



MMRRC at UNC Special Collection Production Facility Description & Health Status Collaborative Cross Collection – Systems Genetics Core Facility (SGCF)

NOTICE: *The following describes the SGCF facility for the distribution of Collaborative Cross Collection only. For all other MMRRC-UNC mice and products, please see information above under MMRRC-UNC Production Facility.*

Collaborative Cross strains distributed through MMRRC at UNC

The University of North Carolina-Chapel Hill is fully accredited by the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC International).

The Systems Genetics Core Facility (SGCF) is responsible for maintaining the Collaborative Cross (CC) special collection. The SGCF is committed to maintaining high quality standards in animal care through implementation of careful standard operating procedures and extensive health surveillance testing. All husbandry and testing are overseen by UNC's Division of Comparative Medicine (DCM), with all samples sent to IDEXX BioAnalytics in Columbia, MO (indexxbioanalytics@idexx.com) for analysis.

The majority of CC strains (58 of the 63 distributed strains) are located in DCM's highest health status **Barrier Facility**, while 5 of the strains are only currently available from a **Specific Pathogen Free (SPF)** facility (see below for strain list).

For **both facilities**, entrances are locked via card key readers and restricted to husbandry and SGCF staff. If husbandry or SGCF staff is responsible for more than one room, a room order from "cleanest to dirtiest" is followed. All personnel must don protective clothing to enter the facility (see below for facility-specific PPE). All mice are housed in Techniplast individually ventilated caging (Green Line IVC Sealsafe PLUS) in positive pressure rooms. All bedding, water bottles, cardholders, nestlets, enrichment huts, and food are autoclaved. All mice are checked daily by DCM staff. DCM Veterinary Services oversees health issues that may arise.

All mice are changed and handled using sterile technique in Class II biosafety change stations. All change stations are wiped down before and after every use with Peroxiguard. All staff must spray down their gloves before working in the change station and between cages.

Sentinel animals housed in the animal room are exposed to dirty bedding from every cage on the same rack (up to 69 cages) on a weekly or biweekly basis depending upon cage changing frequency. There are 2 mice per sentinel cage per side of rack. At 3-month internals, mouse blood spot testing (Opti-Spot) is performed with one of the sentinels in each cage, with the second mouse serving as a backup or to confirm the presence of a potential pathogen detected in the first mouse. Exhaust Air Dust (EAD) sampling and PCR testing is utilized for detection of select internal and external parasites. See below for facility-specific descriptions of Opti-Spot (serological) and EAD (environmental) testing.

SGCF Barrier Facility Rooms:

For the **Barrier Facility**, only re-derived or vendor mice of high barrier status are allowed into this barrier. Protective shoe covers are donned while stepping over the vestibule threshold onto a TechTrak contamination control floor mat (techtrakllc.com). Once in the vestibule, full coveralls, masks, caps, and gloves are donned. Any materials, equipment, and supplies must be decontaminated through a misting tunnel or bagged and manually sprayed down with Peroxiguard.

For the Barrier Facility, External Air Dust (EAD) testing of all IVC racks is performed every 3 months using “**UNC Hayes PCR Panel C**” (PCR evaluation for pinworms, fur mites, *C. bovis*, and *Helicobacter spp.*, and *Pasteurella pneumotropica*). Serological testing of sentinels is also performed every 3 months. Three times a year, sentinels are tested using “**UNC Mouse Serology Profile I Plus**” (or “**M1P**”), a serological testing panel for antibodies against EDIM, GD VII (TMEV), MHV, MPV, MVM, and MNV. Once yearly, the serological testing is expanded to “**UNC Mouse Serology Profile II Plus**” (“**M2P**”), which is the M1P panel expanded to also include *Mycoplasma pulmonis*, PVM, Sendai, CARB, LCMV, Ectromelia, MAdV-1, MAdV-2, MCMV, Polyoma, MNV, and Reovirus.

Since the facility was opened in 2010, there has not been an outbreak of excluded pathogens.

SGCF Specific Pathogen Free (SPF) Facility:

For the **SPF Facility** (strains: CC021/Unc, CC038/GeniUnc, CC053/Unc, CC062/Unc, and CC081/Unc), mice are also housed in IVC caging. This room is designated as sterile caging (described above). All water supplied to animals is treated by R/O and all personnel entering must don protective clothing (gown, cap, gloves) before entering animal rooms. Most arriving animals are received directly from approved vendors. Animals arriving from other sources must pass quarantine and test free of excluded agents.

External Air Dust (EAD) testing of all IVC racks is performed every 3 months using “**UNC EAD PCR**” (PCR evaluation for pinworms and fur mites). Once a year EAD testing is expanded to “**UNC Hayes PCR Panel C**” (which additionally tests for *C. bovis*, *Helicobacter spp.*, *MNV*, and *Pasteurella*). Serological testing of sentinels is also performed every 3 months. Twice a year, sentinels are testing using “**UNC Mouse Serology Profile I**” (or “**M1**”), a serological testing panel for antibodies against EDIM, GD VII (TMEV), MHV, MPV, and MVM. Once yearly, the serological testing is expanded to “**UNC Mouse Serology Profile I Plus**” (or “**M1P**”), which includes expands the M1 panel to include MNV. For the fourth cycle, the panel is further expanded to “**UNC Mouse Serology Profile II Plus**” (“**M2P**”), which expands the M1P panel to also include *Mycoplasma pulmonis*, PVM, Sendai, CARB, LCMV, Ectromelia, MAdV-1, MAdV-2, MCMV, Polyoma, and Reovirus, and MNV.

Please note that while the SPF Facility is tested for the presence of *Helicobacter spp.*, *Pasteurella pneumotropica*, MNV, and *C. bovis*, these microorganisms are not excluded. Since the facility was opened in 2010, there has not been an outbreak of excluded pathogens.

For the most recent health reports, please send a request to MMRRC_CC@unc.edu.

General husbandry notes:

- **Caging:** All cages are Autoclaved Tecniplast Greenline Ventilated Cages
- **Bedding:** The majority of CC strains are maintained on Autoclaved and Irradiated ¼” Bed-o’Cobs by The Andersons Lab Bedding Products (https://andersonslabbedding.com/wp-content/uploads/2012/07/Bed-oCobs_1_4.pdf). Due to certain strain-specific health issues (preputial gland abscesses, dermatitis, etc.) housing on sterile ALPHA-dri® instead of standard Cob is recommended for some strains. See SDS for specific strains.

- **Feed:** The majority of CC strains are maintained on LabDiet® Select Verified Rodent Diets 5V0F - Select Rodent 50 IF/6F Auto (https://www.labdiet.com/cs/groups/lolweb/@labdiet/documents/web_content/ndjf/oda0/~edi_sp/36142_804403.pdf). Some strains are provided Breeder Chow (LabDiet® Select Verified Rodent Diets 5V0G - Select Rodent 50 IF/9F Auto (https://www.labdiet.com/cs/groups/lolweb/@labdiet/documents/web_content/ndjf/odq5/~edi_sp/36142_849601.pdf)). See SDS for specific strains.
- **Enrichment:** sterile nestlets and crinkle paper are provided for all cages.
- **Enrichment for breeding cages:** Sterile red huts are provided. Sterile Sunflower seed enrichment (<https://www.bio-serv.com/product/SFS.html>); ~1-2Tbs. added to bottom of cages approx. 1x/week for foraging) for all strains except for CC027/GeniUncJ, which has been utilized as a model for specific nut allergies.

Shipping of Live Mice

For all orders, please contact MMRRC_CC@unc.edu. Due to the wide range reproductive performance of these strains, the shipment time and batch size may vary. Orders are filled in a first-come, first serve manner. The customer will provide their institution's Shipping Coordinator's information (name, email address, phone number), and room-specific health reports will be sent by UNC's Shipping Coordinator for review and approval.

Quotes are available upon request for the mouse and crate charges.

Courier charges are charged separately. Our preferred courier is Validated Delivery Solutions (VDS), but the customer can specify their preferred courier and provide their courier-specific shipping account for direct billing. If the receiving institution does not have an account, the shipping and handling charges will be included in the final invoice.