



## MMRRC Reproducibility Assurances

The Mutant Mouse Regional Resource Centers (MMRRC), <https://mmrc.org> is the NIH's premier national consortium that provides the worldwide biomedical research community with access to more than 30,000 strains of mutant mice and ES cells. With one of the largest nonprofit repositories of mouse models in the world, the MMRRC distributes and archives models to advance the biomedical research efforts of the scientific research community. Each month through partnerships with researchers around the world, the MMRRC enhances critical research with a continuously expanding catalog of mouse models of human disease.

The MMRRC is your one stop resource for unique and popular research related mouse models offering specific gene deletions, insertions, modifications and repressions, and phenotypes.

## MMRRC Commitment to Quality Control Measures

The significance of understanding and documenting the genetic backgrounds of mouse models used in research is of utmost importance for the Mutant Mouse Regional Resource Center (MMRRC).

The MMRRC understands that if research is to be reliable and reproducible, specific quality control measures and testing need to be in place. Models available from the MMRRC repository have well documented defined, stable genetic backgrounds. This strong genetic integrity coupled with quality control measures allows investigators to generate robust and reproducible results for future comparison.



***In help ensure that MMRRRC strains are held to the highest standards to optimize reproducibility of studies, all submitted strains are thoroughly reviewed and documented and include additional quality control measures that involve:***

- Critical assessment of incoming strains – all submissions require detailed information about method of genetic manipulation, genotype and genotyping procedures, genetic background (e.g. source of strain and ES cell used in development, number of background generations and backcross parent strain), and reproducible phenotype.
  - Thorough strain description – for each strain, a strain detail sheet (SDS) is created that includes strain name using established nomenclature guidelines, gene details, strain description, research applications, strain origin and colony and husbandry information. Moreover, the primary reference(s) for the strain are available through PMID or PMCID links, and the MMRRRC maintains contact with the submitting investigator to aid in troubleshooting phenotype reproducibility. Phenotype information that arises in the literature from use of these strains is added on a regular basis.
- The genetic identity of all strains is confirmed upon receipt of donated animals and prior to shipment of animals/materials to requesting investigators. Genotyping assays are optimized and standardized protocols are available to ensure that investigators have a means to genotype any MMRRRC strains they receive and maintain.
- To provide additional genetic information for congenic strains, background strain information can be ascertained using MegaMUGA, a low-cost high-density genotyping platform. This may be especially critical to investigations using incipient congenic strains (between N5 and N10) that are not fully congenic. Many MMRRRC strains including the highest demand strains already have this information provided.
- MMRRRC strains are maintained with strict biosecurity SOPs and rigorous health monitoring programs with extensive exclusion lists that include all known pathogens of mice and the vast majority of opportunists. Health monitoring tests use state-of-the art methodology and the MMRRRC can test for agents not on its exclusion list.
- Detailed descriptions of MMRRRC facilities and husbandry conditions (housing, diet, bedding, etc.) are provided.
- The MMRRRC Conditions of Use agreement encourages procurement of animals directly from the MMRRRC in an effort to ensure rigorous genetic and biosecurity control of strains. This can avoid issues of genetic contamination, misidentification of strains, and changes in animal health that can occur at independent institutions.
- The MMRRRC provides numerous value-added services that can aid investigators in troubleshooting phenotype deviations and ensuring reproducibility. These include, but are not limited to, genotyping, karyotyping, speed congenics, health monitoring, microbiome analyses, and an array of phenotyping assays.
- MMRRRC scientists and veterinarians are readily available for consultation about use of MMRRRC strains.

To learn more about how the MMRRRC can help you with your next research project and view the well annotated online catalogue of mutant mouse lines visit, [MMRRRC.org](http://MMRRRC.org). Repository holdings are searchable online and are easy to find by searching model name, disease term or research area.

***Your next mouse model is only mouse a click away.  
Find or donate your mouse model, Today.***