

SENTINAL RODENT HEALTH MONITORING PROGRAM

I. Purpose

- A. To outline the proper procedures for exposing sentinel rodents to soiled bedding.
- B. To define the microbial status of rodent colonies, surveillance is conducted for subclinical and clinical diseases that could jeopardize the validity and reproducibility of research data, or complicate its interpretation, or cause zoonotic concerns.

II. Responsibility

- A. The veterinarians oversee all aspects of animal health, and are assisted by LARAC staff.
- B. The facility manager is responsible for ensuring that all animal care staff are adequately trained and experienced in sentinel rodent health procedures.
- C. The clinical veterinarian is responsible for coordinating these sentinel rodent health procedures, submitting samples for evaluation, recording results, and reporting findings to the attending veterinarian.

III. Procedures

- A. Monitor only populations housed for more than 4 weeks.
- B. Use females (BALB-C for mice, Long Evans for rats) as sentinels, starting at about 4-8 weeks old, at the beginning of the monitoring period.
- C. To maximize exposure to potential infectious agents, all sentinel rodents are housed on soiled bedding obtained from other cages on the same housing rack. A teaspoon of soiled bedding from one row of cages will be added to the sentinel cage at each changeout. LARAC staff will start sampling at the top of the rack and work down during changeouts. When the bottom of the row has been reached, sampling will begin again at the top and continue in the above manner until sentinels are taken for testing. Sentinels will be housed in the same manner as the population, and will receive the same bedding, food, and water.
- D. Contaminate and sample a minimum of two sentinels per cage. More sentinels can be housed in the same cage to serve as backups.
- E. One sentinel cage housing 2-3 mice can monitor up to 100 rodents. The number of sentinels is based on the historic infection rate (currently at zero) for the SPF rodent colonies.
- F. Contaminate sentinel cages at every bedding change.
- G. Collect blood from sick sentinels, and conduct histopathology on sick and dead sentinels.

- H. Veterinarians conduct quarterly sentinel health evaluations assisted by the animal care staff. These health evaluations consist of evaluation for endoparasites, serology, and gross necropsy/histopathology. If test results are positive, the veterinarian will develop a plan for additional testing to determine the extent of the infestation/infection.
1. Each sentinel is bled and evaluated for serum antibodies using a comprehensive serological profile submitted to RADIL.
 2. Each sentinel is euthanatized and submitted to gross necropsy evaluation, visual examination of the cecum and intestine for endoparasites, and histological examination.
 3. Fecal pellets from selected mouse rooms will be collected, pooled and submitted to RADIL for Helicobacter PCR.
- I. The Comprehensive Panel Includes:
1. Rats
 - a. Cilia associated respiratory (CAR) bacillus
 - b. Hantaan
 - c. Lymphocytic choriomeningitis virus (LCM)
 - d. *M. pulmonis*
 - e. Mouse adenovirus strain 1 (MAD 1)
 - f. Parvo NS-1
 - g. H1 (Toolan's H-1 – a rat parvovirus)
 - h. Kilham's rat virus (KRV)
 - i. RMV
 - j. RPV
 - k. Pneumonia virus of mice (PVM)
 - l. Rat coronavirus/sialodacryoadenitis (RCV/SDAV)
 - m. Reovirus type 3 (REO3)
 - n. Sendai
 - o. TMEV-like virus
 - p. Tyzzer's
 2. Mice
 - a. Ectromelia
 - b. Epizootic diarrhea of infant mice virus (EDIM)
 - c. Lymphocytic choriomeningitis virus (LCM)
 - d. *M. pulmonis*
 - e. Mouse adenovirus strain 1 (MAD 1)
 - f. Mouse adenovirus strain 2 (MAD 2)
 - g. Mouse hepatitis virus (MHV)
 - h. Murine norovirus (MNV)
 - i. Parvo NS-1
 - j. Mouse parvovirus (MPV)
 - k. Minute virus of mice (MVM)
 - l. Polyoma
 - m. Pneumonia virus of mice (PVM)
 - n. Reovirus type 3 (REO3)
 - o. Sendai

p. (Theiler's murine encephalomyelitis virus (TMEV GDVII))

J. Reporting Test Results

1. Promptly email the principal investigators all positive or equivocal results.
2. A hard copy of all results will be filed in the LARAC office in the sentinel log book.
3. Historical data are kept by LARAC a minimum of 12 months.