

Updated Hybrid Rat Diversity Panel Portal at RGD

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Rats have been used as experimental models to study physiological and pathological processes for many decades. Researchers either have been selectively breeding disease resistant/susceptible strains or generating engineered mutants to study the correlation between genome and phenome. To facilitate the use of data derived from rat models of human disease, the Rat Genome Database (RGD) has endeavored in curating rat strains with their functional data and analyzing genome variant data since 2009. These phenotype and genome data are available from individual strain pages, RGD tools or downloads. In addition to finding data by individual strains, RGD also put together the Hybrid Rat Diversity Panel (HRDP) Portal (https://rgd.mcw.edu/rgdweb/hrdp_panel.html) where data associated with genetically diverse rat strains are integrated in one place for analysis. The HRDP is a group of 94 inbred rat strains with genetic and phenotypic diversity. It includes 31 genetically diverse classic inbred strains, 29 FXLE/LEXF recombinant inbred (RI) strains from Japan, and 34 HXB/BXH RI strains from the Czech Republic. The Hybrid Rat Diversity Program at the Medical College of Wisconsin is rederiving, sequencing (whole genome and selected transcriptome), maintaining, and distributing the HRDP strains to investigators worldwide. In the updated 2024 HRDP portal, strain availability, variants analysis and quantitative phenotype data are linked from the tables. Use cases will be presented to highlight the new features and the integration of transcriptome data will be discussed. The availability of both genome and phenome data for HRDP rats will empower researchers to make the best use of integrated RGD strain data.