

## *Drug Dilution & Storage Guidelines*

Most of the drugs used for small animals, such as mice and rats, need to be diluted for accurate dosing; however, this procedure is considered compounding. Compounding is defined as: *combining, mixing, or altering ingredients of a pharmaceutical grade drug to create a medication tailored to needs of an individual patient* according to FDA.

If you need to compound a drug for injection accuracy, aseptic techniques are to be followed. Compounding procedures should be performed in a Biosafety Cabinet. Drugs requiring dilution are to be mixed with appropriate diluent in a separate sterile container to reach required working concentration. The compounded drugs' container must be sterile, and opaque if compounding light sensitive drugs. Eppendorf tubes or screw cap test tubes do not provide a secure aseptic access barrier for extended storage and cannot be used for this purpose. Empty sterile containers with a rubber cap should be used as allows aseptic mixing and multi-access of your compounded drug solutions. The top of the container should be disinfected with 70% alcohol on clean gauze prior to accessing with needle and syringe. Post compounding, containers should be stored in a dark place when not in use.

The label on the container of the compounded drug must include:

- ✓ Name of the drug/compound with final concentration.
- ✓ Preparation date and initials of preparer.
- ✓ Expiration date as below
  - Buprenorphine may be kept up to 30 days if diluted with saline for injection (*not PBS*) and stored in sterile *glass* tubes or bottles with rubber access stoppers. Tube are to be secured in the dark between uses in your narcotic cabinets when not in use.
  - Carprofen may be kept up to 36 hours if diluted with saline for injection (*not PBS*) and refrigerated when not in use (*glass or plastic bottles may be used*).
  - Any other study drug / compound should be labeled with 30 days post-compounding date.

**NOTE:** If expiration date of drug being diluted is earlier than the recommended compounding expiration date (*noted above*), the earliest expiration date must be used.

### **Examples of Appropriate drug bottles / vials:**

- 1) 10 ml bottle with saline for injections, calculated volume of diluent needed, withdraw excess and add drug to be diluted. Rubber stopper comes 'with diluent'.



- 2) Empty sterile bottles for adding medications when need to dilute with other than Saline (e.g., DMSO).  
*NOTE: Opaque bottles should be used for light sensitive drugs!*



- 3) Sterile glass red top (*untreated, no clot activator or clot separation gel*) blood collection tubes with rubber stopper. Can inject diluent and drug through stopper then draw from as needed.



**Examples of inappropriate drug dilution/ storage vials:**



**Please contact a Veterinary Resources Veterinarian (410-706-3540) with any questions regarding appropriate procedures for drug dilution and storage.**