



Husbandry Statement

Overview

The Office of Animal Resources (OAR) in the Harvard University Faculty of Arts and Sciences manages 3 AAALAC-accredited barrier rodent facilities, the Biological Research Infrastructure (BRI), the Science & Engineering Complex (SEC), and Northwest Laboratories (NWL). BRI and NWL are used for breeding and experiments, while SEC is used only for experimental manipulations. All rodents are housed in individually ventilated Allentown caging.

Colony health surveillance has been performed quarterly in all animal rooms since the opening of each facility. Surveillance sample testing is performed primarily by Charles River. The most recent results of the colony health surveillance program for the BRI are available at: <http://oar-public.fas.harvard.edu/animal-health-reports>. Animals do not move from NWL to BRI without further health testing.

Animal housing, handling, and infection control measures

- Rodents are housed in solid-bottomed cages, bedded with contact bedding (typically wood chip or corncob), and all rodents are provided with enrichment (nesting material at a minimum, most also have plastic huts or tubes) as part of normal husbandry.
- The default is social housing for all compatible animals.
- In the facility, disinfecting and sterilizing compounds such as chlorine dioxide, quaternary ammonium compounds, hydrogen peroxide, and peracetic acid are used according to manufacturers' guidelines.
- Animals are housed in positively pressured individually ventilated caging that receives HEPA-filtered air.
- Cages, bedding, and cage furnishings are autoclaved after cleaning and prior to use.
- Standard rodent diet is irradiated. Special diets must be purchased through OAR and sterilized prior to arrival.
- Reverse osmosis deionized water is chlorinated at 2 ppm and typically provided via automatic watering.
- Cages are changed using microisolation technique in HEPA-filtered, laminar-flow workstations by dedicated staff.
- Dedicated clothing is worn by OAR staff and personal protective equipment (disposable gown, procedure mask, gloves) is worn by OAR staff and researchers when handling animals.
- Animals from the general population cannot exit and re-enter the facility without quarantine and testing. There is dedicated in/out space, separate from housing and breeding areas, for animals that must move between the facility and investigators' laboratories.

Animal entry and movement

Approved suppliers

Animals of known microbiological quality obtained from suppliers approved by OAR are allowed to enter directly into the barrier rooms. These approved suppliers include Charles River, the Jackson Laboratory, and Taconic; others may be added following veterinary review.

Other animal origins

To obtain animals from non-approved suppliers, an import request form must be submitted to and approved by OAR. This will initiate veterinary review of health and husbandry information from the facility of origin. All rodent shipments are coordinated by OAR. If approved for import directly into the facility, the animals will undergo quarantine in a dedicated suite and health monitoring by PCR. Additional testing may be requested before animals can be received. Animals are transferred to long-term housing rooms only after PCR results confirm the absence of excluded agents. Animals from non-approved suppliers may also be quarantined off-site and tested via PCR as above. Depending on results, animals may then be allowed to enter the facility without further quarantine or may need to be treated or rederived before entry.

Transfer within OAR-managed facilities

Transfer of animals between housing areas may not occur without prior permission from OAR facility supervisors and must be performed by OAR animal care staff.

Animal exports

To export animals, an export request form must be submitted to and approved by OAR. All live rodent shipments are coordinated by OAR following approval by the recipient facility.

Health monitoring program

Routine colony health surveillance

Routine colony health surveillance is performed quarterly in all animal rooms in both OAR-managed rodent facilities. Agent test frequency varies according to prevalence and potential risk; please see the Health Report for details of agents monitored and frequency of monitoring. Additional focused health monitoring can be conducted on an as-needed basis. Monitoring may be performed using PCR, sentinel monitoring, or any other relevant diagnostic test on colony or sentinel animals. Colony animals are not submitted for health surveillance without the investigator's permission.

Since March of 2015, all animal health monitoring has been performed by PCR of rack plenums and occasional testing of feces, fur swabs, and oral swabs from randomly selected colony animals.

Use of biological material of animal origin

Biological materials and cell lines of rodent origin or passaged in rodents must be tested and certified free of rodent infectious agents prior to use in animals.

If an excluded agent is detected

In the event an excluded agent is found in the facility, an appropriate course of action would be determined by the veterinary staff and may include a combination of tolerance of the agent, isolation, retesting, treatment, euthanasia, and/or rederivation.

Agents present in these facilities

Animals colonized by or originating from facilities with evidence of the presence of *Helicobacter* species, mouse norovirus (MNV), *Rodentibacter heylii*, *Rodentibacter pneumotropicus* (agents formerly classified as *Pasteurella pneumotropica* Jawetz or Heyl) or colonization by typical rodent commensal or opportunistic bacterial pathogens are not excluded.

The exception is animals destined for, or originating from, the Genome Modification Facility (GMF), which is free of the above agents, including typically monitored opportunists and commensals.

Current outbreak status (August 2022)

One room in the BRI and one room in NWL sporadically test positive for *Spironucleus muris* by environmental PCR on rack plenum dust. The facility is in the process of MuCPV (Murine chapparvovirus) eradication after a small number of positive cages were found on routine HM (health monitoring) in Spring 2022.