

Animal Health Services: Rodent Health Surveillance Techniques

Surveillance Techniques

Surveillance on all mouse rooms is performed on a quarterly basis. Surveillance on all rat, guinea pig and other rodent rooms is typically done semi-annually. Sentinel animals in microisolator cages are placed in the rooms with the research animals. Each investigator is surveyed separately at a rate of two sentinels per ½ rack (approximately 50-70 cages). Small amounts of soiled bedding from all cages are placed in the sentinel cages at the time of routine cage changing (weekly or bi-weekly).

In mouse rooms, sentinels are placed for Quarters 1 and 3, and remain in the rooms for approximately 6 months. Approximately 8 weeks after placement, samples for PCR testing are collected from sentinel mice and send to an external lab for quarterly testing. In Quarters 2 and 4, the sentinels are euthanized, and samples are collected for testing. In rat rooms, sentinels are placed and euthanized for testing in Quarters 1 and 3.

Sentinel animals are euthanized by CO₂ inhalation and blood is collected for in-house serology testing. Samples for pinworm PCR testing are also collected and sent to an external laboratory.

For Guinea pigs, PCR testing is used to determine their health status. Non-invasive samples are collected directly from the colony animals and sent to an external lab for testing. Currently, we consider the following in our SPF status and are testing for the following pathogens:

Mice: Quarterly: **EDIM (Rota), MHV, MPV, MVM, Pinworms**
 Semi-annually: **Quarterly tests plus Ectro, GDVII (TMEV), LCMV, MAV, Mpul, NS-1, Poly, PVM, REO, SEND**

Rats: Semi-annually: **GDVII, H-1, KRV, LCMV, MAV, Mpul, NS-1, PVM, REO, RPV, RVM, SDAV/RCV, SEND, Pinworms**

Guinea pigs: Semi-annually: **GPAV, LCMV, PVM, REO, SEND**

Fur mites: environmental testing for these parasites is performed three times each year (February, June, and October) in all mouse and rat rooms on campus.

We do not perform routine testing for helicobacter or MNV at this time. It should be assumed that animals are positive for these pathogens.

There is also a quarantine program for incoming shipments of animals from other institutions or non-approved vendors that is comprised mostly of mice and rats. Mice are evaluated for their Semi-annual list of pathogens plus the Hantaan virus and fur mites. Rats are evaluated for their Semi-annual list of pathogens plus fur mites. For all species, PCR testing is used to determine their health status. Non-invasive samples are collected directly from the colony animals and sent to an external lab for testing. All diagnostic tests must indicate negative status before quarantined animals can be released into any of the animal rooms within the facility.

State-of-the-art Multiplex Fluorometric ImmunoAssay™ (MFIATM) testing is used for the mouse and rat sentinels in the facility. Services are also provided for any non-routine testing that may occur throughout the year. A description of the virus acronyms is listed below.

Additional information can be provided by the Rodent Health Surveillance Team.
Email: ULAM-RHST@umich.edu, Phone: 734-936-1699

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Mouse

1. **ECTRO**- Ectromelia virus/Mouse Pox
2. **EDIM (Rota)**- Epizootic Diarrhea of Infant Mice
3. **LCMV**- Lymphocytic Choriomeningitis Virus
4. **MAV**- Mouse Adenovirus
5. **MHV**- Mouse Hepatitis Virus
6. **MMV**- Mouse Minute Virus
7. **MPUL**- *Mycoplasma pulmonis*
8. **MPV**-Mouse Parvovirus
9. **NS-1**- Antigen common to all parvoviruses
10. **POLY**- Polyoma Virus
11. **PVM**- Pneumonia Virus of Mice
12. **REO**- Reovirus
13. **TMEV(GD-7)**- Theiler's Murine Encephalomyelitis Virus
14. **SEND**- Sendai Virus
15. **HTN**- Hantaan Virus

Rats

1. **KRV**-Kilham Rat Virus
2. **LCMV**-Lymphocytic Choriomeningitis Virus
3. **MAV**-Mouse Adenovirus
4. **MPUL**-*Mycoplasma pulmonis*
5. **PVM**-Pneumonia Virus of Mice
6. **REO**-Reovirus
7. **RPV**-Rat Parvovirus
8. **NS-1**-Antigen common to all parvoviruses
9. **SDAV**-Sialodacryoadenitis Virus
10. **SEND**-Sendai Virus
11. **TMEV(GD-7)**-Theiler's Murine Encephalomyelitis Virus
12. **RMV**-Rat Minute Virus

Guinea pigs

1. **GPAV**- Guinea pig Adenovirus
2. **LCMV**-Lymphocytic Choriomeningitis Virus
3. **PVM**-Pneumonia Virus of Mice
4. **REO**-Reovirus
5. **SEND**-Sendai Virus