

STANDARD OPERATING PROCEDURE #503 ENVIRONMENTAL ENRICHMENT PROGRAM FOR RATS

1. PURPOSE

The intent of this Standard Operating Procedure (SOP) is to describe an appropriate environmental enrichment program for rats.

2. RESPONSIBILITY

Facility Animal Care Committees (FACC), veterinarian, principal investigators (PIs), animal care staff

3. PROCEDURES

- 3.1. The purpose of environmental enrichment is to provide rats with opportunities to express basic behavior needs, to promote species-typical, non-injurious, behavior and to promote physical and mental health thus enhancing animal welfare. The environmental enrichment should be biologically relevant (i.e.: hiding, socializing, searching) so that it does not lose its enriching value over time.
- 3.2. Social Contact:
 - 3.2.1. Pair or group house rats.
 - 3.2.2. Rats may be singly housed with strong scientific, welfare or medical justification:
 - 3.2.2.1. Incompatibility (aggression)
 - 3.2.2.2. Medical reasons
 - 3.2.2.3. Specific protocol approved by FACC
- 3.3. Housing System:
 - 3.3.1. Animals should be housed with the goal of maximizing species-specific behaviors, minimizing stress-induced behaviors, providing opportunity for social contact and locomotor and exploratory behaviors. Cages should be of a sufficient size and complexity to allow rats to be housed in appropriately sized groups and to perform behaviors important to their welfare.
 - 3.3.2. House rats in solid-bottom cages with contact bedding, unless specifically described in the animal use protocol and approved by the FACC.
 - 3.3.3. The housing system should meet or exceed the minimal space and height recommendations of the current Canadian Council on Animal Care (CCAC) guidelines for rats.
- 3.4. Shelters and nesting material:
 - 3.4.1. Shelters and nesting material address the behavioral needs of the rat and provide comfort for the animals.
 - 3.4.1.1. Provide nesting material (e.g., looser paper strands such as Enviro-Dri®, NESTLET®, corn husk, shredded aspen) in every cage.
 - 3.4.1.1. Provide a shelter (e.g. plastic tube) in every cage.
 - 3.4.1.2. Transfer nesting material to the clean cage during cage change, add additional nesting material and provide a new shelter if necessary.
- 3.5. Other environmental enrichment items:
 - 3.5.1. Additional elements that may enrich the animals' environment may be provided as described in the animal use protocol and approved by the FACC.
 - 3.5.2. Additional elements may include:
 - 3.5.2.3. Features to promote activity such as structures to climb on or around, exercise wheels, swings, hammocks.
 - 3.5.2.4. Structures for hiding or avoidance such as shelters, tubes, or dividers
 - 3.5.2.5. Substrates for burrowing

- 3.5.2.6. Objects to chew such as nylon bones or wooden blocks
- 3.5.2.7. Variety in food (e.g., a piece of vegetable, cereal, or treats)
- 3.5.2.8. Selected food items in the bedding to encourage foraging

3.6. Exemption:

- 3.6.1. Exemption from this environmental enrichment program must be justified and approved by the FACC, or prescribed for medical reasons.

4. REFERENCES

- 4.1. [Canadian Council on Animal Care \(CCAC\) guidelines: Rats, 2020.](#)

SOP REVISION HISTORY

DATE	NEW VERSION
2023.03.06	2. Responsibility Facility Animal Care Committees (FACC), veterinarian , principal investigators (PIs), animal care staff.
2023.03.06	3.2.2. Rats may be singly housed with strong scientific, welfare or medical justification in some cases: 3.2.2.1. Incompatibility (aggression)
2023.03.06	3.3.1. Animals should be housed with the goal of maximizing species-specific behaviors, minimizing stress-induced behaviors, providing opportunity for social contact and locomotor and exploratory behaviors. Cages should be of a sufficient size and complexity to allow rats to be housed in appropriately sized groups and to perform behaviors important to their welfare.
2023.03.06	3.3.3. Housing system should meet or exceed the minimal space and height recommendations of the current Canadian Council for Animal Care (CCAC) Guidelines for rats. for a standard rat cage (~140 sq. inches) 1 females, 1 male, and one litter until weaning. After weaning: 4 rats if <200 g; 3 rats if <300g; 2 rats if >300g
2023.03.06	3.4 Dietary Enrichment: 3.4.1. No dietary enrichment is routinely provided. 3.4.2. Provide rats with dietary supplementation as allowed by the PI for positive reinforcement (e.g., sunflower seeds).
2023.03.06	3.5. Objects: 3.4. Shelters and nesting material: 3.5.1. Nesting material: 3.4.1. Shelters and nesting material address the behavioral needs of the rat and provide comfort for the animals. 3.4.1.1. Provide nesting material (e.g., looser paper strands such as Enviro-Dri®, NESTLET®, corn husk, shredded aspen) in every cage. 3.4.1.2. Provide a shelter (e.g. plastic tube) in every cage. Shelter should provide enough protected space for all cage occupants. 3.4.1.1. Transfer the nest nesting material to the clean cage with the animals during cage change, add additional nesting material and provide a new shelter if necessary.
2023.03.06	3.5.3. Chewing device: 3.5.3.1. Provide a chewing device (e.g. nylon bone, hardwood block) to rats on powdered food, or preferably to all rats.
2023.03.06	3.5. Other environmental enrichment items: 3.5.1. Additional elements that may enrich the animals' environment may be provided as described in the animal use protocol and approved by the FACC. 3.5.2. Additional elements may include: 3.5.2.2. Features to promote activity such as structures to climb on or around, exercise wheels, swings, hammocks. 3.5.2.3. Structures for hiding or avoidance such as shelters, tubes, or dividers 3.5.2.4. Substrates for burrowing 3.5.2.5. Objects to chew such as nylon bones or wooden blocks 3.5.2.6. Variety in food (e.g., a piece of vegetable, cereal, or treats) 3.5.2.7. Selected food items in the bedding to encourage foraging
2023.03.06	4. REFERENCES 4.1. Canadian Council on Animal Care (CCAC) guidelines: Rats, 2020.