

**Subject: Animal Transportation**

Source: Institutional Animal Care and Use Committee (IACUC)

Effective Date: 05/13/2024

Replaces: 08/14/2023

Applies to: Personnel involved in Research or teaching studies involving animals.

Applies to: Personnel involved in Research or teaching studies involving animals

Reference: Animal Welfare Act; PHS Policy on Humane Care & Use of Laboratory Animals; Guide for the Care & Use of Laboratory Animals



**Introduction**

The Institutional Animal Care and Use Committee (IACUC) maintains oversight review for federally mandated rules and regulations with regard to animal research, ethics, misconduct and biomedical research for the University of Colorado Denver | Anschutz Medical Campus (CU Denver | Anschutz).

**Policy Statement**

This policy is intended to provide information on the requirements of animal transportation and to establish procedures to be followed before, during, and after transportation of animals.

- All transportation of animals, including intra-institutional transportation, should be planned to minimize transit time and risk of zoonoses, protect against environmental extremes, avoid overcrowding, provide food and water when indicated and protect against physical trauma. Some transportation-related stress is inevitable, but it can be minimized by attention to those factors. Coordination of shipping and receiving with animal-care personnel is important to ensure that animals are received properly and that appropriate facilities are available for housing.
- Intra- or inter-institutional transportation needs to be identified in an IACUC approved Animal Care and Use Protocol.

**Criteria for Animal Transport between CU Denver |Anschutz Animal Facilities and Laboratories**

- Animals may only be transported out of the animal facility with permission from the IACUC.
- Animals may only be transported out of the animal facility in approved transport containers.
- Animal transfers between:
  - RC-1 and R2/AHSB: OLAR staff must perform the transfer. PI's and lab staff are not permitted to transfer animals between these facilities.
  - R2 and AHSB: Animals may be transported between R2 and AHSB by PI's and lab staff by following approved traffic patterns.
  - PR2 and RC-1/R2/AHSB: The distance between PR2 and the primary facilities is a 15 min walk outside where conditions may be extreme. PI transport of animals to PR2 is discouraged. Routine transfer is available to PR2 by OLAR staff.
- Exercise care in handling enclosures used to transport live animals. They must not be dropped, needlessly tilted, or stacked; or handled in any manner which may cause physical trauma or stress to the animals. Animals moving about in these containers do cause the container to shift and move slightly.
- The animal facility provides investigators with transportation containers of appropriate size for rats or mice. Investigators are expected to use the transport container provided by the animal facility.
  - Any deviation from facility-approved transport containers must be justified and approved in the IACUC protocol. This includes using the facility's regular caging.
- Investigators are encouraged to label transport containers with unique information regarding the animals being transported.
- Animal density within transport container should allow for normal postural movements.



- A maximum of 3 adult mice or 1 dam and litter are allowed in a mouse transport container.
  - A maximum of 2 adult rats are allowed in a rat transport container.
- For animals not yet weaned, transport only one litter per transport container.
- More than one species is not permitted to occupy the same transport container at the same time. Physically separate the animals by species to prevent interspecies disease transmission and to eliminate anxiety and possible physiological and behavioral changes due to interspecies conflict.
- It is recommended to place primary transport containers in a secondary enclosure to ensure proper containment of animals, and appropriately shield animals from view of the public.
  - If more than two transport boxes are being moved, it is required to use a secondary container and/or cart to hold the transport boxes.
  - Secondary enclosures must be ventilated and constructed of materials which can be cleaned and disinfected (e.g. plastic or rubber) to prevent the spread of pathogenic organisms, animal allergens and animal wastes. Cardboard is not approved as a secondary enclosure.
  - Secondary containers from your laboratory should not be taken into the animal room. Please leave your secondary containers in the facility's designated area for non-decontaminated equipment and carts (near freight elevators).
    - Obtain transportation containers from a shared procedure room, take containers into animal room, and place the appropriate number of animals into each box.
    - Next, bring your animals (in transport container) out of the housing area, and into the designated area near the freight elevators where you have left the secondary container (transfer the containers to a secondary container if necessary) for transport to the lab.
    - Please contact facility managers for more detailed information.
- If using a cart for transport back to your lab, store the transport cart near the freight elevator(s) and ensure that the transport containers/secondary containers are secure and stable on the cart during transport.
- If approved to move facility caging, an opaque drape or cover, or secondary container is required so animals are not visible.
  - Disposable gowns do not meet this standard.
- Minimize transit time and avoid public areas if and when possible. Hallways are public areas and movement of animals should be discrete and unobtrusive.
- Procedures for using animals in the lab:
  - If animals will be in laboratory for more than 2 hours, animals must be transitioned to disposable caging.
  - If animals will be in the laboratory for more than 6 hours, they must be provided food and water.
  - Disposable caging can be purchased from animal facilities front desk.
  - Animals cannot be housed in a laboratory more than 12 hours unless special permission has been obtained from IACUC.

**Animal transport routes from RC-1 and R2/AHSB vivariums to adjacent laboratory space:**

- **RC-1 vivarium to RC1 South or R2 laboratory space:**
  - Take the freight elevator from RC-1 vivarium to the 2<sup>nd</sup> floor. Transport animals along the back corridor (otherwise animals will be transported in a faculty member's office space) to the cove of public elevators.
  - Exit the laboratory hallway; pass by the elevators through the double glass doors. Continue straight and cross the bridge connecting RC1 North and R2 or RC1 North to RC1 South.
    - RC1 South – Upon exiting the bridge walk to the



- Southeast end of the floor and enter the door. Take the freight elevator to the appropriate floor.
- R2 - Upon exiting the bridge turn right at the first hallway past Krugman Hall and head to the wood door labeled "P-15 2L02". Behind this door is the freight elevator. This elevator should allow access to the desired floor containing the final destination (presumably the laboratory). Upon exiting the freight elevator, laboratory access should be gained by heading through the wood door to the left of the freight elevator.
  - **R2/AHSB vivariums to RC1 North or South laboratory space:**
    - This is essentially the reverse of the above directions.
    - When leaving R2 or AHSB, utilize the freight elevator from the R2 vivarium to access the 2<sup>nd</sup> floor (animals coming from AHSB must use tunnel to the R2 vivarium to exit with live animals). Exit the wood doors to the right of the freight elevator and take a right down the hallway. At the first hallway on the left is the bridge to RC-1.
    - RC1 North - Proceed across, enter the glass doors and pass the cove of public elevators. Enter the wood door to access the laboratory hallway. Take a left and follow the hallway around to the freight elevator. The freight elevator will allow access to the floor with the designated laboratory endpoint.
    - RC1 South – Follow the directions above to the freight elevator for RC1 South.
  - **RC-1/R2/AHSB vivariums to Barbara Davis Center (BDC) or School of Pharmacy (SOP):**
    - Rodents transferred from RC-1 or R2/AHSB to BDC will be taken outside buildings and exposed to potentially extreme hot and cold weather (albeit briefly), these cages are required to adhere to the OLAR and IACUC-approved procedure at all times.
    - Labs are responsible for transferring their own rodents to BDC or SOP.
    - Animal containment- approved animal containers
      - Mice are placed into primary disposable enclosure.
      - Primary enclosure is placed within secondary container which is provided by the lab (sanitizable box, tool chest, etc.). The secondary container is required to bring animals outside of the building.
      - Hand carry or place disposable containers that have been placed into a secondary container on a cart to BDC.
    - **BDC Transfer Route-** for both animal containment systems
      - Mice will be taken up the service elevators
      - Transport of containers must occur within the research towers until exit from RC-1 South lower loading dock
      - From there, walk animals directly to the BDC loading dock, and then use the freight elevator to the appropriate lab
    - **SOP Transfer Route-** for both animal containment systems
      - Mice will be taken up the service elevators
      - Transport of containers must occur within the research towers until exit from RC-1 North loading dock
      - From there, walk animals directly to the SOP loading dock, and then use the freight elevator to the appropriate lab.
  - **Animal transport from a vivarium to new facilities**
    - Any new facilities or buildings not currently addressed in this policy where animals will be taken will require a review of the animal containment and transfer route prior to animals being transported to the new laboratories.
    - New facilities where animals will need to be transported in the outside elements will require temperature monitoring and a log for a minimum period of 1 year. Records will be maintained for review by the IACUC during the semi-annual inspection.



After 1 year, the records can be submitted to the IACUC for review and consideration as to whether the temperature monitoring will be required to continue.

- **Criteria for Transport from ABSL-2+ Housing to Lab Space**
  - Must be approved by the Biosafety Officer or their designee. The lab will provide a cart (if applicable) for movement from the animal facility, a hard-sided plastic container that latches shut and a separate black trash bag for each disposable transport container containing animals that is to be moved. These items will be brought down the freight elevator and will be staged at the freight elevator lobby.
  - Within the BSC, transfer the animal out of the home cage and into a cardboard disposable transport container (provided by the facility).
  - Within the BSC, place each individual transport container into its own black trash bag (provided by the lab). Each bag is then closed with a pig-tail knot.
  - Spray the outside of each bag with disinfectant (provided by OLAR).
  - Transport the bagged transport containers to the freight elevator lobby, spray down the outside of the container with disinfectant again and place in a secondary hard-sided plastic container that latches shut.
  - Ensure that the secondary transport container is labeled with a Biohazard label (provided by the facility).
  - Transport the animal via the freight elevator to the lab space via cart (if applicable).
    - At no time during transport to the laboratory will the animals/cart be unattended and there will be no unscheduled stops between the vivarium and the procedure lab.
  - Upon arrival into the lab space, the animals must be immediately removed from the transport container and either:
    - **A.** euthanized immediately or
    - **B.** transferred into a disposable mouse cage (available for purchase from the facility).
    - If you choose to transfer the animal to the disposable cage, the cage can be reused up to a maximum of 10 times and **must** also be labeled with a biohazard label.
    - The cage must be properly cleaned/disinfected between each use.
    - When the cage has reached its lifespan, it should be placed into the red Biohazard Waste Stream (red tub) for proper disposal.
    - The transport containers should also be placed into a red tub for biohazard disposal.
    -
  - ABSL2+ Carcass Disposal
    - The carcass should be placed into a small sealable biohazard carcass bag and should be labeled with the PI name and the originating ABSL housing room number.
    - The carcass should be brought back down into the animal facility and placed in to the biohazard refrigerator for disposal.

#### **Criteria for Inter-Institutional Animal Transport**

- For inter-institutional transport, the CU Denver | Anschutz IACUC allows options:
  - An OLAR approved animal courier service;
  - A designated institutional vehicle approved by an IACUC;
  - A private vehicle:
    - The CU Denver | Anschutz IACUC discourages this method of transport to local and distant institutions for its own faculty and staff.
    - This will be considered for approval when:
      - The use of a courier or institutional vehicle cannot be accommodated.



- Specific situations like the transport of domestic retail rodents (see below).
  - If approved, semi-annual inspections of the private vehicle are required.
  - The CU Denver | Anschutz IACUC will not prohibit another institution's staff or faculty from transporting animals to/from CU Denver | Anschutz if a letter or memo from the institutions' IACUC is provided which acknowledges;
    - The non-CU Denver | Anschutz institution's IACUC approves the private vehicle method of transportation.
    - The non-CU Denver | Anschutz institution's IACUC takes full responsibility for the animals during transport to/from CU Denver | Anschutz.
- When transporting animals, precautions must be taken to ensure the animals are maintained at the appropriate temperature, to minimize transmission of disease, and to ensure adequate airflow to animals. Thus, the following guidelines must be followed when transporting animals:
  - Transported in the interior of vehicle (i.e. front or backseat, or approved climate-controlled cargo area), which must be maintained at 65-85°F
  - Rodent cage tops must be on at all times and must be secured (e.g. tape the top & bottom together or utilize a rubber band).
  - Rodents should not be transported at a cage density of more than two times the standard housing density.
  - Cages must not be stacked on top of each other.
  - The section of the vehicle where the animal cages are placed must be clean and cleanable (i.e. a plastic sheet underneath)
  - Transit time must be minimized, ideally less than 2 hours.
  - Dirty cages must be returned to the animal facility from which the cages originated, bagged and secured (red or orange biohazard bags should **NOT** be utilized unless the cages have been exposed to a true biohazardous agent).
  - Occupational health issues for humans have been adequately addressed.

#### **Criteria for Transport of Domestic Retail Rodents**

- The PI, or designee, will be responsible for the transport of domestic retail rodents to CU AMC campus or other designated facility.
- Use of personal vehicles for the transport of domestic retail rodents must be approved by the IACUC.
- Transport containment requirements include:
  - Rodents will be put into a secure primary container, which is then placed into a re-usable, secure, secondary container.
  - The primary container is a single use disposable container which insures adequate ventilation.
    - Primary container animal density must not exceed more than two times the standard housing density.
  - The secondary container must be ventilated and constructed of materials which can be sanitized.
    - See above on Transferring Animals from OLAR facilities to BDC or the SOP for accepted parameters for the secondary container.
  - Primary container will be disposed of by OLAR and secondary containment will be sanitized by OLAR and return to lab for future use.
- Vehicle requirements include:
  - Inspection by the IACUC twice yearly.
  - Rodents must be transported in the interior of vehicle, which must be maintained at



65-85°F.

- There must be an effective means to stabilize the transport containers within the vehicle to prevent sliding, bouncing and overturning.
  - Ability to shield the transport container from direct sunlight during transport to avoid overheating.
  - An animal transport log, which contains temperature from inside the secondary container, must be maintained for each transport.
  - Transit time must be minimized, ideally less than 2 hours.
- All domestic retail rodents must be delivered to OLAR personnel at the facility loading dock. OLAR staff will place rodents into sterile caging and transfer into ABSL housing space.