

**Standard Operating Procedure  
Rodent Health Surveillance Program  
Sentinel-Free Environmental Health Monitoring**

## 1.0 Scope and Application

A comprehensive health surveillance program is integral to contemporary laboratory animal programs. Successful health surveillance programs are designed to identify, control, and eliminate disease variables that affect research animals and thus compromise research. This SOP details the procedure for collecting, handling, and submitting samples for sentinel-free environmental health monitoring.

## 2.0 Summary of Method

Sentinel Free Environmental Health Monitoring (EHM) for mice, rats, voles, and gerbils will be submitted at least three times a year, specifically in April, August, and December.

	April	August	December
Mice	IDEXX Basic Panel	IDEXX Comprehensive Panel	IDEXX Basic Panel
Rats	IDEXX Prevalent Panel	IDEXX Comprehensive Panel	IDEXX Prevalent Panel
Voles	IDEXX Basic Panel + Lymphocytic Choriomeningitis	IDEXX Comprehensive Panel + Hantavirus	IDEXX Basic Panel + Lymphocytic Choriomeningitis
Gerbiles	Charles River Laboratory FSU Gerbil PRIA Panel	Charles River Laboratory FSU Gerbil PRIA Panel	Charles River Laboratory FSU Gerbil PRIA Panel

- All samples must be submitted and shipped to the diagnostic laboratory no later than the 15th of the respective month.
- Generally, one soiled-bedding collection cage can sample up to 80 colony cages within a designated room or rack. For instance, if a housing room contains 80 or fewer colony cages, regardless of whether they are distributed across multiple standard racks, only one soiled bedding collection cage is required.
- In rooms that contain both IVC and standard racks, a soiled bedding collection cage will be placed on each side of an IVC rack. A separate soiled bedding collection cage will also be provided for every 80 colony cages maintained on standard racks.
- In the case of double-sided IVC racks, one soiled bedding collection cage will be placed on each occupied side of the rack, regardless of the number of cages on each side.
- EHM will not be performed for animals housed in short-term studies (< 6 weeks).
- The EHM matrix will be exposed to soiled bedding pooled from each resident colony cage in their respective room or rack for a period not exceeding four months. Shorter exposure periods may be

required during disease outbreak investigations. Unless otherwise directed, weekend and holiday cage changes are exempt from the requirement.

- The EHM matrix cage changes should be conducted during the scheduled cage changes for the room or rack. If a room requires a spot change or cage changes are needed more than once a week due to the number of animals in a cage, EHM sampling will only be conducted once per week.
- To prepare the EHM cage:
  - Secure an empty cage meeting the room or rack's caging specifications. Ensure the correct lid is selected for the cage type.
  - Tear the EHM matrix package along the perforated edge and place two matrices in the empty cage with the fleece side facing upward. Two matrices are used per collection cage to provide a backup in case the shipped sample is damaged or lost, and for confirmatory testing in case of positive results.
  - The LAR veterinary technician will provide a cage card for each cage.
  - Place the EHM collection cage on the rack.
- Sampling Guidance (**Mice, Rats, Voles**):
  - Once the EHM matrices are in the appropriate caging and the room or rack is ready to be changed, follow the steps below.
    - For rooms or racks containing 1- 45 colony cages: Retrieve two ounces of soiled bedding from each soiled cage. Small, plastic two-ounce collection cups will be provided in each room.
    - For rooms or racks containing 46-80 colony cages: Apply two teaspoons of soiled bedding from each soiled cage. Disposable spoons will be provided in each room.
    - A new spoon or collection cup should be used for each EHM cage.
    - Once all cages assigned to the EHM collection cage have been sampled, cover the cage with the corresponding cage lid. Agitate the cage in a “stir-fry” motion for 15-30 seconds to ensure all bedding contacts the EHM matrices. Place the soiled EHM collection cage back on the shelf until the next scheduled room or rack cage change.
    - Husbandry technicians are responsible for dating and signing the EHM cage card for every room or rack cage change.
- Sampling Guidance (**Gerbils**):
  - Once the EHM matrices are in the appropriate caging and the room or rack is ready to be changed, follow the steps below.
    - For rooms or racks containing 1- 45 colony cages: Retrieve two ounces of soiled bedding from each soiled cage. Small, plastic two-ounce collection cups will be provided in each room.
    - For rooms or racks containing 46-80 colony cages: Apply two teaspoons of soiled bedding from each soiled cage. Disposable spoons will be provided in each room.
    - A new spoon or collection cup should be used for each EHM cage.
    - Once all cages assigned to the EHM collection cage have been sampled, cover the cage with the corresponding cage lid. Agitate the cage in a “stir-fry” motion for 15-30 seconds to ensure all bedding contacts the EHM matrices.

- Remove the sampling matrix from the EHM cage and place the matrix on a clean napkin.
  - Place the matrix in a clean cage without bedding and a microisolator lid. Return the cage to the shelf until the next scheduled room change.
  - Husbandry technicians are responsible for dating and signing the EHM cage card for every room or rack cage change.
- **Monitoring Period:**
    - During each room or rack cage change, agitate the EHM soiled collection cage for 15–30 seconds before transferring the existing EHM matrices into a clean collection cage.
    - Gloves must be worn when transferring EHM matrices from a soiled to a clean collection cage.
    - To transfer an EHM matrix, hold it by a corner and shake lightly to remove loose debris.
    - The EHM matrix does not need to be brushed off and can have some soiled material when placed into a new cage.
    - Ensure the fleece side faces up when putting the EHM matrix in a new collection cage.
    - Once the EHM matrices are transferred, the room or rack change can be completed.
  - In the event the EHM matrices become damp, contact the veterinary staff.
  - At regular intervals (every four months unless increased surveillance is required), EHM will be collected by the veterinary technician and packaged for shipping to the diagnostic lab.

### Pathogens Excluded by Species

#### Mice

- **Endoparasites (pinworms):**
    - *Aspiculuris tetraptera*
    - *Syphacia muris*
    - *Syphacia obvelata*
  - **Ectoparasites (fur mites):**
    - *Myobia*
    - *Radfordia*
    - *Myocoptes*
  - **Viruses:**
    - MHV (Murine Hepatitis Virus)
    - MPV (Mouse Parvovirus)
    - LCMV (Lymphocytic Choriomeningitis Virus)
    - Sendai Virus
    - EDIM (Epizootic Diarrhea of Infant Mice)
    - TMEV (Theiler's Mouse Encephalomyelitis Virus)
    - Mouse Pox (Ectromelia virus)
    - PVM (Pneumonia Virus of Mice)
    - Mouse Reovirus (REO3)
    - Minute Virus of Mice (MVM)
  - **Bacteria:**
    - *Helicobacter bilis*
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#### Rats

- **Endoparasites (pinworms):**
  - *Aspiculuris tetraptera*
  - *Syphacia muris*
  - *Syphacia obvelata*
- **Ectoparasites (fur mites):**
  - *Myobia*
  - *Radfordia*
  - *Myocoptes*
- **Viruses:**
  - LCMV (Lymphocytic Choriomeningitis Virus)
  - RPV (Rat Polyomavirus)
  - PVM (Pneumonia Virus)
  - RCV (Rat Coronavirus)
  - SDAV (Sialodacryoadenitis Virus)
  - REO3 (Reovirus)
  - Sendai Virus
- **Bacteria:**
  - *Helicobacter bilis*