



LABORATORY ANIMAL BIOMETHODOLOGY WORKSHOP

Hamster Intramuscular Injection (IM)

Substance:

- Verify that the pH of solution injected is of 7.3 to 7.45 and that solutions are isotonic (same tonicity as blood; 280–310 mosm/L).
- Warm the solutions to body temperature (or at least room temperature) immediately prior to administration, if possible.
- Verify the solubility of the substance. Precipitation may cause the formation of large particles which, if injected intramuscularly, can be painful.
- Inject separate substances at different sites to avoid cross reaction of chemicals.
- Avoid injecting highly viscous liquids as they can cause discomfort and require a larger needle size for injection.
- Substances to be injected must be sterile as contamination can lead to infection or irritation of the injection site. Sterilize solutions by autoclaving or microfiltration and use aseptic technique for injection.

Injection:

- Recommended injection site: Intramuscular injections in mice are performed in the quadriceps or posterior thigh muscles.
- Intramuscular administration should be limited to 2 sites per day.
- Injection sites should be rotated.
- Do not inject into inflamed or damaged tissue.
- Check proper placement of the needle prior to injection. Withdraw the syringe plunger; if blood enters the needle hub, the needle has entered a blood vessel. Withdraw the needle slightly and redirect it.
- No resistance should be encountered during injection. Do not apply excessive pressure on the syringe plunger. The injected substance should flow freely to prevent any unnecessary pain and tissue damage. Give injections at a constant flow rate.
- If bleeding occurs after injection, apply pressure with gauze until bleeding stops.

Needles:

- Always use sharp needles.
- Use the smallest gauge of needle possible that allows accurate injection of the substance.
- Needle size: 25G or smaller.

Volume:

- Use the smallest possible volume.
- Recommended volume: 0-0.05 ml/site

Procedure:

- Weigh the animal and calculate the volume for injection. Refer to your Animal Use Protocol.
- Hold animal in the palm of your non-dominant hand. Hamster can be restrained in a towel.
- Pull out one of the hind limbs and firmly grasp the fold of skin between your thumb and index fingers while extending the leg.
- Insert the tip of the needle perpendicular to the plane of the muscle and direct it away from the line of the bone to avoid trauma to nerves and blood vessels.
- Check proper placement of the needle prior to injection by withdrawing the syringe plunger and inject.



Reference:

McGill University SOP 404 – Substance Administration:
<http://www.mcgill.ca/research/researchers/compliance/animal/sop>.