

The Phenotypes and Models Portal at the Rat Genome Database (<http://rgd.mcw.edu>) was designed to be an entryway to physiological data and disease model information for researchers using rat as a model to study physiological function and human disease. RGD has been developing portals and tools to view data with disease orientation for several years. Physiological research is often focused on biological function and mechanisms involved in the development, amelioration and prevention of disease. The Phenotypes and Models Portal combines existing RGD data with new physiological data to provide a view that allows physiologists to extract data focused on organ system function or to identify suitable rat models to study disease. The Phenotypes and Models Portal has four branches: 1) phenotype data, 2) strains and models, 3) phenotype mining tool, and 4) strain medical records. The phenotype data provides access to physiological data from multiple studies, across many organ systems and includes detailed experimental protocols. Strain availability and strain details, including models currently used to study human disease, are available in the strains and models branch. The PhenoMiner tool allows users to query data by strain, phenotype, experimental condition and measurement method. The new strain medical records allow for the comparison of commonly used strains across standard phenotypic measurements and provides available SNP, QTL and microarray data for each strain. This portal extends the effort to link phenotype and genotype data to assist users in choosing appropriate model strains for studying disease.

Strains & Models
This branch of the Phenotypes & Models portal provides access to detailed information about strains, identifies disease models, and offers techniques for colony maintenance and strain development.

Supported by NHLBI 5R01HL064541

RGD Home Page Screenshot showing navigation tabs: Home, Strains & Models, Phenotypes & Models, Experimental Conditions, Measurement Methods, and PhenoMiner. A central grid of icons represents Genes, Strains, QTL, Function, Diseases, Phenotypes & Models, Rat Genome, Genome Tools, and Pathways.

Phenotypes & Models at RGD Screenshot showing a central navigation area with icons for Strain Phenotypes, Strains & Models, Rat Strains, Experimental Conditions, Phenotypes, Methods, PhenoMiner, and Strain Medical Records.

Strains & Models Screenshot showing a list of strains with columns for Strain Name, Strain ID, and Strain Description.

Disease Models Screenshot showing a list of disease models with columns for Disease Name, Strain, and Description.

Rat Strain Models for Diabetes Screenshot showing a table of diabetes models with columns for Strain Name, Strain ID, and Strain Description.

Phenotypes Screenshot showing a detailed view of a phenotype with columns for Phenotype Name, Strain, and Description.

Phenotypes Summarized data Screenshot showing a bar chart of trait data for different strains.

PhenoMiner Screenshot showing a query interface with filters for Strain, Phenotype, Experimental Conditions, and Measurement Methods.

Phenotype Database Screenshot showing a detailed view of a phenotype with columns for Phenotype Name, Strain, and Description.

PhenoMiner
This new tool uses multiple ontologies to integrate physiological data and provides a method to query the available data by rat strain, phenotype, experimental conditions and measurement methods.

Strain Medical Records Screenshot showing a list of strain medical records with columns for Strain Name, Strain ID, and Strain Description.

Strain Medical Records Detailed Screenshot showing a detailed view of a strain medical record with columns for Source, Phenotype Data, Physical Features, Growth/Development, SNP Data, QTL Data, and Microarray Data.

Strain Medical Records
The new strain medical records provides a systematic overview of models commonly used to study disease, including general characteristics (physical features, growth), phenotype data, and available SNP, QTL and microarray data for each strain.

Phenotypes

Strains & Models

PhenoMiner

Strain Medical Records