

## **Rat Resource and Research Center**

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The NIH-funded Rat Resource and Research Center (RRRC) serves as a centralized repository for maintaining/distributing rat models and providing rat-related services to the biomedical community. Currently, the RRRC has close to 600 rat lines and all are archived by cryopreservation to ensure against future loss. The RRRC distributes live animals, cryopreserved sperm/embryos and rat embryonic stem (ES) cell lines. Quality control measures for all materials include extensive genetic validation and health monitoring. The RRRC has expertise in rat reproductive biology, colony management, health monitoring, genetic assay development/optimization, isolation of germline competent ES cell lines from transgenic rats and can partner as consultants/collaborators. Fee-for-service capabilities include a wide variety of genetic analyses, strain rederivation and cryopreservation, isolation of rat tissues, custom breeding/colony management, microbiota analysis and characterization of genetically engineered rats. The RRRC can make genetically engineered rat models from start to finish using a variety of state-of-the-art technologies including genome editing (e.g., CRISPR/Cas9) as well as traditional methods such as random transgenesis and modified embryonic stem cell microinjection into blastocysts. Our website ([www.rrrc.us](http://www.rrrc.us)) allows user-friendly navigation. Current research efforts include generation and characterization of a variety of new rat models, optimizing genetic engineering techniques in rats, and improvements to rat sperm cryopreservation and rat *in vitro* fertilization. The University of Missouri is home to the NIH-funded MU Mutant Mouse Resource and Research Center (MMRRC), the National Swine Resource and Research Center (NSRRC), the MU Animal Modeling Core and the MU Metagenomics Center. Together, these highly collaborative groups provide a variety of animal model-related services across species to facilitate biomedical research.

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