

## MMRRC-UNC Animal Health Program Description

The MMRRC at UNC is committed to maintaining high quality standards in animal care by the implementation of our animal health program. We monitor the health of our animals via routine and extensive testing for excluded agents. Rederivation of all lines prevents the entry of infectious agents. The state of the art microisolator caging and strict adherence to rigorous sterile technique prevents the transmission of agents between cages. The MMRRC at UNC understand that knowing testing methods and their frequency is just as important as the actual health status. The MMRRC at UNC aims to communicate the details of our animal health program clearly so our customers can have confidence in the health status of the mice they receive. The MMRRC at UNC has 10+ years experience in producing vendor quality animals and our animals are considered to be such by many institutions nationwide.

All animals are sent to Charles River Diagnostic Laboratory for health testing. Charles River Diagnostic Laboratory is located in Wilmington, MA ([www.criver.com](http://www.criver.com)). Serology is tested via Multiplex Fluorescent Immunoassay (MFI) and Immunofluorescent Assay (IFA). Helicobacter species are tested for via PCR on fecal/cecum samples. Microbiological tests are performed on fecal/oral swabs. Pelts, fecal/cecal samples are examined for parasites. The MMRRC at UNC health testing is consistent with Federation of European Laboratory Animal Science Associations (FELASA) guidelines. [www.felasa.eu](http://www.felasa.eu) Additional testing can be arranged. Please contact [mmrrc\\_health@med.unc.edu](mailto:mmrrc_health@med.unc.edu) for more information and price quotes. All animals sent to Charles River Diagnostic Laboratory are shipped via Transportech (<http://www.transportech.com>) with a dedicated van (to/from the airport).

Health reports are available to all customers as PDF's and are updated as soon as new results are available. They can be sent via email. Health report documents are the summary of the results of all animals tested within a certain area. For all resuscitated litter orders, the Production Colony Health Report and the Embryo Transfer Room Health Report are sent to customers. For all live mice orders, the Production Colony Health Report and the appropriate Strain Health Report are sent to customers.

Our Production Colony is not axenic, but possess a known flora. Mice are allowed to have the following agents:

- Altered Shaedler Flora
- Dimorphic Yeast
- Mold
- Aerobic Spore Forming Bacteria
- Anaerobic Spore forming Bacteria
- Cocci Bacteria (excluding Staphylococcus aureus)

Our production colony is populated via rederivation only. Importation of animals from outside sources is not allowed.

The MMRRC at UNC Production Colony's health status is monitored via testing dirty bedding sentinels, surrogate mothers, retired breeders, cull animals and monthly microbiological testing. This is done to ensure the health status accurately represents the colony and the mice that are sent to customers. All animals tested are of sufficient age and exposure. The age of animals tested ranges from 4 weeks to retired breeders (typically 8-12 months old). This meets FELASA recommendations.

### Dirty Bedding Sentinels

Our dirty bedding sentinels are Swiss Webster (Taconic) mice bred in the production colony. Every 5 generations, Swiss Webster stock is rederived via embryos from Taconic stock animals. Swiss Webster mice were selected due to their availability, their ability to seroconvert to a wide variety of viral pathogens and their dissimilar coat color.

Sentinel animals are housed on the bottom row of all racks. Mice are placed at 3 weeks of age and tested at 16 weeks. They are exclusively exposed to dirty bedding from all cages on the same side of their rack (up to 68 cages). There are 2 mice per sentinel cage and 2 sentinel cages per each side of the rack.

All dirty bedding sentinels are tested on a quarterly basis (February/May/August/November). Redundant sentinels are kept for confirmatory testing if necessary and euthanized when health report results are published. New 3 week-old dirty bedding sentinels are placed every 3 months.

In addition to the MMRRC-UNC dirty bedding sentinels, the Department of Laboratory Animal Medicine (DLAM) tests another set of sentinels. These dirty bedding sentinels are identical to the MMRRC-UNC sentinels. DLAM sentinels are supplied by the MMRRC-UNC colony of SW/Tac mice. Mice are placed at 3 weeks of age and tested quarterly. DLAM sentinels are housed in the cage next to the MMRRC-UNC sentinels and are treated in an identical manner. DLAM staff in the Diagnostic Laboratory processes sentinels. Serum and fecal/cecum samples are sent to RADIL ([www.radil.missouri.edu](http://www.radil.missouri.edu)) for serology and helicobacter PCR. DLAM Diagnostic Laboratory performs endo/ectoparasite exams, helicobacter PCR and microbiology testing.

### Surrogate Mothers

All surrogate mothers from all successful embryo transfers are sent for health testing on a monthly basis. All are tested for all agents (click here for a list of agents tested). Embryo transfers are done to fulfill resuscitated litter orders and to rederive all lines donated to the MMRRC. All rederivations of donated lines are tested for Murine Parvo Virus (MPV) via PCR of mesenteric lymph nodes/spleen in addition to the serological testing. All rederived litters are housed in a holding room (Embryo Transfer Room) until their health status can be confirmed. Once surrogate mothers are proven free of all agents, litters are moved to the production area. If the surrogate/foster mother is not available for testing, a wild type littermate will be sent instead.

### Retired Breeders and Cull Animals

In addition to the dirty bedding sentinels sent, retired breeders and cull animals are used to monitor the health status of all strains offered as live mice. Animals from each strain are selected at random from all racks that the strain occupies. Retired breeders and cull animals are tested on a quarterly basis (February/May/August/November) along with the dirty bedding sentinels. All retired breeders and cull animals are tested for the full list of agents.

### In House Flora Testing

In addition to the comprehensive microbiological testing done at RADIL, we also monitor the flora of colony in house. Fecal pellets and oral swabs are taken monthly. At least 4 cages (chosen randomly) per side of every rack are tested. The MMRRC-UNC lab processes samples. Microbial evaluation is done using general growth, selective media and gram staining. The UNC Department of Laboratory Animal Medicine Diagnostic Laboratory does identification of all organisms. At least 2 identification systems and an outside lab confirm detection of an unaccepted organism. Confirmation of a positive result for an excluded organism is followed by a "test and cull" program to eliminate the organism. Results are available upon request.