

PHENOTYPES AND MODELS AT THE RAT GENOME DATABASE: MEET JOE RAT



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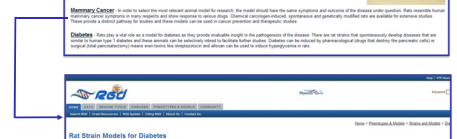
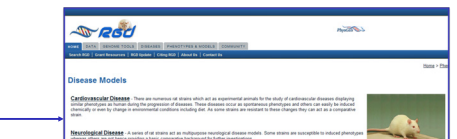
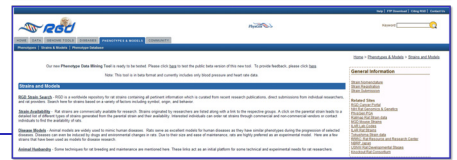
ABSTRACT

The Rat Genome Database (RGD, <http://rgd.mcw.edu>) developed the Phenotypes and Models Portal as an entryway to physiological data and disease model information for the rat. 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 was created with four branches (focusing on 1) Phenotype Data, 2) Strains and Models, 3) Phenominer (phenotype data 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 Strain Medical Records provide general, genomic and baseline physiological data for the comparison of commonly used strains across standard phenotypic measurements and provides available SNP, QTL and microarray data for each strain. These rat electronic medical records provide tools to assist investigators in identifying rat models that closely match traits characteristic of human diseases. The new "Meet Joe Rat and his family" branch of the Phenotypes and Models portal spotlights four new subsets of information for rat researchers. These include 1) photographs and images of rats including strain availability, 2) phylogenetics, 3) methods and techniques used in physiological studies, and 4) mini-portals that include focused sets of data related to organ systems or disease models. The features and resources within the Phenotypes and Models portal extend the effort to link phenotype and genotype data to assist users in choosing appropriate model strains for studying disease and strategies to study these disease models to further investigate disease mechanisms.

<http://rgd.mcw.edu>



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.



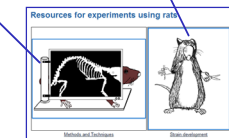
Measurement Methods Selection

- Select 1 or more Measurement Methods from the list below. Each selection will be used to filter remaining references. Click the plus (+) sign to expand sub topics.

In vivo method (8453)
 In vivo method (2645)
 Body measurement method (1669)
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 Blood and plasma measurement (132)
 Blood and plasma measurement (50)
 Photomicroscopy (134)
 SNP (1)
 Vascular including catheter (847)
 Vascular including catheter (28)
 Vascular including catheter (27)

Measurement Methods Reports

Online: Quantitative Measurement Methods (134)
 Paper and Measurement Methods (1)
 PCA Repository: <http://rgd.mcw.edu>
 Rat Field Catalog: <http://rgd.mcw.edu>
 Mouse C. ebl: <http://rgd.mcw.edu>
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Meet Joe Rat
General data for researchers using rat models. Portal includes archive of photos, experimental techniques and methods, and strain relatedness.

Phenotypes
Summarized data for traits and detailed methods are available through this branch of the Phenotypes & Models portal.

Photos and Images

PhysGen Photo archive
 Ratday Photo archive
 Community submissions

Strain Availability Table

Strain	Availability
BN	Available
CDF	Available
FHH	Available
GH	Available
LEW	Available
SHR	Available
SD	Available
SS	Available
WKY	Available
COMING SOON	Coming Soon
VOTE	Coming Soon

Meet Joe Rat

Photos and Images
 Rats 101
 Phylogenetics
 Portals

Phylogenetics of the laboratory rat *Rattus norvegicus*

Phylogenetic tree showing relationships between various rat strains.

Strain Medical Records

Available Strain Medical Records

BN	CDF	FHH	GH
LEW	SHR	SD	SS
WKY	COMING SOON	VOTE	

Strain Medical Records
The new strain medical records provide 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.

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.

PhenoMiner

Phenotype Data
 Experimental Conditions
 Measurement Methods

Query results showing a bar chart of phenotype data across different strains and conditions.

Strain: BN, Brown Norway

Source: Phenotype Data
 Physical Features
 Growth/Development
 SNP Data
 QTL Data
 Microarray Data

Detailed view of the Strain Medical Record for BN, showing various data points and charts.

<http://rgd.mcw.edu>
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