NU–IACUC POLICY

Northeastern University Institutional Animal Care and Use Committee

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| Policy on the Use of Non-Pharmaceutical Grade (NPG) Substances and Expired Materials |

*Re-Approved: 03/21/2022*

**Use of Non-Pharmaceutical Grade (NPG) Substances**

The *Guide for the Care and Use of Laboratory Animals (The Guide)*, states “The use of pharmaceutical-grade chemicals and other substances ensures that toxic and unwanted side effects are not introduced into studies conducted with experimental animals. They should therefore be used, when available, for all animal-related procedures (USDA 1997b). The use of non-pharmaceutical grade chemicals or substances should be described and justified in the animal use protocol and be approved by the IACUC (Wolff et al. 2003). In such instances, consideration should be given to the grade, purity, sterility, pH, pyrogenicity, osmolarity, stability, site and route of administration, formulation, compatibility, and pharmacokinetics of the chemical or substance to be administered, as well as animal welfare and scientific issues relating to its use (NIH 2008).”

OLAW and USDA define pharmaceutical grade substance as any active or inactive drug, biologic, reagent, etc. approved by the Food and Drug Administration (FDA), or for which a chemical purity standard has been established by the United States Pharmacopeia-National Formulary (USP-NF) or British Pharmacopeia (BP). The following links can be used to search for pharmaceutical grade substances:

* Human Drugs FDA: <http://www.accessdata.fda.gov/scripts/cder/daf/>
* Animal Drugs FDA: <https://animaldrugsatfda.fda.gov/adafda/views/#/search>
* US Pharmacopeia-National Formulary (USP-NF): <http://www.usp.org/usp-nf> \*
* British Pharmacopeia: <https://www.pharmacopoeia.com/> \*

*\* USP-NF & BP both require paid subscriptions.*

**Policy**

Investigators must use pharmaceutical-grade substances whenever they are available, unless justification to use NPG substances is approved by the IACUC. Please note, justification to use NPG substances in *terminal* procedures is *only* required for USDA regulated species. Cost savings alone is not an adequate justification.

Acceptable justifications for the use of NPG substances

1. The substance is unavailable or is not consistently available, in a pharmaceutical-grade veterinary or human formulation. Examples include, but are not limited to:
* Euthasol or Fatal Plus
* Eugenol (clove oil), mineral oil, corn oil
* Investigational materials not approved for medical or veterinary use
1. Although a pharmaceutical grade drug is available, the NPG drug is required to replicate methods from previous studies.
2. Although a pharmaceutical grade drug is available, a greater concentration, different formulation, or route of administration is required.
3. The available pharmaceutical grade drug contains preservatives or inactive ingredients which confound the research goals of the study.

When NPG substances are necessary, the highest grade/purity available that meets the requirements of the study will be used and final product will be formulated to maintain sterility, stability, physiological compatibility, etc. Vials should be labeled with the name, date mixed, and earliest expiration date of the component drugs or diluents used (when known).

Requirements for reconstituting NPG substances for parenteral use in survival studies:

1. The final product must undergo sterilization (e.g. 0.22 μm filter, autoclaving, or gamma irradiation) prior to injection, unless justification is provided and approved by the IACUC.
2. Compounds must be reconstituted using aseptic technique and final product administered using sterile supplies (e.g. needles/syringes).
3. Water and/or any diluent used for reconstitution must be sterile/pharmaceutical grade.

**Use Of Expired Medical Materials In Research**

The United States Department of Agriculture (USDA) Animal Care Policy #3 specifically states, “The use of expired medical materials such as drugs, fluids, or sutures on regulated animals is not considered to be acceptable veterinary practice and does not constitute adequate veterinary care, as required by the regulations promulgated under the Animal Welfare Act.” The Office for Laboratory Animal Welfare (OLAW) provides similar requirements, stating, “The use of expired pharmaceuticals, biologics, and supplies is not consistent with acceptable veterinary practice or adequate veterinary care. Euthanasia, anesthesia and analgesia agents should not be used beyond their expiration date, even if a procedure is terminal. Other expired materials should not be used unless the manufacturer verifies efficacy beyond the expiration date, or the investigator is able to document to the satisfaction of the IACUC that such use would not negatively impact animal welfare or compromise the validity of the study. The veterinarian and IACUC must maintain control over the use of expired medical materials in order to meet their responsibilities to avoid or minimize discomfort, pain or distress to animals.”

**Policy**

The use of expired anesthetics, analgesics, tranquilizers, emergency drugs, or euthanasia agents is NOT allowed. The use of other expired medical materials, (i.e., sutures, saline) are permissible for terminal studies IF their use does not adversely affect the animal’s well-being or compromise the validity of the scientific study. Such materials must be labeled appropriately (i.e., “For Acute Use Only”) and segregated from other medical materials.