

# Quick Reference Summary Sheet

## TECH 09b -Oral Gavage in Adult Rats

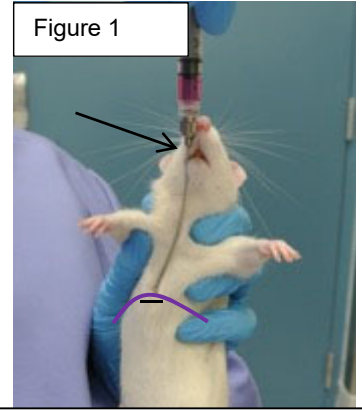
### Procedure:

1. Weigh animal. Calculate volume to be administered (maximum = 10 ml/kg).
2. Pre-measure length gavage tube required (Figure 1). Red rubber feeding tubes are preferred.
  - a. Measure from oral cavity (or tip of nose) to xiphoid process (or last rib).
3. Pre-fill syringe and gavage tube.
  - b. Tube size: 16 – 22G (18 G is most common); 3 – 8.5 cm length.
  - c. Wipe away any substance coating the outside of the tube for accurate dosing.
  - d. Ensure plunger is moving freely; eject any air in the needle.
  - e. If study permits, dip end in a sweet substance (sugared water) to facilitate procedure.
4. Restrain animal.
  - a. For metal or plastic needles restrain upright in a V-hold facing the handler (Figure 1).
    - i. Front legs controlled.
    - ii. Head and neck immobilized.
    - iii. Ensure breathing normally and nose and feet remain pink.
  - b. For red rubber feeding tubes, restrain by hand, or wrapped in a towel, so they are sitting on a stable surface while ensuring the front legs cannot grasp the rubber tube (Figure 2).
5. Insert gavage tube into the animal's left side of the mouth.
  - a. Insert in the gap between the front teeth and molars (diastema).
6. Advance needle/tube along roof of mouth, above tongue, to back of mouth.
7. With metal gavage tubes, gently tilt the head back towards the animal's spine so esophagus forms a straight vertical line to the stomach. Plastic tubes are flexible and do not require the head to be tilted back.
8. Advance gavage tube down esophagus the pre-determined distance – NEVER FORCE (Figures 3, 4 and 5).
  - a. STOP and remove gavage tube if there's resistance, respiratory distress, struggling.
  - b. If tube is not passing easily, gently tilt head back more, or slightly twist needle clockwise (metal tubes).
  - c. Confirm breathing normally before administering substance.
9. Inject a small test dose (0.05 cc) and monitor breathing for 1-2 seconds.
10. Slowly inject substance over 2-3 seconds for aqueous solutions or over 5-10 seconds for viscous substances.
  - a. Stop and remove gavage tube if any difficulties arise (respiratory distress, struggling).
11. Withdraw gavage tube slowly (over 1-2 seconds) once finished administration and return animal to its cage.
12. Monitor animal for at least 10 minutes to observe for potential complications.
  - a. Monitor again at the end of the day and again the next day.
  - b. Do not leave animal for the day unless satisfied is behaving normally.
13. Cleaning metal tubes and red rubber feeding tubes
  - a. Between animals, flush tube with water and wipe dry with gauze.
  - b. When finished, clean with soapy water, rinse well, allow to dry before storing.
  - c. Plastic tubes are single use only and should be discarded after each use.

### Potential Complications:

- a. Aspiration of substance into the lungs
- b. Perforation of the esophagus, trachea or lungs
- c. Chewing off a piece of plastic gavage needle
- d. Damage to the oral cavity
- e. Esophagitis (inflammation of the esophagus)
- f. Other traumatic injuries: torn nails, bulging eyes, respiratory distress

Figure 1



Black arrow: metal gavage tube showing distance to be inserted  
Purple curve: distal ribs  
Black line: xiphoid process

Figure 2: red rubber feeding tube



Figure 3: metal

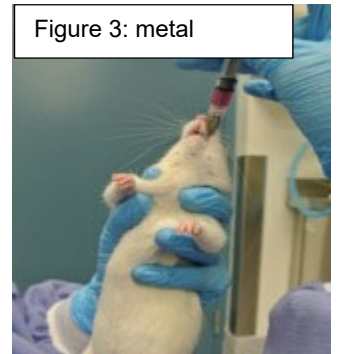


Figure 4: Plastic tube

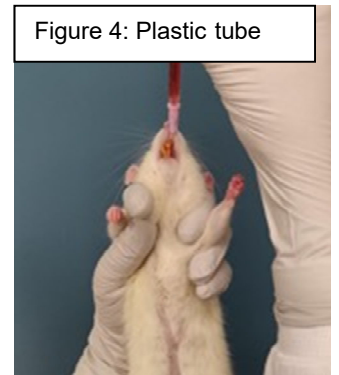


Figure 5: Red rubber feeding tube

