



**TITLE: Rodent Quarantine Program**

**SOP Category: Import/Export**

**RUAC SOP #: 8.03**

**Page: 1 of 3**

**Effective Date: 04/01/2025**

**Approval:**

*David C. Rein DVM*

**Revisions: 05/02/2022, 02/04/25**

**SCOPE:**

This SOP applies to all Animal Care Staff (ACS), ACS Supervisors (ACSS), Veterinary Staff (VS), Shipping Coordinator (SC), Principal Investigator (PI) and Research Staff members (RS) at the Rutgers New Brunswick, Piscataway, and Newark facilities.

**OBJECTIVE:**

This document describes the quarantine process for rodent (rat and mouse) shipments imported into Rutgers University animal facilities from non-commercial sources or non-approved vendors. (Reference RUAC Approved Vendor list for approved vendors that are exempt from this process).

**PROCEDURES:**

An import request from an external non-approved vendor is reviewed by the Shipping Coordinator (SC) and veterinarian (See Rodent Import SOP). The veterinarian recommends quarantine requirements for the proposed rodent shipment based on the health status of the animals being imported. Quarantine requirements consist of location, duration, agents being tested, and necessary prophylactic treatment. ACSS are notified of incoming shipments and their respective quarantine requirements to ensure adequate housing.

**Housing of Quarantine Animals:**

Upon shipment arrival ACS or VS, as needed, are responsible for unpacking quarantine rodents. (Reference Procedures for Receiving and Unpacking Animals). After unpacking animals into quarantine at the end of their shift, the individual responsible may not enter any other animal rooms in the same day. Research staff will not be permitted to enter quarantine or handle the animals until they are released to their designated animal rooms.

- ALL mouse imports are received to the centralized quarantine facility located in the Child Health Institute facility on the New Brunswick campus. The Associate Director overseeing the import/export program will direct all rat imports to a specific animal facility for quarantine.
- During quarantine, cages must be handled in order of cleanest to dirtiest health status.

## **TITLE: Rodent Quarantine Program**

**SOP #:8.03**

**Page 2 of 5**

- Animals are housed in the same groups in which they are received, and all cages are properly identified with RFID cage cards.
- Mouse imports of 8 cages or less are housed in static microisolator cages within isolation cabinets with cage changes performed once weekly for the duration of quarantine period.
- Imports of 9 or more cages may be housed in microisolator cages on dedicated IVC rack (where available) with cage changes performed weekly for the duration of quarantine period
- Rat imports are housed in static microisolator cages within a dedicated isolation room with cage changes performed twice weekly for the duration of quarantine period.
- Imported animals may need to be accommodated with special feed/diet/husbandry requirements while under quarantine. Special cage cards will be provided.
- Cages can only be opened within a functioning animal transfer station or certified BSL-2 hood; the hood must be cleaned thoroughly between each quarantine group using an approved disinfectant.

### **Breeding of Quarantine Animals:**

- Breeding of animals is NOT PERMITTED while under Quarantine.
- Breeding pairs, pregnant females, or unweaned litters are not permitted to be imported into quarantine unless approved by a veterinarian.

### **Quarantine period and Testing methods:**

- Standard quarantine period is approximately 3 weeks (21 days)
- Testing panels:
  - Mouse: Rutgers Mouse Quarantine Panel PRIA
  - Rat: Rutgers Rat Quarantine Panel PRIA or Rat Prevalent PRIA
  - Specific agent testing or alteration of standard quarantine panels may be used at the discretion of the veterinarian.
- Required sample collection period and sample types:
  - Method 1: Direct animal samples
    - are to be collected as soon as 72 hrs post arrival and not later than 7 days.
    - Pelt swabs—At a minimum, one animal from each arriving cage/crate partition should be tested. Up to 10 samples can be pooled and submitted as a single sample.
    - Feces – up to ten fecal pellets can be pooled and submitted as a single sample. At a minimum, one animal from each arriving cage/crate partition should be tested.
    - Oral swabs – The oral cavity is gently swabbed using a sterile cotton swab. 10 swabs can be pooled for one submission. At a minimum, one animal from each arriving cage/crate partition should be tested.
  - Method 2: Sentinel free soiled bedding media exposure (eg. Pathogen Binder™)

## **TITLE: Rodent Quarantine Program**

**SOP #:8.03**

**Page 3 of 5**

- Following the procedure as described in the Rodent Health Surveillance Program - Non-Sentinel Animal SOP, up to six (6) 30 ml (medicine cup) sized soiled bedding samples are collected from each shipping crate and combined into a Clean Shake Box containing 2 fresh absorbent media pads.
- The filter media exposure process to soiled bedding from the cage(s) is repeated during each scheduled cage change over a 1-week period.
- Following the final media exposure, media samples are prepared and submitted for testing.
- Additional testing (with veterinary discretion):
  - Blood is collected for serology using a HemaTIP™ for agents where PCR testing may not be as accurate. At a minimum, one animal from each arriving cage should be tested. Small, fragile animals or animals that may be distressed with handling and bleeding will not be tested.
  - Surveillance Plus or Comprehensive PRIA level testing panel may be required based on health status at the destination housing location.
  - For a more comprehensive PCR surveillance, samples may be collected on arrival and held for batched submission with samples collected following 1 week of quarantine
  - All international rodent importations (institutional or specialty vendors) are subject to Comprehensive PRIA level testing panel, at the discretion of the Veterinarian, prior to release from quarantine.

### **Extended Quarantine:**

Extended quarantine may be required for animal imported from high-risk external institutions. Institutions that have had excluded pathogen outbreaks within the last 6 months are considered high-risk.

- Extended quarantine is approximately 6-8 weeks.
- Prophylactic treatment for parasites
  - Animals may be fed a commercially available diet containing fenbendazole and/or ivermectin for the period of quarantine. If animals are sensitive to medicated feed or if medicated feed is contraindicated for research, an alternative antiparasitic may be used.
- Media exposure to soiled bedding (eg. Pathogen Binder™)
  - Following the procedure as described above, filter media exposures to soiled bedding is repeated with each cage change for the prescribed quarantine period.
  - Following the final exposure, media samples are prepared and submitted for testing.
- Sentinel animals
  - Non-contact sentinel animals may be placed for soiled bedding exposure. The sentinels will be provided soiled bedding from the shipping crate and

## **TITLE: Rodent Quarantine Program**

**SOP #:8.03**

**Page 4 of 5**

animal cages with each cage change following the procedures as described in the Rodent Health Surveillance Program - Sentinel Animal SOP.

- 6 weeks after arrival, the sentinels are euthanized with CO<sub>2</sub>, a gross necropsy is performed, and necessary samples (blood, feces, pelt swabs etc) are collected and submitted for testing.

### **Sick or Dead Quarantine Animals**

Any animal(s) that is visibly sick, dead-on arrival, or die during the quarantine period must be immediately reported to the SC and VS.

### **Release of Quarantine Animals**

- Once negative test results for excluded agents are received and approved by a veterinarian, the animals can be released to the destination animal facility.
- The SC provides email notification to the receiving PI/RS of the approval for release from quarantine including disclosure of any non-excluded agents identified through testing.
- Mice testing positive for excluded agents must be 1) used terminally in isolation and BSI-2 housing under the direction of VS, 2) rederived by embryo transplantation and documented free of the disease(s) before release, or 3) euthanized.

### **Costs of Services Rendered**

All quarantine costs are made available to the PI (or PI proxy/designee) for review and approval as part of the Ilabs import request process. The PI (or designee) is responsible for all costs (per diem, diagnostic testing and VS service time) accrued during quarantine.

### **REFERENCES:**

Procedures for Receiving and Unpacking Animals included in the Rodent Husbandry (Mice, Rat, & Hamster) SOP

RUAC Approved Vendor List

External Rodent Import SOP

Rodent Health Surveillance Program – Non-Sentinel Animal and Sentinel animal SOP

## **TITLE: Rodent Quarantine Program**

**SOP #:8.03**

**Page 5 of 5**

### **Excluded agents:**

- Mice -
  - Mouse Parvovirus (MPV 1-5 and MVM)
  - Minute virus of Mice (MVM)
  - Mouse Hepatitis Virus (MHV)
  - Theiler's Encephalomyelitis Virus (TMEV, GDVII)
  - Mouse Rota Virus / Epizootic Diarrhea of Infant Mice (MRV/EDIM)
  - Reovirus (REO)
  - Mouse Adenovirus (MAV)
  - Pneumonia Virus of Mice (PVM)
  - Sendai Virus (SEND)
  - Ectromelia Virus (Mouse Pox/ECTRO)
  - Poly (Polyomavirus)
  - Lymphocytic Choriomeningitis Virus (LCMV)
  - Hantavirus (HANT)
  - Murine Chapparrvovirus (MuCPV) /Mouse Kidney Parvovirus (MKPV)
  - Mycoplasma pulmonis (MPUL)
  - Corynebacterium bovis (CBOV)
  - Cryptosporidium
  - Fur mites (Myobia/Myocoptes/Radforia)
  - Pinworms (Syphacia obvelata, Syphacia muris(rat), Aspiculuris tetraptera)
- Rats -
  - Rat parvoviruses (RPV, H-1, KRV, RMV)
  - Sialodacryoadenitis virus (SDAV)
  - Theilovirus, (RTV)
  - Sendai virus (SEND)
  - Pneumonia Virus of Mice (PVM)
  - Reovirus (REO)
  - Adenovirus (MAV1 &2)
  - Mycoplasma pulmonis (MPUL)
  - Lymphocytic Choriomeningitis Virus (LCMV)
  - Hantavirus (HANT)
  - Fur mites (Myobia/Myocoptes/Radforia)
  - Pinworms (Syphacia obvelata, Syphacia muris(rat), Aspiculuris tetraptera)
- Helicobacter spp. and MNV, and RRV (Pneumocystis/PCAR) are excluded from select colony rooms.
- These lists are subject to change based on veterinary discretion based on pathogen prevalence