Location: Queen's University

Responsibility: Principal Investigators, Research Staff, Veterinary Staff

Purpose: The purpose of this Standard Operating Procedure (SOP) is to describe the intradermal injection in mice.

1. Introduction and Definitions:

Abbreviations: Animal Care Services **ACS**, Principal Investigator **PI,** subcutaneous **SC**, intravenous **IV**, intraperitoneal **IP,** intramuscular **IM**, per os **PO,** per rectum **PR**

Recommended Needle Sizes and Volumes *Length of needle: 1/2 inch*	
	Intradermal ID
Recommended Gauge (maximum)	27 (26)
Good Practice Volume (Max per site)	0.05 ml

The injection methods described within an Animal Use Protocol (AUP) must be followed at all times. The following guidelines provide recommended injection sites, needle sizes and maximum dose volumes. "Good Practices" include:

- All animals securely and safely restrained prior to injecting.
- Only three attempts per site should be practiced. If unsuccessful, allow another (trained and competent) person to collect the sample.
- Use the appropriate gauge needle and volume for the injection site based on the size of the mouse.
- Before injecting any substance, aspirate first to ensure appropriate placement of the needle (excluding intravenous injections).
- Always inject with the bevel up on the needle.
- Always ensure the substances you are injecting are sterile, and use sterile technique.
- Every animal requires a new sterile syringe and a new sterile needle. With small volumes, it is preferable to dilute the injectable agent to a 50% or less solution to

ensure accurate dosing.

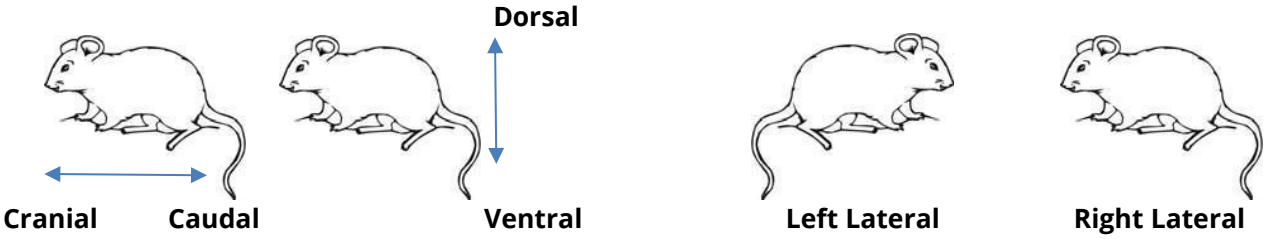
- Disinfecting the skin with alcohol is mandatory for intravenous, intraperitoneal, intramuscular, intradermal, and all biohazardous injections.
- Choose the appropriate administration route for the substance to be injected.

2. Materials:

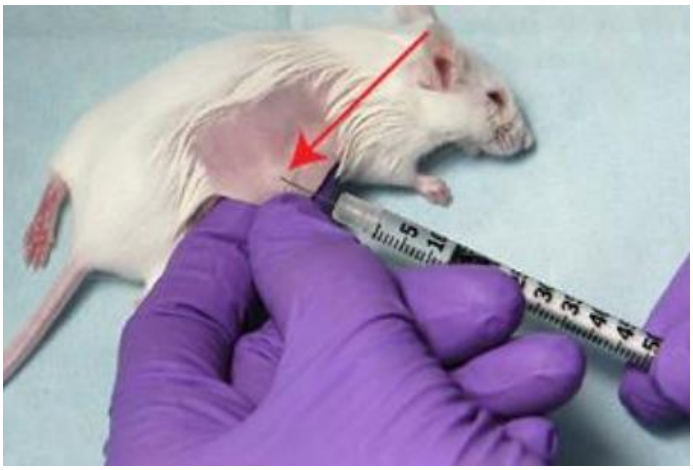
- Sterile syringes
- Sterile needles (26-27 gauge)
- 70% alcohol
- Clippers
- Injectable solution
- Anesthetics as required (if using anesthetics: eye lubricant, heating source, Isotonic fluids – see SOP 7.6 Anesthesia in Mice)

3. Procedures:

Anatomical Terms of Location



- Mice may need to be sedated.
- Every animal requires a new sterile syringe and a new sterile needle.
- Load the syringe and needle with appropriate volume to be injected.
- Safely restrain the animal on the table.
- The hair may need to be shaved to allow for better view.
- Disinfect the injection site with 70% alcohol.
- Pinch the skin upward or lay the syringe with bevel facing upward along the side of the animal's body.
- Insert the needle just burying the bevel. Pivot the needle gently to create small pocket.
- Inject slowly and look for a bleb to form within the skin layer (should feel a slight resistance).
- If the skin doesn't appear to rise immediately, the substance is going deeper than the intradermal layer. Stop the injection, remove needle and reposition.



Theodora.com/rodent_laboratory/injections.html

References:

SOP Revision History:

Date	New Version
4/25/2016	Triennial Review
3/28/2019	Triennial Review
12/12/2022	Triennial Review, split apart separate injection methods, updated format and reviewed/updated maximum injection volumes