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UC Davis
Institutional Animal Care and Use Committee (IACUC)

Title: Protocols Involving Hazardous Materials and Standard of Care Medications

I. Purpose:

This document describes the policies, roles, and responsibilities associated with the use of hazardous materials in vivaria at UC Davis to mitigate the potential for illness and injury. Hazardous materials covered by this policy include hazardous chemicals, recombinant/biohazardous materials, radioactive materials, and Standard of Care medications.

While other IACUC policies address animal welfare, this policy is intended to outline the requirements to ensure the health and safety of researchers and animal care staff who have contact with animals that have been administered hazardous materials including hazardous chemicals/drugs, recombinant/biohazardous materials, radioactive materials, and/or Standard of Care medications.

This policy is specific to hazardous materials and Standard of Care medications used in animal care spaces. Researchers, Animal Care Staff, and Facility Managers who use or come into contact with hazardous materials and/or Standard of Care medications in animal care spaces must adhere to this policy. For additional information and definitions, please visit the "Hazardous Materials in Animal Care Spaces" website.

II. Policy:

Hazardous materials and Standard of Care medications in animal care spaces must be used in a manner that will not adversely affect:

1. The health and safety of all faculty/academics, staff, students, employees, volunteers, visitors, and ancillary personnel.
2. Wild and domestic animals maintained on UC Davis properties or in surrounding areas.
3. The environment.

III. Roles and Responsibilities:

A. Principal Investigator (PI)/Research Personnel

1. PIs and research personnel must fulfill the responsibilities described in PPMs 290-27, 290-55, 290-56, and 290-75.
2. All researchers utilizing animal care spaces at UC Davis must be included on the PIs laboratory roster maintained in the online Safety Suite and complete UC Laboratory Safety Fundamentals course (initial) or UC Laboratory Safety Refresher (every 3 years after initial).

3. Researchers using hazardous materials and/or Standard of Care medications are also responsible for following campus policies regarding use of these materials in their laboratories. Researchers must consult with their respective Department Safety Coordinator (DSC) and/or Environmental Health & Safety (EH&S) personnel to ensure applicable policies are followed.

4. **All** materials administered to animals as part of a research protocol or teaching exercise, including materials believed to be non-hazardous and Standard of Care medications, must be listed in the approved Animal Care and Use Protocol in Sections 14a and 14b. Animal care spaces and support areas in the vivarium are considered an extension of the laboratory space and all safety measures for labelling, use, and transport apply.

5. List all **hazardous** materials which will be used in Section 8, as well as 14a and 14b of the Animal Care and Use Protocol. Clearly identify the type of hazardous material(s) being used, where they are being used (lab, vivarium, or both), and if the material poses a potential risk to individuals or other animals in the vivarium.

   Note:

   a. If a Standard of Care medication is being used experimentally (rather than clinically) or being administered via a non-standard method (e.g., water-bottle) and has known hazards, it must be included in Section 8 and it may require a Vivarium Hazard Safety Sheet (VHSS).

6. Comply with any special handling indicated for the materials covered in the approved protocol.

7. Provide training to laboratory members regarding specific animal handling techniques or processes related to the approved protocol. This must include appropriate containment practices, spill clean-up, and waste disposal requirements. Consult with the Facility Manager, Scientist-in-Charge, and/or Technician-in-Charge for vivarium-specific practices.

8. The PI or designee must provide hazard communication to the Facility Manager/ Technician-in-Charge prior to using a hazardous material or Standard of Care

medication. Indicate each time animals are dosed (hazardous materials) using the methods outlined by the specific Facility (e.g., door sign, hazard card) including date, material, dose, route, and clearance date, if applicable (examples of hazard cards can be found below).

9. If a material is determined to be an environmental hazard but does not pose a health risk to animal care staff, or if a material has specific disposal requirements, a VHSS may be created to ensure proper handling. The PI is responsible for indicating when animals are dosed using the notification method outlined by the Facility.

10. **Legibly** label cage cards/cages with appropriate hazard symbols (as applicable according to the VHSS) and/or the facility defined method. The hazard written on the card should match the name of the hazard listed in section 8, with no chemical formula, abbreviations, or shorthand.

11. The PI/researcher is responsible for the proper handling and disposal of any materials indicated in the protocol and/or VHSS, such as contaminated water or food.

12. Hazardous materials for animal use must be prepared in the laboratory. Only transport the necessary amount to the vivarium for immediate use (see SafetyNet #150 for more information on how to transport hazardous materials safely). **Prior written approval from the Facility Manager/Technician-in-Charge must be obtained to prepare or store any hazardous materials in the vivarium.**

13. Hazardous materials must only be administered in approved locations within the vivarium. Review the VHSS and/or consult with the Facility Manager/Technician-in-Charge to determine these locations.

14. Hazardous materials and Standard of Care medications cannot be stored in the vivarium without prior authorization from the Facility Manager/Technician-in-Charge. Once approved, storage must be consistent with SafetyNet #42 General Guidelines for Storage and Management of Laboratory Chemicals and the Chemical Hygiene Plan. Storage of any hazardous chemicals or Standard of Care medications in the vivarium must be included in the online chemical inventory of the PI.

15. Ensure the safe use of hazardous materials and Standard of Care medications, including appropriate disposal of research materials, and cleanup of any chemical or biohazardous or biological spills.

16. Alert the Facility Manager/Technician-in-Charge of any vivarium-owned PPE that has become contaminated. Provide information on special handling or disposal of the contaminated PPE.

B. IACUC Staff

1. Review the Animal Care and Use Protocol/Amendment to determine, to the best of their abilities, if any hazardous materials are included. If a compound is not on the Standard of Care Medication list with the proposed method of administration, the protocol/amendment reverts back to EH&S for review.

2. Distribute the protocol/amendment to the appropriate EH&S unit for review.

3. Ensure any VHSS provided by EH&S is attached to the Animal Care and Use Protocol/amendment and ensure the hazardous material is included in appropriate sections at minimum sections 8 and 14b.

4. Following amendment approval, notify the PI and the appropriate Facility Manager/Technician-in-Charge that the protocol has been updated to include a new hazardous material and provide a copy of the VHSS as needed. Include any additional instructions provided by EH&S regarding the hazardous material included in the approved protocol.

5. Add updated Recombinant/Biohazardous or Radioactive material specific VHSS to the IACUC VHSS library.

6. The IACUC will not approve the Animal Care and Use Protocol until all relevant use authorizations are in place and/or EH&S has signed off on the VHSS.

C. Environmental Health and Safety

1. Review Animal Care and Use Protocols that are assigned by the IACUC Office in a timely manner.

2. Ensure hazardous materials are appropriately identified.

3. Ensure all necessary authorizations are in place, including but not limited to BUA, RUA, and any other required documents. These authorizations must be in place and/or EH&S has signed off prior to the IACUC approving the protocol or associated amendment(s)

4. Prepare a VHSS for any hazardous materials as needed.
    a. Recombinant/biohazardous material and/or Radioactive material: EH&S will review applicable VHSS attached to the protocol. If needed, a copy of the VHSS will be sent to the IACUC to be attached to the protocol and added to the IACUC VHSS library.

b. Hazardous Chemicals: EH&S will review applicable VHSS attached to the protocol. EH&S will attach any required hazardous chemical VHSS to the Animal Care and Use Protocol/amendment.

5. In conjunction with Campus Veterinary Services, evaluate and maintain a list of Standard of Care medications and identify hazards. Review this list annually; EH&S will inform Facility Managers/Technicians-in-Charge of any changes.

6. EH&S will maintain copies of every VHSS.

D. Facility Managers/Technicians-in-Charge

1. Establish a method for PIs/researchers to alert vivarium staff that a hazardous material or Standard of Care medication is present (e.g., hazard cards, door signs). Provide training to the PI and research personnel regarding vivarium hazard notification and ensure compliance with the established Facility-defined method.

2. Notify PIs/researchers of approved areas for animal dosing, waste disposal, hazardous and material storage (if applicable), and protocols for handling soiled vivarium-owned PPE.

3. Implement the Hazard Communication Program as part of the Injury and Illness Prevention Program (IIPP), including training on how to access and interpret Safety Data Sheets and responsibilities to fulfill the training described in PPM 290-27, including spill response.

4. Ensure that the necessary hazard communication signage is in place, animal care staff are notified and trained on hazardous material handling, PPE is available, and any special husbandry requirements for studies involving hazardous materials (e.g., bedding disposal) are in place.

5. Ensure facility staff are aware they have access to the table in section 14b which lists **all** materials administered in the Animal Care and Use Protocol. These include Standard of Care medications and non-hazardous materials.

6. Ensure staff have access to the table in section 8, which lists all hazardous materials, as well as materials with specific handling requirements.

7. Ensure access to, and training on, the Standard of Care medications list.

8. Train staff on how to read a VHSS and Safety Data Sheet (SDS).

E. Animal Care Staff, Research Staff, Student Interns, and Support Personnel

1. Follow the VHSS, Animal Care and Use Protocol, and all other safety procedures while handling an animal dosed with a hazard, soiled PPE, or by-products.

2. Wear required PPE at all times and change when contaminated or soiled.

3. Know the process for reviewing and researching substances in Section 14 of the Animal Care and Use Protocol that may not be included in Section 8. Know where to find hazard information, including any relevant SDS.

4. Alert the Supervisor, Facility Manager, or Technician-in-Charge if staff have not received training on a substance, if appropriate signage (door or cage card) is not present, if a substance is not being administered in the manner outlined, or if there is a breach in containment of a hazard.

5. Respond when there is a chemical spill or wrongful, unsafe disposal of possible hazardous material using the methods outlined in the initial training document.

6. Alert any personnel who enter a space where hazards are present to don proper PPE.

IV. Hazard Card Examples

1. Biohazard
2. Chemical Hazard
3. Radiation Hazard
4. Toxic Hazard
5. Biohazard and Chemical Hazard
6. Biohazard, Toxic, and Chemical Hazard Combination

V. Resources:

1. Hazardous Materials in Animal Care Spaces
   https://safetyservices.ucdavis.edu/units/ehs/research/laboratory/haz-material
2. Guide for the Care and Use of Laboratory Animals
   https://nap.nationalacademies.org/catalog/12910/guide-for-the-care-and-use-of-laboratory-animals-eighth
3. Occupational Health and Safety in the Care and Use of Research Animals
   https://www.nap.edu/catalog/4988/occupational-health-and-safety-in-the-care-and-use-of-research-animals
4. UC Davis Chemical and Laboratory Safety Manual
   https://safetyservices.ucdavis.edu/units/ehs/research/chemical/safety-manual
5. UC Davis Hazard Communication Program
   https://safetyservices.ucdavis.edu/units/ehs/research/chemical/hazard-communication
6. UC Davis Biological Safety Office

https://safetyservices.ucdavis.edu/units/ehs/biological-safety

7. UC Davis Radiation Safety Office
   https://safetyservices.ucdavis.edu/units/ehs/research/radiological
8. UC Davis *Hazardous Waste Storage and Labeling*
   https://safetyservices.ucdavis.edu/units/ehs/hazardous-materials-management/hazardous-waste-storage-labeling
9. UC Davis SafetyNet #8 *Chemical Waste Disposal Guidelines*
   https://safetyservices.ucdavis.edu/safetynet/chemical-waste-disposal-guidelines
10. UC Davis SafetyNet #13 *Guidelines for Chemical Spill Control*
    https://safetyservices.ucdavis.edu/safetynet/guidelines-for-chemical-spill
11. UC Davis SafetyNet #42 *General Guidelines for Storage and Management of Laboratory Chemicals*
    https://safetyservices.ucdavis.edu/safetynet/general-guidelines-for-storage-and-management-of-laboratory-chemicals
12. UC Davis SafetyNet #127 *Biological and Biohazardous Spill Response*
    https://safetyservices.ucdavis.edu/safetynet/biological-and-biohazardous-spill-response
13. UC Davis SafetyNet #150 *Transporting Hazardous Materials through Public Spaces*
    https://safetyservices.ucdavis.edu/safetynet/transporting-hazardous-materials-through-public-spaces
14. UC Davis Standard Operating Procedure Templates
    https://safetyservices.ucdavis.edu/units/ehs/research/chemical/sop-templates
15. Safety Data Sheet Resources
    https://safetyservices.ucdavis.edu/units/ehs/research/safety-data-sheets
16. Guide to Research Compliance
    https://research.ucdavis.edu/wp-content/uploads/UCDavis_Guide_to_Research_Compliance_-20132.pdf
17. Biosafety in Microbiological and Biomedical Laboratories (BMBL)
18. Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
    https://unece.org/ghs-rev2-2007
19. 8 CCR §5194
    https://www.dir.ca.gov/title8/5194.html
20. The Association for Biosafety and Biosecurity “Viral Vector Lexicon”
    https://absa.org/wp-content/uploads/2021/10/ABSA-Viral_vector_lexicon.pdf
21. US Department of Health and Human Services “Science Safety Security-Biosafety Risk Groups” https://aspr.hhs.gov/S3/Pages/Risk-Groups.aspx
    https://www.phe.gov/s3/BioriskManagement/biosafety/Pages/Risk-Groups.aspx
22. UC Davis Policy and Procedure Manual Chapter 290 Sections 27,55 ,56, 75
    https://ucdavispolicy.ellucid.com/manuals/binder/57
23. Cal OSHA
    https://www.dir.ca.gov/dosh/