Policy on Labeling Expectations in Pharmaceutical Grade Compounds in Animals

Date Reviewed: 7/26/18

Background
Federal regulations require Investigators to use pharmaceutical-grade compounds for injection in animals.

It is recognized that many experimental compounds used in research may need to be diluted or combined for use in laboratory animal research.

The use of combinations of multiple drugs, or dilution of drugs can introduce unexpected or even toxic effects, and should be avoided whenever possible.

When compounding is necessary, this must be done using aseptic technique and the final product must be labeled and stored appropriately.

Definitions
1. **Pharmaceutical-grade compounds** are drugs, biologics, reagents, etc. which are approved by the FDA or for which a chemical purity standard has been written/established by the United States Pharmacopeia (USP)/National Formulary or British Pharmacopeia and are intended for injection.

2. **The United States Pharmacopeia National Formulary (USP-NF)** provides FDA-enforceable quality standards for drugs, dietary supplements, and excipients as well as procedures for tests, assays and analytical methods. *Parenteral articles* meet Pharmacopeia requirements for sterility, pyrogens, particulate matter, and other contaminants, and, where appropriate, contain inhibitors of the growth of microorganisms.

3. **Compounding** is a practice in which a person combines, mixes, or alters ingredients of a drug to create a medication tailored to the needs of an individual patient(s).

Requirements
All agents used in animals **must** be listed in the IACUC protocol.

If compounding of drugs to be injected in animals is necessary, investigators must ensure:

1. **Aseptic preparation** (compounding) of the drug to include sterile containers, filtration or autoclaving of compounded drug if original components are not sterile. Injectable drugs should never be used if they contain particulate matter, precipitates, turbidity, or discoloration.

2. **Appropriate storage** of the compounded drug to include the use of a secondary container and methods which maintain sterility yet allow repeat draws e.g. use of a sterile injection vial
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with a rubber stopper is highly encouraged. Alternatively, for single use purposes, a sterile microfuge tube can be used.

3. **Appropriate labeling** of containers for storage of compounded drugs to include:

- Name of the compound(s) and diluent (when applicable)
- Final concentration (usually mg/ml)
- Date of Compounding and assigned Expiration date
- The expiration date should be based on the earliest expiration date listed on the stock bottles of agents used
- For controlled substances, read further tracking and label instructions below.

**Note:** The length of time a compounded drug can be used should be based on use frequency and performance. Compounded drugs may result in decreased “shelf-life” compared to the stock drug(s). Furthermore, the potential for bacterial contamination is increased when compounding drugs or when drawing from multi-use vials.

**Note for controlled substances:** The tracking sheet for the controlled substance tank vial must be updated to indicate the creation of a secondary container and its contents must be tracked on the secondary container sheet. The label on the secondary container itself must identify the exact multi-use vial from which the controlled substance was drawn to create the dilution.

**Note:** It is highly recommended when using compounded drugs that a lab-specific SOP be created to establish proper preparation procedure and expiration for the compounded drug.

**References**

1. USDA APHIS Animal Care, Policy 3, March 14, 2014.