

HKSTP IACUC

06 – Husbandry and Housing Environment Guidelines

Version History

Version	Effective Date
1	28/02/2023

1. Purpose

The guidelines aim to provide a reference to the minimum standard of husbandry, housing environment and environmental enrichments for laboratory animals housed in HKSTP for research purposes. Please note that husbandry and environmental enrichments requirements for specific species may differ according to the species' innate behavior and physical needs.

2. General Principles

- 2.1 All animal husbandry and enrichment programs should be reviewed by HKSTP IACUC to ensure standards of animal welfare.
- 2.2 All laboratory animals maintained in captivity in HKSTP should be housed and handled under conditions that minimize animal stress and enhance animal welfare.
- 2.3 Environmental enrichment based for the specific species should be provided as part of the husbandry program.
- 2.4 The husbandry and environmental enrichment program should take into consideration the different life stages of the animal, assessment and appropriate modifications should be made to ensure standards of animal welfare throughout the lifespan of the laboratory animal.
- 2.5 Sufficient space should be provided for animal's physiologic, behavioral, and social needs (animals shall be able to express natural postures, turn around, have access to food and potable water, and rest away from urine and feces).
- 2.6 Housing environment of animals should be enriched by the provision of suitable items that encourage activities or play, in order to promote psychological well-being. These items, however, should not harm the health and safety of animals or humans or prevent the achievement of the scientific objectives.
- 2.7 Laboratory animals that are naturally physically active and are used for breeding or involved in long-term projects shall additionally be provided with an activity area and be exercised regularly. Items for enrichment and play appropriate to the species shall be placed in the activity area to enrich the environment.

- 2.8 Access to good quality food of appropriate caloric intake, suitable for the animal, must be provided unless scientifically justified.
- 2.9 Ad libitum access to clean drinking water must be provided unless scientifically justified.
- 2.10 Unless special arrangements are made for appropriate justifications, each housing room shall only maintain one single species.
- 2.11 Each housing room should consider the following living conditions for the animals: Air quality, temperature, humidity; physical structure of cage or enclosure; objects within space (shelter, nest boxes, substrate, objects for manipulation); sanitation and biosecurity, environmental enrichment; human interactions (contact, handling, restraint and training).
- 2.12 Personnel must not tease or abuse laboratory animals. Capture of animals shall be by appropriate methods, with sympathetic and gentle handling in order to avoid causing animals discomfort, fear, pain, or injury.
- 2.13 If abnormalities are detected in animal(s), the cause shall be promptly investigated and necessary actions shall be taken to address and correct them.
- 2.14 Animal care personnel shall provide animals with sufficient feed and clean drinking water in accordance with their feeding habits and nutritional needs.
- 2.15 Newly received animals require a period of acclimatization before they are used in order for them to reach a state of physiological and behavioral stabilization. The duration of the acclimatization period depends on the mode and duration of transport, age, species, source, and anticipated use of the animals. It also depends on the differences between the environments and husbandry conditions of the place of origin and destination.
- 2.16 Animal facilities shall be able to effectively separate and isolate sick animals from healthy animals.
- 2.17 The specific nutritional needs of animals shall be fully met during gestation, lactation, at different stages of experiments, and during postsurgical recovery periods.
- 2.18 When an experiment requires animals' food and water intake to be restricted, full scientific justification and explanation of the necessity for fasting must be provided and submitted to the Ethics Committee for prior review and approval.
- 2.19 Veterinarians or personnel trained in laboratory animal veterinary care are required to monitor the parturition of laboratory animals to prevent unforeseen accidents. Hand rearing, nursing, and other necessary measures shall be available to young animals that are not able to live independently immediately after birth.
- 2.20 For projects involving the breeding and use of genetically altered animals and spontaneous or induced mutant models in which the mutation is harmful to the animals, animals shall be monitored and special husbandry and welfare-related needs associated with the model phenotype shall be provided.

- 2.21 Hygiene and disease control and prevention of the housing and experimental environments shall meet the requirements set out in relevant regulations and standards. There shall be proper disease control and prevention protocols and husbandry management in place at facilities to avoid cross-infection between animals and between humans.
- 2.22 When habitually social animals are housed individually, there shall be a sound reason for doing so, and effective measures taken to reduce the individual animal's loneliness or suffering.

3. Husbandry and Housing Environment [Rodent Specific]

- 3.1 All mice and rats shall be housed in social groups by default unless justified based on research protocol requirements, social incompatibility, or veterinary-related concerns.
- 3.2 Use of environmental enrichment shall be considered for the behavioral and social needs of mice and rats.
- 3.3 At least one enrichment item shall be provided in each housing room for mice/rats. A list of recommended enrichment items is provided below for reference. (Please note that this list is not exclusive)
 - Enviro-Dri
 - Nestlet
 - Aspen block
 - Tunnels
 - Crawl balls
 - Retreats
- 3.4 Enrichment treats may be provided in suitable studies. The diets should comply with the requirement for specific pathogen-free animal area.
- 3.5 Mice and rats with special dietary requirements (e.g. post operative period), can be provided with DietGel products to aid recovery. It is highly recommended for the study director to consult a veterinarian on the dietary requirements of the animal.