Animal Biosafety Level 2c

This protocol has been developed by the Office of Animal Resources (OAR) and Environmental Health & Safety (EHS) for use of recombinant/synthetic nucleic acid molecules and/or biological organisms in rodents, when assigned to Animal Biosafety Level 2c (ABSL2c).

Research Staff and OAR Personnel

1. In advance of administration of any agents covered under this protocol, contact the facility supervisor to arrange for appropriate housing of the animals after exposure.
2. Animals that will not be exposed to the agent should not be housed in OAR's animal biocontainment room.
3. Transporting live animals outside of the biocontainment room should not be done unless approved by an OAR/IACUC veterinarian through the animal protocol review process. The following procedure must be used when transporting animals outside of the ABSL2c room:
    a. Retrieving animals from the OAR biocontainment housing room:
        i. Animals are placed in clean cage(s) including clean caging components and feed. Dirty caging is left in the room with filter top in place for routine husbandry sanitation.
        ii. Filter tops must be secured to the cage (ex: binder clips, tape).
        iii. Cages are wrapped completely in a disposable drape (available through OAR); drape needs to be secured around the cage with tape.
        iv. Cages are transported on a cart; the cart should **NOT** be brought into the ABSL2c room when retrieving the animals.
    b. Moving animals to the OAR biocontainment housing room:
        i. If animals were anesthetized, they should be monitored and not transported until they have recovered.
        ii. Filter tops are secured (ex: binder clips, tape) and cages are wrapped completely in a disposable drape & secured with tape.
        iii. Cages are transported to the OAR ABSL2c housing room on a cart; the cart should **NOT** be brought into the ABSL2c room.
        iv. Cages are placed on the ventilated rack.
4. If appropriate, animals may leave the biocontainment housing room and be returned to their original housing room after meeting two conditions:
    a. It has been at least 5 days since the last exposure and
    b. There has been at least one cage change.
    [Animals brought to a research laboratory may not be returned to barrier housing and alternate housing must be arranged with an OAR veterinarian.]
5. Proper personal protective equipment (PPE) must be worn when handling animals, cages or injecting agents. Required PPE is prominently posted on the entry doors to all animal biocontainment housing rooms.
6. Soiled cages, with filter tops in place, must be returned to the biocontainment room, where all bedding and waste from animals exposed to recombinant or synthetic nucleic acid molecules/infectious agents will be managed by OAR husbandry personnel.
7. Cages, including bedding, food, feeders and filter top are placed in autoclavable bags and are autoclaved by OAR personnel prior to cage manipulation and washing.
8. Animal carcasses/tissues must be double-bagged in plastic biohazard bags and staged for disposal by placing the bag(s) in red biowaste tubs located within the walk-in coolers, refrigerators, or freezers of each animal facility.

General Policies

1. Access is limited to necessary personnel.
2. Eating, drinking, smoking, and storing of food for human use are not permitted in any animal room.
3. Personal protective equipment is available and must be worn by all personnel entering the biocontainment room. Remove PPE before leaving the animal room, discarding the PPE in the biohazard container in the room.
4. Personnel must wash their hands before leaving the room or animal facility.
5. A biohazard sign that includes the universal biohazard symbol, the biohazard agent/s presently in use in the room, and name and telephone number of the primary investigator/lab contact must be posted on the door.
6. Cages must also bear the universal biohazard label, the biohazard agent being used and the expiration date, if applicable.
7. In the event an incident occurs that may result in an exposure to recombinant or /synthetic nucleic acid molecules/infectious materials (including animal bites), immediately notify your supervisor and EHS's Biosafety Officer (353-5679).

Use of Agent

1. The agent should be manipulated within a biological safety cabinet, whenever possible. Guidelines for BSC use are available through the EHS website (https://ehs.research.uiowa.edu/biological-safety-cabinet-bsc-use).
2. Work surfaces must be decontaminated after use and in the event of a spill. Research staff must ensure disinfectant is effective against the agent in use; OAR currently provides Spor-Klenz within the facility.

1. Procedures must be performed to minimize creation of aerosols. 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 infectious fluids. Following the procedure, the needle and syringe should be promptly placed in a puncture-resistant sharps container. Recapping needles is strongly discouraged; if you need to recap needles, you must follow EHS guidelines for this procedure.
3. All contaminated materials used by the investigator (needles, syringes, vials, gloves, etc.) must be properly disposed of in the appropriate biohazard containers, i.e., needles, syringes and vials placed in a sharps container, and gloves, etc. placed in the biohazard box/container. Biohazard containers are located in the animal rooms.

WHEN APPROVED IN ADVANCE BY AN OAR/IACUC VETERINARIAN
Use of Core Facilities with infected animals prior to the 5-day shedding period

1. Whenever possible, animals are manipulated on the cart used to transport the animals to the facility (rather than "contaminating" table top surfaces or absorbable 'chucks' in the room).
2. If necessary, dedicated 'nose cones' are used to administer gas anesthetic to maintain anesthetic level of the animal.
3. When possible, anesthetized animals are placed on a single use disposable sheet on shared equipment (a black sheet is used for the IVIS).
4. When the procedure/imaging is completed, animals are placed back into their cage and the filter top put back into place.
5. The disposable sheet is sprayed down (until wet) with an appropriate disinfectant and placed in the biohazard waste receptacle in the facility.
6. The equipment is disinfected with an appropriate disinfectant (includes inside of machines as well as the outside and handles/knobs).
7. Nose cones, if used, are disinfected by soaking them in a closed container with appropriate disinfectant and stored in the investigator's lab, not the core facility.
8. All working surfaces in the room (e.g. table tops, plastic cover on computer keyboards, etc.) are disinfected with an appropriate disinfectant. If any absorbable 'chuck(s)' on table top surfaces are used or contaminated they will be decontaminated with an appropriate disinfectant, disposed of in the biohazard waste receptacle, and replaced with a clean 'chuck'.

Cage handling

1. Infectious rodents will be housed in a Thoren unit or on a shelving rack with filter-top caging.
2. Laboratory staff must not change caging (includes food, cage, feeder top, filter top, & cage card holder) until 5 days after last exposure. Dirty caging must be left in the designated ABSL2c room for disinfection and sanitation by OAR staff.
3. OAR staff will place dirty caging in autoclave bags for autoclaving prior to washing and reuse.
4. All animals and caging must be handled within a certified biosafety cabinet. Exceptions and/or deviations from utilizing a biosafety cabinet for manipulations in the lab or core service (ex: imaging) should be described in the deviations sections at the end of this form.

OAR Personnel

Infected Animal Disposal

1. If a deceased animal is found, OAR personnel will double bag the carcass in a biohazard-labeled bag, place it in the cooler, and submit a dead in pen (DIP) slip for the animal. The PI and any staff with system access will receive an email from the OAR office or vet staff notifying them of the death.
2. Carcasses are placed in a DIP bin in the cooler; bins are labeled with the day of the week that corresponds to the date on the automated email that PIs and staff receive once the DIP slip is processed. Carcasses are saved for at least 3 days' post-death, longer over holidays.

List the hazardous agent(s) that will require ABSL2c containment

Will animals be transported out of the housing room during the 5 day containment period? ☐ *Yes* ☐ *No*
If Yes, for what purposes?

Will animals be returned to standard housing AFTER the 5 day containment period?
☐ *Yes* ☐ *No*

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

Lab Emergency Contact Information

*PI Signature*_____ *Date*_____

Routing and Approvals

Hazard Containment Protocol

Office Use Only

Protocol#

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