

## Mouse Oral Gavage Administration

Animals must be restrained properly for the oral gavage technique to be performed in a safe manner for both, the animal and the handler. Oral gavage (dosing) is used when a specific volume of an agent needs to be administered orally. Whenever possible, alternatives such as purchasing custom-made chow containing the experimental agent or dosing with a water bottle should be considered. Gavage may only be performed by properly trained personnel

### Necessary Supplies

- 22-24 gauge feeding tubes about 1.5 inches in length with a rounded tip (see pictures below). If gavage is performed on young mice a smaller tube is used. Gavage cannula length and size should be based on the size of rodent as the distance from the oral cavity and the stomach varies based on strain and weight.

- Optional: Scale and marker. Weighting the animal to predetermine the appropriate gavage cannula size is recommended. A marker can be used to mark the cannula at the nose end to avoid inserting the cannula too shallow or deep.

### Technique

1. Gently restraint the mouse with the non-dominant hand by grasping the loose skin over the shoulders and behind the ears; Check the length of the gavage tube by measuring from the tip of the animal's head to immediately below the last rib to ensure the cannula is of sufficient length to reach the stomach (**Image 1**)
2. Restrain again the animal. Scruff the mouse, grasping the skin over the shoulders with the thumb and middle so that the fore legs are extended out to the side, keeping the front feet from pushing the gavage tube away. (**Image 2**) While the mouse is in an upright position insert the gavage cannula into mouth and advance it to the back of the oral cavity till you feel resistance ensuring you are against the hard palate/back of the throat (**Image 2-3**).
3. Tilt the head backwards and while maintaining the cannula at the back of the throat gently allow the cannula to slide and advance into the esophagus (**Image 2-3**) The cannula should never be forced. It should advance with no resistance when it is in the esophagus. **If you experience resistance withdraw the gavage cannula and start again**, you are likely in the larynx and can cause serious damage and/or instillate the drug into the trachea/lungs.
4. The cannula should be advanced all the way to the predetermined length to ensure placement in the stomach and not the trachea or respiratory track (**Image 4**). Once fully in place as shown slowly dispense dose and then remove cannula gently

### Additional notes:

- In general, volumes to be administered via the PO route range from 5 mL/kg to 20 mL/kg. Using the smallest volume possible will ensure accurate dosing as it limits reflux.
- For adult mice 22G 1.5" long cannulas are generally appropriate but, 24G 1" are recommended if you plan to gavage younger (< 8 week-old) or smaller (<20 g) mice.
- The same gavage cannula, if metal, can generally be reused for all cages receiving the same compound but should be switched between experimental groups to prevent cross-contamination. Disposable cannulas with plastic ends may be damaged during this technique by rodents biting on the plastic end. Damaged plastic gavage cannulas should be replaced to avoid causing oral or esophageal damage on subsequent animals.
- Disposable gavage cannulas are recommended when administering chemical or biohazardous agents.



**Image 1-** Assessment of appropriate gavage cannula length.



**Image 2-** Initial cannula instertion through the corner of the mouth.



**Image 3-** Advancement of the cannula on upright position & against hard palate / back throat.



**Image 4-** Complete insertion, without resistance, to the predetermined depth.