

Colorado State University

Institutional Animal Care and Use Committee

Policy on Compounding Pharmaceuticals

Purpose

It is the responsibility of the Colorado State University (CSU) Institutional Animal Care and Use Committee (IACUC) to ensure judicious and humane use of animals used in its research, testing and teaching programs that is consistent with federal requirements and CSU's highest ethical standards.

Definitions

The *Guide for the Care and Use of Laboratory Animals* (8th ed., 2011 p. 31.) states "*The use of pharmaceutical grade-chemicals and other substances ensures that toxic or unwanted side effects are not introduced into studies conducted on experimental animals. They should therefore be used, when available, for all animal-related procedures.*" A pharmaceutical grade compound is a drug, biologic or reagent that is approved by the Food and Drug Administration, or for which a chemical purity standard has been established by the United States Pharmacopeia-National Formulary (USP-NF), or British Pharmacopeia (BP).

Policy

Procedures that may cause more than momentary or slight pain or distress to animals must be relieved by sedation, analgesia, or anesthesia using veterinary or human pharmaceutical-grade compounds, unless the use of an investigational chemical or formulation is scientifically necessary, appropriately justified, and approved by the IACUC. The use of a non-pharmaceutical-grade euthanasia agent must meet the same criteria.

Many of the pharmaceuticals used in laboratory animals, particularly rodents are diluted or mixed with other pharmaceuticals. Any alteration of the delivered states of a pharmaceutical is considered compounding and therefore, does not meet the definition of a pharmaceutical grade compound. Consult LAR veterinarians for assistance with specific questions.

It is appropriate for investigators to mix and dilute pharmaceutical compounds that are compatible in order to achieve an appropriate mixture and or volume for injection, particularly for anesthesia or euthanasia. In general, drugs used for anesthesia or analgesia may be mixed in the same syringe immediately prior to use. Similarly, euthanasia solutions can be diluted immediately prior to use. In neither case should they be stored diluted or mixed as efficacy may become a concern.

Compounds that are reconstituted per manufacturer's instructions can be stored according to their label.

Examples of compounding include, but are not limited to:

- Mixing ketamine/xylazine and/or acepromazine in a single syringe for anesthesia
- Diluting buprenorphine for analgesia
- Diluting euthanasia solution for euthanasia in smaller animal

Federal Regulations

- Animal Welfare Act Regulations (AWAR) §2.33
- The Guide for the Care and Use of Laboratory Animals (2011), p. 31
- Public Health Service (PHS) Policy (II; IV(A)(1))

Institutional Endorsement

As the Institutional Official for Colorado State University, I recognize and endorse the authority and enforcement of the *"Policy on Compounding Pharmaceuticals"* by the IACUC.



01/14/2026

Cassandra Moseley, Ph.D.

Date

Vice President for Research, Institutional Official

Professor, Department of Forest and Rangeland Stewardship