UNT DIVISION OF RESEARCH & INNOVATION Research Integrity & Compliance	**Institutional Animal Care and Use Committee** **Standard Operating Procedures**

Title: Use of Hazardous Materials in Animal Research

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Approval/Date:

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REVISION HISTORY

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PURPOSE

Hazardous materials are biological, chemical, radiological or physical items which have the potential to cause harm to humans, animals, or the environment. These materials are either hazardous on their own or they have the potential to be hazardous through interaction with other factors. The use and disposal of hazardous materials is regulated by several agencies, including: the CDC, NIH, OSHA, TCEQ and the Department of Health and Human Services. These regulations must be followed by all personnel who may have contact with hazardous materials and should registered and approved (when applicaple) by UNT Risk Management Services (RMS). Principal Investigators must discuss any radioactive or biohazardous materials with the relevant safety committees within RMS before submitting an animal use protocol.

SCOPE

It is the responsibility of the Principal Investigator to register with and receive approval from the UNT Institutional Biosafety Committee (IBC), UNT Radiation and Laser Safety, and/or other safety personnel prior to using hazardous materials in their lab.
It is the responsibility of the Principal Investigator to receive approval to use hazardous materials in animals through and UNT IACUC approved protocol.
It is the responsibility of the Principal Investigator to ensure the appropriate and safe use of hazardous materials and documented training for use by all lab personnel.

DEFINITIONS AND ABBREVIATIONS

UNT- University of North Texas, Denton
IACUC- Institutional Animal Care and Use Committee
SOP/SOP's- Standard Operating Procedure(s)

AUP- Animal Use Protocol
PI- Principal Investigator
AV- Attending Veterinarian
RMS- UNT Risk Management Services
IBC- Institutional Biosafety Committee
CDC- Centers for Disease Control and Prevention
NIH- National Institutes for Health
OSHA- Occupational Safety and Health Administration
TCEQ- Texas Commision for Environmental Quality

PROCEDURES

I. Hazardous Materials are biological, chemical, radiological or physical items which have the potential to cause harm to humans, animals, or the environment.

A. Appropriate signeage should be placed on all doors and locations where Hazardous Materials are stored, used, and disposed of and should include:
1. The Hazardous Materials Present
2. PPE Requirements
3. The PI
4. Associated Protocol Numbers
5. Appropriate Emergency Contact Numbers

B. Biological (Biohazards)
1. Biological Hazards or Biohazards often used in animal labs include:
   a) Microbial pathogens
   b) Parasites
   c) Recombinant DNA
   d) Cell cultures containing potentially infectious agents (ie. viroids, prions)
   e) Any infectious agents as outlined by the UNT IBC.
2. Consultation with the Biosafety Officer in Risk Management Services (RMS) should be made in preparation of the IACUC protocol when using a potentially biohazardous agent. Any permits and/or registrations requested should be completed and noted in the IACUC AUP submission.
   a) Biohazardous agents must be approved on an IBC protocol before approval can be granted on an IACUC protocol proposing to use biohazardous agents
3. Consultation with the UNT Lab Animal Facility Manager should also be conducted for any project that will be conducted there using biohazardous materials.
   a) Prior to study initiation documentation will need to be provided to the LAF Manager to be maintained in the LAF Safety Manual. These documents should include:
      i. A copy of the approve IACUC Protocol and any subsequent amendments
      ii. Safety Data Sheets
      iii. Copies of personnel training documents
      iv. Copies of permits/registrations and any details from the Safety Commitees and Biosafety consults
4. Any requirements from correspondence with the Biosafety Officer and the LAF Manager regarding the biohazard (treatment of animals, cages, etc.) should be described in the Animal Use Protocol in the hazards section.

C. Chemical
1. A chemical hazard is any chemical that has the potential to cause harm to people, animals, or the environment. These can include:
   a) Flammable liquids or solids

b) Corrosives oxidizers
c) Toxins
d) Carcinogens
e) Flammables
f) Corrosives
g) Mutagens
h) Reproductive hazards and sensitizers

2. It is the responsibility of the investigators to monitor the use and disposal of chemical hazards in the laboratory.
3. Consultation with the Risk Management Services must occur when considering the use of chemical hazards in an IACUC protocol.
4. Use of the hazardous chemicals in animals must be approved by the IACUC before they can be used. The IACUC may require justification as to why a safer compound cannot be used.
5. Consultation with the UNT LAF Manager must be conducted to discuss the use of hazardous chemicals in the animal facility.
   a) Prior to study initiation, the LAF manager should be provided with the following documents for inclusion in the LAF Safety Manual:
      i. Copy of the Approved IACUC AUP and subsequent amendments
      ii. SDS sheets for any hazardous chemical being used
      iii. Copies of personnel training documents for specified hazards
      iv. Copies of mitigation and disposal recomendations details from Risk Management Services
6. Any correspondence with the IBC, RMS, and the LAF Manager regarding the hazardous chemical (treatment of animals, cages, etc.) must be written in the AUP in the hazards section.

D. Radiological Hazards and Lasers

1. Radioactive material is any substance that emits radiation.
2. LASER is an acronym for Light Amplification by Stimulated Emission of Radiation.
3. Exposure to radiation could pose serious health risks to personnel and to the community if improperlyused or disposed. Radioisotopes, the unstable atoms or isotopes that emit the radiation, are commonly used in research.
4. Risk Management Services requires the registration of all radiation producing devices and annual radioactive safety training which covers response to radioactive contamination or misuse issues, radioactive waste removal, and laser safety.
5. Consultation with the Radiation Safety Officer should occur when considering the use of radioisotopes, radiation producing devices, and/or lasers in an any lab.
6. Radioisotopes must be approved by the Radiation Safety Committee (RSC) before approval can be granted to the IACUC protocol. Class IIIB and Class IV lasers must be registered with the Radiation Safety Office prior to acquisition.
7. IACUC must approve the use of the radiological hazards or lasers with animals before they can be used.
8. Consultation with the UNT LAF Manager must be conducted to discuss the use of a radioactive substance in the animal facility prior to IACUC AUP submission.
   a) Prior to study initiation documentation will need to be provided to the LAF Manager to be maintained in the LAF Safety Manual. These documents should include:
      i. A copy of the approved IACUC protocol and any subsequent amendments
      ii. Copies of all registrations and permits required by the RMS safety committees and/ or Radiation Safety Officer.

iii. Copies of personnel trainings including annual radiation safety trainings

9. Any requirements from correspondence with the Radiation Safety Officer and the LAF Manager regarding the radiological hazards (treatment of animals, cages, etc.) and safety mitigations should be described in the Animal Use Protocol in the hazards section.

E. Physical Hazards

1. Physical Hazards may include materials, devices, or procedures that produce a risk to animals, individuals, or the environment and include, but are not limited to:
   a) Electrical equipment
   b) Compressed gasses
   c) Equipment emitting loud sounds and/or vibrations
   d) Heavy equipment
   e) Sharps (needles, glass, etc.)
   f) Magnetic Fields
   g) Heating equipment
2. Precautions should be taken to mitigate injuries of animals and staff.
3. Appropriate storage and use procedures should be maintained for any items deemed a physical hazard.
4. Personnel should be appropriately trained to the physical hazards in each lab, this training should be documented annualy.
5. Investigators should consult with RMS personnel on the appropriate use, procedures, and PPE that should be used for hazards in their labs.
   a) Risk Assessment Forms for Animal Laboratories have been provide by UNT RMS and can be found with the IACUC SOPs and Forms online.
6. Investigators should consult with LAF Management about the use of physically hazardous materials in the LAF prior to submitting an AUP for IACUC approval.
7. Physical hazards and PPE requirements should be listed in the AUP for IACUC approval in the hazards section. Risk Assessment Forms may also be attached to the submission to document this requirement.

II. Disposal

A. Disposal of hazardous waste should be in accordance with all regulations and requirements of the safety committees.

B. Disposal should only be performed by appropriately trained personnel.

C. Contact RMS for specific information on disposal at UNT.

D. Hazardous waste requiring special disposal in the LAF should be arranged with the LAF Manager in advance.

E. For animal carcass disposal requirements see UNT IACUC Procedure 02.24 Biohazardous Waste and Carcass Disposal.

REFERENCES

1. The Guide for the Care and Use of Laboratory Animals.
2. Animal Welfare Act
3. UNT IACUC Procedure 02.04 Biohazardous Waste and Carcass Disposal
4. NIH and CDC Guidelines- Biosafety in Microbiological and Biomedical Laboratories 6th Edition

APPENDICES

IACUC Standard Operating Procedures