

Hazard Containment Protocol for acute toxins, pesticides, RCRA chemicals and newly developed drugs - Rodents

This protocol has been developed by the Office of Animal Resources (OAR) and Environmental Health & Safety (EHS) for the use of [acute toxins](#) (current listing provided in the link), pesticides, RCRA chemicals, and newly developed drugs in animals.

Please consult with EHS on appropriate containment measurements for the above chemicals. Information included in this form must adhere to the agreement between the PI and the EHS Chemical Hygiene Officer.

Hazardous Agent Specific Health Hazard Information

Proper PPE must be worn. Effects of exposure to these chemical agents may be unknown or undefined. Distinctive health effects may be the topic of research.

Drugs that are not metabolized by the body can be excreted in feces or urine. Therefore, proper waste management must be followed.

Publication references regarding the shedding or excretion of these compounds, especially experimental or newly developed drugs, should be included in the *Specify Shedding Duration* comment section below. Any additional information pertaining to these new products can be sent directly to the Chemical Hygiene Officer <https://ehs.research.uiowa.edu/about-us/contact-us>, if available. Include the Animal Protocol number in the email.

Engineering Controls:

1. Acute toxins, pesticides, RCRA chemicals and newly developed drugs must be manipulated within a chemical fume hood, serving as a primary engineering control, or a preapproved hard-ducted biological safety cabinet.
 - a. Contact the OAR for questions about chemical fume hood access within an animal facility.
 - b. Contact Chemical Safety staff in EHS for advice about equipment present in the lab.
2. Engineering controls that will be used for primary containment must have a visual indication of airflow and alarms to indicate that airflow has fallen below acceptable standards. Engineering controls must be inspected prior to each use to ensure efficient removal of hazards.
3. Procedures must be performed to minimize the creation of aerosols.
4. Only needle-locking syringes or disposable syringe units (i.e., the needle is integral to the syringe) may be used for the injection or aspiration of an injectable acute toxins, pesticides, RCRA chemicals and newly developed drugs. Following the procedure, the needle and syringe should be immediately disposed in a puncture-resistant sharps container. Needles must not be bent, sheared, broken, recapped, removed from disposable syringes, or otherwise manipulated by hand before disposal.

5. All work surfaces must be cleaned after use and immediately after a spill.
 - a. Researchers must ensure that the cleaning agent used is effective at deactivating the chemical/drug being handled.
 - b. Typically, a wetted paper towel with the solvent or aqueous solution used for the formulation or reconstitution of the chemical/drug will be effective for the initial cleaning of spilled surfaces.

Animal Study Location:

- Chemical agent formulations, reconstitution, and dilutions must be performed in the PI's laboratory.
- Chemicals administered to animals in the animal facility must be brought ready for administration.

List where Chemical agents will be administered

Chemical agents will be administered in the PI's laboratory and animals housed in the OAR Animal facility

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Handling Procedure/Personal Protective Equipment (PPE):

1. Minimum PPE requirements for the administration of acute toxins, pesticides, RCRA chemicals and newly developed drugs in animals includes: nitrile gloves, disposable gowns, goggles or safety glasses with side-shields.
 - a. Double gloving is recommended.
 - b. EHS recommends wearing an N95 dust mask while handling crushed or powdered chemicals, their contaminated dust, or animal feed containing chemical agents.
 - c. If you are going to use an N95 dust mask or any other respirator, contact the EHS Industrial Hygienist to have a respirator use assessment conducted.
2. The lab must handle all cages during active exposure if using these chemicals in the feed or reconstituted in drinking water for animals.
 - a. Cages must be handled under a chemical fume hood when performing husbandry duties.
 - b. Details for the husbandry to be conducted must be included in the animal protocol.
 - c. Records of animal husbandry must be kept in the animal room.
3. Disposal of contaminated water bottle contents (e.g. water), storage containers, and feed will be done in the PI's laboratory, see below.
 - a. Empty syringes and needles may be disposed of in a sharps container within an OAR animal facility.
 - b. Syringes/needles that contain chemicals that were not administered to an animal (e.g. additional syringes loaded with chemicals) must be disposed of in the PI's laboratory
4. Upon initial animal exposure, the PI will label cages with a yellow "Hazardous Agent" card.

- a. Yellow Hazard cards must remain on cages until at least the minimum number of **hours** (shedding period) **have passed beyond the last day the chemical was administered** (e.g. the last injection was given, last day animals had access to feed or water containing acute toxins, pesticides, RCRA chemicals and newly developed drugs) **AND** until the **cage has been changed out**. The shedding period for each chemical will be listed by agent under “*Specify shedding duration for each chemical*”
 - b. Proper PPE, as described above, must be worn to change animals to a clean cage.
 - c. Cage change stations must be used to handle animals unless other primary containment equipment (such as a chemical fume hood) is detailed under “*Describe deviations from the above listed procedures and/or additional procedures specific to this research project*”.
 - d. OAR staff must use a dump station when dumping cages that contain bedding contaminated with acute toxins, pesticides, RCRA chemicals and newly developed drugs.
5. OAR husbandry staff will notate on the Hazard card when the cage has been changed so that the PI can remove the Hazard card at the appropriate time.
 6. Should the PI wish to change out the cage prior to the regular husbandry schedule, but after the expiration date, s/he may do so with the following precautions:
 - a. The yellow hazard card must be placed face up in the dirty (empty) cage to inform the cage wash staff of the potential chemical hazard present.
 - b. The filter top must be placed on the cage prior to placing it with other dirty caging waiting to be washed by the cage wash staff.
 7. Dirty cages that may contain chemical hazards must be returned to the dirty cage area for washing with:
 - a. A yellow card (½ sized card) placed inside of the used/dirty cage(s).
 - i. This lets the staff know they must wear gloves and use a dump station to dispose of the bedding.
 - b. Empty water bottles (if water with an acute toxin, pesticide, RCRA chemical or newly developed drug was used).
 - c. Empty feeder tops (if feed with an acute toxin, pesticide, RCRA chemical or newly developed drug was used).
 - d. A filter top placed/secured on top of the cage.

Required Cage Signage:

- Cages must be labeled with a yellow “Hazardous Agent” card (which may be obtained from any OAR facility supervisor).
- The Hazardous Agent cards must contain:
 - Agent(s) in use;
 - Expiration date (including time) when the animals are no longer shedding; and
 - Daytime & afterhours contact names(s) & numbers(s).

A yellow card (1/2 sized card) must be placed in used/dirty cages to let staff know they must wear gloves and use a dump station to dispose of the bedding. The filter top will be placed on top of the cage and the caging unit returned to the dirty cage area for washing.

Animal Transport:

- Animals exposed to chemicals transported between the OAR facilities and the investigator's laboratories must be transported securely in their cage or within an approved animal transport.
- Refer to the IACUC's policy on the Transportation of Animals for additional details on proper animal transportation procedures.
- In summary
 - A cart will always be used when more than two cages are transported at one time.
 - Cages must be wrapped with breathable, disposable material.
 - Cages must be securely shut so that, if dropped, animals cannot escape.
 - Cages can be secured by using:
 - clips (ex: binder clips)
 - tape
 - rubber band
- Barrier housed animals cannot leave the OAR housing facility and return.
 - A procedure room or cage change station within the y animal hooding room may be used for the administration of chemicals.
 - Other primary containment equipment (such as a chemical fume hood) may be required as detailed under "*Describe deviations from the above listed procedures and/or additional procedures specific to this research project*".

Decontamination Procedures:

1. Surfaces should be wiped with an appropriate deactivating agent such as paper towel wetted with diluted bleach, water containing surfactants, isopropyl alcohol, etc. or using the manufacturer's recommended cleanup procedures.
2. Similarly, the outer surface of contaminated equipment should be wiped using isopropanol and water before removing them from the designated area.
3. Glassware should be decontaminated and cleaned in a designated location.
4. Wash hands and arms with soap and water immediately after handling potentially contaminated items.
5. Waste materials generated from the decontamination procedures may need to be treated as hazardous waste depending on the concentration of the hazardous material used. EHS will make this determination upon review of the protocol and will detail below, under *Waste Disposal*.
6. OAR's cage washing procedures are sufficient for decontamination of cages housing animals exposed to most acute toxins, pesticides, RCRA chemicals and newly developed drugs. Any special cleaning procedures should be performed within a chemical fume hood in the PI's lab (e.g., cypermethrin is insoluble in water).

7. Water bottles used to deliver acute toxins, pesticides, RCRA chemicals and newly developed drugs to animals must be cleaned in the lab prior to returning to the dirty cage return location.
 - a. Any liquid remaining in the water bottle should be collected as hazardous waste.
 - b. Empty the contents of the bottle into a suitable waste container.
 - c. Label the container as hazardous waste in accordance with EHS guidelines.
 - d. Wash the water bottle with soap and water or as detailed below under “*List cleaning procedures*”, and then return to the OAR dirty caging supply location.

List cleaning procedures, including decontamination of OAR caging equipment, if necessary

Waste Disposal:

- Animal carcasses/tissues must be bagged in plastic bags and staged for disposal by placing the bag(s) in red biowaste tubs, located within the walk-in coolers, refrigerator, or freezers of each animal facility.

Specify chemical waste disposal for each chemical:

- If water bottles are used to deliver acute toxins, pesticides, RCRA chemicals and newly developed drugs to animals, these must be cleaned in the lab prior to return to OAR cage wash locations
 - Wash the water bottle as directed above and return it to OAR cage wash.

Emergency Response:

Report any potential exposure incident to your supervisor and follow-up with University Employee Health Clinic.

Emergency Contacts:

Employee health Clinic: 356-3631

After hours and weekend Emergency Treatment Center: 356-2233.

Lab emergency contact: _____

Lab emergency contact: _____

Eye: If eye contact occurs, wash affected areas with copious amounts of water for 15 minutes and IMMEDIATELY seek medical advice.

Skin: If skin contact occurs, wash affected areas with copious amounts of water for 15 minutes and IMMEDIATELY seek medical advice.

Mouth: If swallowed, seek IMMEDIATE medical advice.

List the chemical agents that will require the above containment:

Multiple acute toxins, pesticides, RCRA chemicals or newly developed drugs may be included in this protocol if they require similar precautions.

Specify shedding duration for each chemical:

Describe deviations from the above listed procedures and/or additional procedures specific to this research project.

Are there protocol specific special PPE or safety procedures? Cleaning/sanitation procedures must be listed under *“List cleaning procedures, including decontamination of OAR caging equipment”*

PI Signature

Date

Hazard Containment Protocol

Office Use Only

Protocol# _____

Reviewer	Signature	Date
OAR/IACUC Veterinarian		
Environmental Health & Safety Office		