



**Florida State University
Laboratory Animal Resources**

**Standard Operating Procedure
Rodent Health Surveillance Program**

1.0 Scope and Application

A comprehensive health surveillance program is an integral component of contemporary laboratory animal programs. Successful health surveillance programs are designed to identify, control, and eliminate disease variables that affect research animals and thusly compromise research. Indirect contact rodent sentinels will be purchased, housed, and necropsied to determine the health of colony rodents.

2.0 Summary of Method

- Naïve, 3–4-week-old, female, outbred rodents will be purchased from an LAR-approved rodent vendor.
- Upon arrival, animals will be pair housed in freshly bedded, micro isolator cages and provided care consistent with husbandry practices of resident colony animals. All sentinels will be provided environmental enrichment, including a new nestlet at each cage change.
- Generally, one sentinel cage (two animals) will be used to sample up to 80 colony cages within a designated room or rack. As an example, if the housing room contains 80 or less colony cages, although cages may be housed on multiple racks within the room, only one sentinel cage is needed for the room. In the case of double-sided IVC racks, one sentinel cage will be placed on each occupied side of the rack. Sentinel cages will be placed on the lowest shelf of the rack to maximize potential pathogen exposure and must be clearly labeled.
- Sentinel animals will not be provided for animals housed in short-term studies (≤ 6 weeks).
- Sentinel animals will be exposed to soiled bedding pooled from each resident colony cage on their respective rack (or room) 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 aforementioned requirement.

- Static sentinel cages will be changed once weekly. Individually ventilated sentinel cages will be changed once every other week. Sentinel cage changes should occur during scheduled cage changes for the room or rack.
- To prepare the sentinel cage:
 - Begin with a clean, unbedded cage
 - To the unbedded cage, using a disposable teaspoon, add soiled bedding, including feces and nesting material, from each cage in the room or rack. No more than 80 colony cages should be sampled per sentinel cage. As a general rule, for rooms or racks containing 50-80 colony cages, one teaspoon of soiled bedding from each colony cage is appropriate. For rooms or racks containing 20-49 colony cages, two teaspoons of soiled bedding from each colony cage is appropriate. For rooms or racks containing ≤ 19 colony cages, three teaspoons of soiled bedding from each colony cage is appropriate.
 - Add fresh bedding to the sentinel cage, if required, to achieve the bedding volume used routinely for LAR cages. Do not over-bed sentinel cages. Animals must be provided enough vertical space to make normal postural adjustments.
 - Mix the contents of the sentinel cage with a disposable spoon. The sentinel cage should appear dirty.
- In the event flooding is noted in a sentinel cage, animals must be placed in a clean, freshly bedded cage.
- Sentinel animals must be observed daily by LAR personnel. Any observed abnormalities must be reported to an LAR veterinarian through submission of a Clinical Case Request form. Following receipt of the Clinical Case Request, the animal will be evaluated and an appropriate treatment course will be determined and initiated.
- Care for sentinel animals should be provided after all other animals in the room have been serviced.
- At regular intervals (every four months unless increased surveillance is required), animal feces and cage swabs will be collected from sentinel animals for PCR analysis. Animals will then be anesthetized using inhalational isoflurane or carbon dioxide and blood will be collected via the retro-orbital sinus, maxillary/facial vein, or heart for serological analysis. Following blood collection, animals will be euthanized by isoflurane or carbon dioxide overdose. Death will be ensured by cervical dislocation. Thoracotomy will be used to ensure death in rats $>200g$.
- Once yearly, live animals may be submitted to an outside vendor for necropsy and diagnostic evaluation.
- At the discretion of the attending veterinarian, in consultation with other LAR personnel, the use of environmental samples for PCR analysis may also be considered.

3.0 Definitions of Method

Approved vendors include Charles River, Jackson Labs, and Envigo.

Revision History

Approved: May 15, 2018

Revised: June 25, 2018

Revised February 12, 2021