



Standard Operating Procedure: Intramuscular Injections in the Rabbit

These SOPs were developed by the Office of the University Veterinarian and reviewed by Virginia Tech IACUC to provide a reference and guidance to investigators during protocol preparation and IACUC reviewers during protocol review. They can be used as referenced descriptions for procedures on IACUC protocols.

However, it is the sole responsibility of the Principal Investigator to ensure that the referenced SOPs adequately cover and accurately represent procedures to be undertaken in any research project. Any modification to procedure as described in the SOP must be outlined in each IACUC protocol application (e.g. if the Principal Investigator plans to use a needle size that is not referenced in the SOP, simply state that alteration in the IACUC protocol itself).

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I. Procedure Summary and Goal

Describes procedure for the administration of substances via intramuscular (IM) injections.

Considerations:

- a. Easily performed without general anesthesia, but proper restraint required.
- b. Most common type of injection for antibiotics, sedation and anesthesia.
- c. Two primary locations:
 - i. Hind limb muscles – Gluteal/Quadriceps
 - ii. Perilumbar muscles
- d. Please refer to the Guidelines for Injections in Rodents and Rabbits, Virginia Tech Office of the University Veterinarian for recommended volumes and needles sizes.
- e. Injection volume amount – 0.5 to 1.0 ml per site

II. Personal Protective Equipment (PPE) and Hygiene

- a. Ensure appropriate PPE is used to protect technician from accidental exposure to blood and other body fluids, such as:
 - i. Gloves
 - ii. Eye protection
 - iii. Mask
 - iv. Other PPE as required by protocol/facility
- b. Hands should be washed and/or gloves changed between animals.
- c. Promptly dispose of used sharps in the provided leak-proof, puncture resistant sharps container.

III. Supply List

- a. Needles (23 - 25 gauge; 5/8 - 1 inch)
- b. Prefilled syringes
- c. Antiseptic
- d. Gauze

IV. Detailed Procedure

- a. Anesthesia
 - i. No anesthesia necessary.
- b. Procedure

- i. Restrain rabbit securely. Muscle injury may occur if animal moves or struggles during injection. For most IM injections, the animal can be placed on a secure flat surface in normal posture with hind legs under the animal.



Figure 1. Injecting into the Perillumbal Muscles



Figure 2. Hind Limb Approach

- ii. Isolate muscle mass to be injected.
 1. Perillumbal - Locate the last (floating) rib and count three to five vertebrae caudally (toward the rump); then measure two fingers width (about one to two inches) laterally on either side of spine (Figure 1).
 2. Hind limb – when injecting the hind limb muscle masses, you need to be careful to avoid hitting the sciatic nerve.
 - a. As a landmark, feel for the indentation between the bone and the muscle.
 1. Avoid this area as the nerve lays here.
 - b. Palpate and insert the needle in the muscle bundle in front of the femur (quadriceps) or behind the femur (gluteus) (Figure 2).
- iii. Swab area with antiseptic.
- iv. Insert needle at a 90° angle (perpendicular to the muscle bundle) into the center mass of the muscle.
- v. Aspirate to ensure you have not hit a blood vessel. If intravascular, reposition needle.

V. Variations

- a. Extend hind limb to isolate muscle bundle
- b. Front limb (triceps)

VI. References

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