

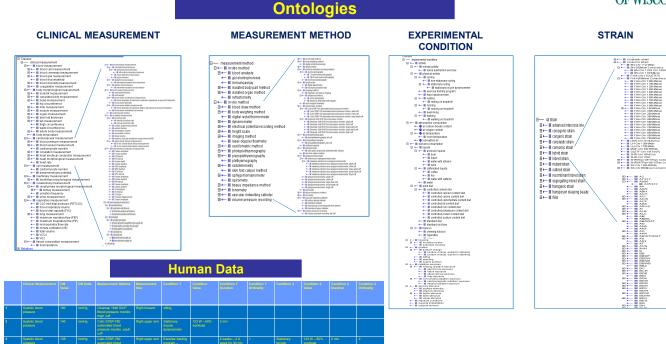
## **Ontology Based Phenotype Database and Mining Tool**

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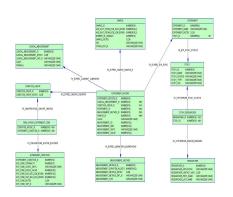


http://rgd.mcw.edu

ABSTRACT: The strength of the rat as a model organism lies in its utility in pharmacology, biochemistry, and physiology research. Data resulting from such studies is difficult to represent in databases and the creation of user-friendly data mining tools has proven difficult. The Rat Genome Database has developed a comprehensive ontology-based data structure and annotation system to integrate phenotype data along data on samples, measurement methods and experimental conditions. RGD uses standard data formats and multiple ontologies to integrate phenotype data from large scale phenotype projects, QTL studies and other projects. The four major ontologies include the strain ontology. clinical measurement ontology, measurement method ontology and experimental conditions ontology. This has facilitated the development of a phenotype data mining tool which allows users to search for phenotype information using a series of filters based on clinical measurement type, strain, measurement method and/or experimental conditions. Users may start their query by choosing strain or clinical measurement of conditions and filter further as they move through the query. Results facilitate comparisons of phenotype readings for single or multiple strains, conditions or methods measurement allowing researchers to their own compare phenotype data with those from multiple studies. This new tool will assist researchers in choosing the best model strains for their studies. RGD's phenotype database and data mining tool are also a further effort to directly link phenotype data with genomic and genetic variations.



## Database Structure



The data structure provides for information on the study and experiment, reference and associated researcher as well as the necessary information to record all aspects of the experiment.

## Data Retrieval and Visualization – Rat Data

