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UNIVERSITY OF DELAWARE
OFFICE OF LABORATORY ANIMAL MEDICINE

Intraperitoneal (IP) Injection SOP #PRO-004

The aim of this technique is to administer material into the space surrounding the abdominal organs, avoiding injection directly into an organ.

Equipment required:

- Sterile needle and syringe
  - Mouse: usually 25-30 gauge needle
  - Rat: usually 25 -27 gauge needle

Technique:

1. Restrain the animal securely with ventral abdomen exposed and head pointed slightly downward. (This allows internal organs to move toward diaphragm, decreasing possibility of accidental organ puncture.)
2. Locate the point of entry in the caudal abdomen, just lateral to the umbilicus. The point may also be located by drawing an imaginary line just above knees. In a female animal this is just cranial to and slightly medial to the last nipple. Point of entry should be slightly off center.
3. Either side may be used but the right quadrant (of the animal) is preferred to avoid puncturing the cecum.
4. Insert needle, direct tip toward head, bevel up, at 15-30 degree angle, to depth of ~5mm.
5. Aspirate by pulling back on syringe plunger to make sure the needle has not penetrated the bladder or intestines. Yellow aspirate is indicative of urine. Greenish brown aspirate is indicative of intestinal contents. If any fluid is aspirated the needle should be removed and the needle and syringe discarded. (Never inject aspirate back into abdominal cavity as peritonitis will likely result.)
6. If no fluid is aspirated, then inject at a moderate rate.
7. Withdrawal needle.
8. Return animal to its cage.
9. Observe animal for bleeding or any signs of pain or distress.

Point of Entry www.bu.edu

Anatomical Guide www.bu.edu

Maximum Recommended Volume to be Injected (dependant on animal size)

- **Mouse:** 0.5-1 ml
- **Rat:** 2-5 ml

Note: Dilution of the injected drug with saline will decrease irritation and improve absorption.