



Cornell University  
Cornell Center for Animal Resources and Education

CARE513.01 Rodent Husbandry

The intent of this SOP is to describe the steps involved in providing routine care and husbandry of rodents in Cornell University's animal facilities. This SOP is intended for use by the animal care personnel, animal facility managers, and CARE personnel. This SOP is approved by the Institutional Animal Care and Use Committee (IACUC) and the Cornell Center for Animal Resources and Education (CARE). Each facility may have supplemental SOPs that further describe their specific manner of operation. Any exemption must be submitted for approval to the IACUC prior to its application.

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### 1. Introduction

- a. The purpose of this SOP is to describe the basic procedures required for routine rodent care.

### 2. Materials

- a. Cage cards
- b. Feed
- c. Bedding
- d. Enrichment materials

### 3. Procedures

- a. Observation of animals
  - i. Observe all rodents daily for illness, injury and general condition, including weekends and holidays
- b. Emergency and holiday care

- i. Provide routine care and husbandry for all rodents on weekends and holidays.
  - ii. Make provisions for emergency care by providing both work and after hours contact information for Principal Investigators and their staff. Provide special requests or instructions if needed. Post CARE staff contact information.
- c. Animal identification methods
- i. Identify all cages with a cage card (with barcode for eSirius of applicable). Include, at a minimum, the following information: species, strain, sex, number of animals in the cage, investigator, protocol number.
  - ii. Identify individual animals as needed in accordance with CARE SOP 552
  - iii. Examples of individual identification methods include: ear punching, ear tags, micro-tattooing, or micro-chips.
- d. Records and documentation
- i. Refer to CARE SOP 542 for record keeping requirements at Cornell animal facilities.
- e. Food and water
- i. Feed animals to meet current National Research Council recommendations for rodent nutrition.
  - ii. Food storage
    - Store feed on pallets off the floor and 4-6 inches away from walls, in a vermin-proof storeroom.
    - Store open feed bags in leak-proof containers with tightly fitting lids.
    - Maintain temperature and humidity controls in the storeroom. Avoid temperatures above 70° F and extremes in humidity.
    - Use feed within 6 months of milling date.
    - Stack feed in a manner that allows easy reading of the milling date.
  - iii. Check automatic watering devices daily for proper operation and cleanliness. Replace empty bottles with clean ones rather than refilling them. Under extenuating circumstances when bottles might need refilling, ensure that each bottle is returned to the same cage to prevent cross contamination.
  - iv. Monitor water quality routinely to ensure that it is free of contaminants that could potentially expose animals to chemical or infectious agents. Refer to CARE SOP 544 for water quality monitoring requirements.
- f. Breeding program
- i. House breeders in either monogamous pairs or harem groups.
  - ii. Remove the pregnant female from the harem group and put her in her own cage before giving birth.

- iii. Wean litters before the next litter is born to prevent over crowding in the cage.
- g. Social and environmental enrichment
  - i. Group house rodents whenever possible.
  - ii. Provide environmental enrichment devices for all rodents. Examples of enrichment include, but are not limited to, the following: PVC pipe, nest-lets, autoclaved blocks of wood, paper huts or nylabones. Please refer enrichment SOPs (CARE SOPs 560, 561, 563, 564, and 565).
- h. Quarantine procedures
  - i. Quarantine rodents from unapproved vendors for one to eight weeks depending on the status of both the vendor and the facility where they will be housed. CARE veterinarians will determine the quarantine requirements for each shipment. Refer to CARE SOPs 509 and 606.

**Note:** Quarantine of rodents from approved vendors is not required.
- i. Euthanasia and disposal of dead animals
  - i. Euthanize rodents by CO<sub>2</sub> inhalation, barbiturate overdose or decapitation. Ensure that euthanasia is conducted by trained and experienced staff. Refer to CARE SOP 301.
  - ii. Dispose of dead animals by incineration or digester at the College of Veterinary Medicine.

**Note:** In special cases rodent carcasses are fed to raptors or snakes. The carcasses utilized for food must be from healthy, non- transgenic rodents which were euthanized with carbon dioxide.
- j. Pest control
  - i. Refer to CARE SOP 538 for a description of the vermin control program.
- k. Environment and environmental control
  - i. Maintain room temperatures between 64 and 76° F. Refer to the Guide for species specific temperature ranges.
  - ii. Maintain relative humidity between 30% and 70%.
  - iii. Maintain a daily log of room temperature and humidity.
- l. Bedding
  - i. Use wood chips, shredded paper products or chopped corn cobs as bedding materials.
  - ii. Use enough bedding to keep the rodents clean and dry until the next scheduled change.

**Note:** Cedar shavings are not recommended due to the harmful presence of aromatic hydrocarbons.
- m. Lighting
  - i. Provide a regular diurnal lighting cycle.

**Note:** Lights are controlled by timers set at a photoperiod of 12 to 14 hours of light. Check the timer performance routinely.
- n. Space requirements

- i. Provide cages that are appropriate in size for the number of rodents housed in them. Refer to the recommendations set in Table 2.1 (pg. 27) of *Guide for the Care and Use of Laboratory Animals*.
- o. Cleaning of cages
  - i. Change cages once every two weeks at a minimum.
  - ii. Change cages more frequently if needed to keep the animals clean and dry and provide a healthy environment.
  - iii. Supply fresh bedding with each cage change with the exception of the sentinel cages. Please refer to CARE SOP 602.
- p. Cleaning and sanitation of equipment
  - i. Clean and sanitize equipment at least every two weeks, more frequently if needed.
- q. Transportation
  - i. Transport rodents being shipped outside of Cornell in filtered commercial rodent transport boxes.
  - ii. Transport rodents within Cornell in either filter cages or unfiltered cages wrapped in a material which prevents animal allergens from escaping into the environment. Refer to CARE SOP 547.
- r. Waste Management
  - i. Deposit non-regulated or non-infectious Medical Waste and soiled materials in dumpsters.
  - ii. Regulated (or infectious) Medical Waste is processed through the incinerator section at the Vet College, following EH&S policy.

#### **4. Safety**

- a. Working with rodents can trigger related allergies (refer to CARE Allergens web page). Check with the facility manager regarding requirement for personal protective equipment and refer to CARE SOP 715.
- b. Refer to CARE zoonosis web page for zoonotic information specific to rodents.
- c. Observe CARE SOP 707 for animal related injury.

#### **5. Contingencies**

- a. Post contact information for emergency assistance in a conspicuous location within the animal facility.
- b. Emergency veterinary care is available at all times including after working hours and on weekends and holidays by CARE (pager 1-800-349-2456).

## 6. References

- a. *Guide for the Care and Use of Laboratory Animals*. National Research Council; National Academy Press, Washington, DC, 1996.
- b. *Laboratory Animal Management: Rodents*. National Research Council; National Academy Press, Washington, DC, 1996.
- c. Nutrient Requirements of Laboratory Animals, Fourth Revised Edition, Subcommittee on Laboratory Animal Nutrition, Committee on Animal Nutrition, Board on Agriculture, National Research Council, 1995.
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<http://www.research.cornell.edu/CARE/zoonoses.html>
- f. CARE Allergens Prevention web page  
<http://www.research.cornell.edu/Care/documents/OHS/AllergyPreventionFactSheet.pdf>
- g. CARE SOP 301 Rodent Euthanasia  
<http://www.research.cornell.edu/CARE/documents/SOPs/CARE301.pdf>
- h. CARE SOP 509 Animal Acquisition, Receiving and Acclimation  
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- j. CARE SOP 542 Maintaining Clinical Records for Animal Research Models  
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- k. CARE SOP 544 Microbiological Monitoring Program in Conventional Laboratory Animal Facilities  
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- l. CARE SOP 547 Animals (Non-Agricultural) Transported and Used Outside Animal Facilities  
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- p. CARE SOP 563 Environmental Enrichment for Guinea Pigs  
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- q. CARE SOP 564 Environmental Enrichment for Hamsters  
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- r. CARE SOP 565 Environmental Enrichment for Woodchucks  
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- s. CARE SOP 602 Rodent Health Monitoring Program  
<http://www.research.cornell.edu/CARE/documents/SOPs/CARE602.pdf>
- t. CARE SOP 606 Mice Quarantine Program  
<http://www.research.cornell.edu/CARE/documents/SOPs/CARE606.pdf>
- u. CARE SOP 707 Animal Related Injury  
<http://www.research.cornell.edu/CARE/documents/SOPs/CARE707.pdf>
- v. CARE SOP 715 Personal Protective Equipment  
<http://www.research.cornell.edu/CARE/documents/SOPs/CARE715.pdf>

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