

## Quick Reference Summary Sheet

### TECH 03b - Intravenous Tail Vein Injections in Adult Rats

#### Procedure:

1. Pre-warm sterile substance to be administered. Do not exceed 37°C.
2. Weigh animal. Calculate volume to administer
  - a. Bolus Injection (over 1-2 seconds) = 5ml/kg
  - b. Slow Bolus Injection (over 5-6 seconds) = 10ml/kg
3. Fill an appropriately sized syringe and needle. Maintain sterility. Ensure no air bubbles.
  - a. Rats: 1.0-3.0 ml syringe, 25-23 G needle
4. Safely warm animal. Do not leave unattended. Do not overheat.
5. Place animal in restrainer or anesthetize.
6. Identify lateral tail vein on side of tail (Figure 1; black arrows)
7. Occlude vessel at base of tail (optional). Apply gentle traction to tail to keep it straight
  - a. Swab tail with isopropyl alcohol-moistened gauze
  - b. Gently bend tail over ring finger (Figure 2)
8. Insert needle, parallel to vein, in middle third of tail (Figure 3)
  - a. Pull back on plunger to look for blood in needle hub (optional)
  - b. Release occlusion of vein (if doing)
9. Inject substance and look for the vein to become clear of blood.
  - a. If unsuccessful (blanched skin and bleb; figure 4), another attempt can be made closer to the rat or the other tail vein on the other side. Two attempts per tail vein may performed.
10. Leave needle in tail for 2-3 seconds so that the substance can be cleared from the vein.
11. Remove needle. Immediately apply pressure to the insertion site for ~10 seconds until bleeding has stopped.
12. Discard syringe and needle into sharps container. Do not recap.
13. Remove animal from restrainer or recover from anesthesia and examine again for any bleeding.
14. Return animal to its cage and observe for any complications.
15. Note procedure on cage card/monitoring records.

#### Potential Complications:

- Local reaction:
  - E.g. bleeding, bruising, burns, necrosis or swelling
- Systemic reaction:
  - E.g. overheating, shock, dyspnea, weight loss, hunched, piloerection, lethargy, isolated, pain

