

William S. Middleton Memorial Veterans Hospital
Animal Research Committee Policy #02-13

Use of Sentinel Animals

Policy: The use of sentinel animals provides an effective means of monitoring populations of experimental animals for infectious disease pathogens. Sentinel animals are housed in the same room with experimental animals and are exposed to the same environmental factors. After a period of exposure to the experimental animals, a sentinel animal is sent to a diagnostic laboratory to be examined for infectious agents. This method of surveillance and diagnosis avoids researchers having to give up experimental animals.

Procedures: Quarterly, 3-4 week old sentinel animals are acquired from an approved vendor. If the health report from the vendor accompanying the animals certifies them as Specific-Pathogen-Free, they are immediately dispersed to appropriate housing rooms. Smaller rooms (~80 cages or less) will contain one sentinel cage with two animals. Larger rooms will have an additional sentinel cage and more than sentinel animal will be tested.

The sentinel animals remain in the housing rooms for up to 12 weeks. Most animals are housed in cages without micro-barrier lids to expose them to ambient room air and are placed among other cages on the animal racks. Sentinel animals for cages that are changed under the hood will have micro-barrier lids. During weekly cage changing, a clean cage with ½ the normal amount of bedding is used. A small amount of soiled bedding from each cage on two scheduled shelves will be mixed with the clean bedding. This mixture of soiled and clean bedding is used as the bedding for sentinel animals, ensuring exposure to any pathogens the colony may have. The sentinel cage will then be rotated to the next shelf and the following week soiled bedding from the next two scheduled shelves will be added to the sentinel cage. Additionally, any single-housed sentinel receives a nestlet for enrichment purposes.

After a minimum of 12 weeks has elapsed, a representative sentinel (or sentinels if there are more than 80 cages in a room) will be transported to the UW Research Animal Resource Center (RARC) for evaluation, including serology testing, parasitology testing, skin examination, and necropsy. Histopathology testing will be performed if requested by the veterinary pathologist. Serology tests will be run on each blood sample. Any unused sentinels older than 18 weeks will be euthanized to avoid the increased chance of false positive results that are more common in older animals.

Responsibilities:

1. Role of the Veterinary Medical Consultant (VMC) and Animal Research Facility (ARF) Staff

The Animal Research Facility Supervisor is responsible for implementing the sentinel animal program, for which the day-to-day details are carried out by the ARF staff. The VMC is responsible for evaluating the results of diagnostic tests performed on sentinel animals and for making recommendations regarding groups of animals found to be harboring an infectious disease.

Questions: Any questions on this policy should be directed to the A.O. (280-7222).

References:

- *Guide for the Care and Use of Laboratory Animals*, NRC, 2011.
- Laber-Laird K, Proctor M. An example of a rodent health monitoring program. *Lab Animal* 9/93, pp. 24–27, 1993.

Effective date: Part of this policy was approved at the ARC meeting on 10/25/99; Subsequent updates and approvals 11/27/01; 08/03; 03/10/08, 7/13/2009, 3/08/2010, 1/11/2011, 1/09/2012, 11/06/2013.