Submandibular Methods in Mice (*Mus musculus*). JAALAS, Nov; 56(6):711-712. PMC: 5710148

Regan, R.D., Fenyk-Melody, J.E., Tran, S.M., Chen, G., Stocking, KL. (2016). Comparison of Submental Blood Collection with the Retroorbital and Submandibular Methods in Mice (*Mus musculus*). JAALAS, Sept; 55(5):570-576. PMC: C5029828