

University of Wisconsin-Madison Biomedical Research Model Services (BRMS)
BRMS Mouse Breeding Core SMI-Bardeen Facility

Husbandry and Health Status

Overview: The BRMS Mouse Breeding Core facility at the SMI-Bardeen building is considered a Level 1 facility by our [established designation system](#). Mice must come from approved vendors (Jackson labs, Taconic, Charles River and Envigo) or be rederived into the core. Rederivation may occur on campus through the UW-Madison Genome Editing and Animal Models Core [GEAM](#) or through a vendor service.

Mice are SPF for: Ectromelia, EDIM, LCMV, MAD1, MAD2, MHV, MPV, Parvo NS-1, MVM, M. pulmonis, Polyoma, PVM, REO3, Sendai, TMEV, MNV, C. bovis and helicobacter.

Housing/Husbandry: Mice are housed in aseptic, disposable, ventilated Innovive® cages. All cages are irradiated. All mice receive irradiated ALPHA-Dri™ bedding. All mice receive autoclaved AlphaTwist® nesting material for enrichment. Igloos are provided to breeding cages and singly housed mice. Mice are fed 2920x or 2919 (Irradiated Harlan Teklad Global Soy Protein-Free Extruded Rodent Diets). Breeder mice receive approximately 2 tablespoons of irradiated sunflower seeds in feeder at bi-weekly cage changing. Water is acidified. All work is done under animal transfer stations or biological safety cabinets. Rooms are maintained at 22°C (+/-2°C) and at 30-70% humidity. Lighting is on a 12-hour light/12-hour dark cycle.

Facility Equipment: The Breeding Core vivaria consist of 15 animal rooms and four procedure rooms totaling, 11,431 square feet. There are 45 ventilated Innovive® mouse racks throughout the facility that can house up to 7000 cages of mice and 15 animal transfer stations. For work with biological hazards, the core has five biological safety cabinets. The facility also has two fume hoods, two autoclaves, one rack-washer, -80 freezer, 3 anesthesia machines, 2 microscopes, a centrifuge and sonicator bath.

PPE/Sanitation: Lab coats are required to enter rooms. Tyvex® sleeves and gloves are required to work with mice. Veterinary approved disinfectants are used on all surfaces and while working with the animals. Floors are cleaned with a disinfectant at least 3 times per week.

Sentinel Program: Until Q1 2025, outbred mice are utilized in a dirty bedding sentinel program. Sentinels are housed in dirty cages from random sampling rows for approximately 12 weeks. Diagnostic testing occurs quarterly through Charles River. Mice are tested serologically for the following pathogens quarterly: Ectromelia, EDIM, LCMV, MAV1, MAV2, MHV, MNV, MPV, MVM, Mycoplasma pulmonis, Polyoma, PVM, REO3, Sendai and TMEV. PCR for Helicobacter, pinworms and fur mites is done quarterly. C.bovis is tested quarterly via PCR swabs for all immunocompromised colonies.

Starting Q2 2025, this facility uses a sentinel-free soiled bedding system, Idexx BioAnalytics REPLACE®.

Diagnostic testing occurs quarterly, as follows:

Quarter 1: Mycoplasma, Ectromelia, Polyomavirus, PVM, Parvovirus, REO, MNV, Sendai, MPV, MAV-2, MAV-1, MVM, LCMV, K-virus, EDIM, MHV and RTV; Helicobacter and Mite/Pinworm PCR. C.bovis PCR (immunocompromised only).

Quarters 2, 3 and 4: Mycoplasma, EDIM, LCMV, MVM, MHV, MPV, MNV, Parvovirus, RTV. Helicobacter and Mite/Pinworm PCR. C.bovis PCR (immunocompromised only).

Overall Health Status History:

2022:

Room 658D (outside of facility in isolation hallway):

- 2/15/2022: MNV positive (1 side of 1 rack, 1 sentinel MFIA positive)
- 5/20/2022: MNV positive (1 side of 1 rack, 1 sentinel MFIA positive)
 - As of 09/14/22 this room is being depopulated through removal of mouse lines and cross fostering.
- 10/10/2022- present: no positives detected

Room SMI-Bardeen 621

- 5/20/2022: MNV positive (1 rack, 1 sentinel MFIA positive)
- 10/7/2022: MNV positive (pooled PCR of mouse colony located on rack 1 sampled)
- 10/28/2022: Two colonies housed on separate racks, in affected room, tested MFIA negative
- 12/5/2022: MNV positive (1 rack, 1 sentinel MFIA positive)
 - 12/20/22: CRL Pathogen binder results negative via PCR; run simultaneously with sentinels on 12/5/2022.
 - Rack of affected animals isolated to room 623 and individual colony animals tested (MFIA and PCR) – see 2023 results
- 12/28/2022: MNV negative via PCR testing of hood and rack
- 01/09/2023: Colony animal results were all negative (breeders only tested, all holding animals moved to another facility)

2023: No excluded pathogens detected

2024:

Room SMI-Bardeen 623

- 7/30/2024: MNV IN on MFIA, negative IFA. (Rack 1, sample #40). Room placed on hold, no movement of mice in or out.
- 8/8/2024: MNV positive (Rack 1, sample #40 back-up).
- 8/22/2024: All 37 breeder cages tested serologically and colonies pooled for PCR testing.
 - One colony (4 cages) tested MFIA/IFA positive and 1 pooled PCR positive.
 - Positive colony animals sent for rederivation.
- 10/18/2024: MNV positive (samples 41, rack 1); Equivocal (sample #45, rack 3)
- 11/1/2024: Retest results of back up samples= MNV IN on MFIA, negative IFA
- 11/13/2024: All cages tested serologically for MNV, samples sent to Idexx and CRL.
 - Results from both labs indicate two cages (samples #52 and 54) are positive for MNV and CRL flagged one cage (#32) as equivocal.
 - Positive cages moved to another vivarium; equivocal cage euthanized.

Questions? Please contact the following:

Emma Sweet, DVM

RARC Facility Veterinarian
Office of the Vice Chancellor for Research
1-608-896-3692 easweet2@wisc.edu

Jody Peter BS, CVT

Director of Research Services, BRMS Breeding Core
1-608-712-9874 jody.peter@brms.wisc.edu