RGD A UNIQUE RESOURCE FOR RAT QTL DATA: LINKING PHENOTYPE TO THE GENOME

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Abstract

The usage of rat as a research model enables RGD (http://rgd.mcw.edu/) to collect QTL data and act as a platform for the rat users trying to link genomic variations to phenotypes. Currently we have more than 1600 rat quantitative trait loci (QTLs) in RGD that are manually curated from various literature sources. While searching a QTL one could use the quick search, advance search, or keyword search boxes, trait or ontology term search or even the option of searching by RGD ID or by genomic position. QTL report pages have comprehensive data on strains and crosses, map positions, LOD scores, treatments and methodologies implied during the study of these QTLs. These are linked to other QTLs that lie in the same genomic region, sub region or those which interact with it.

Queries from NCBI are done weekly to get recent publications related to QTLs which keeps our data up to date. Researchers are regularly urged to submit their QTLs to RGD. During the process of registration RGD assigns official nomenclature to these QTLs following to the guidelines laid out by the International Committee on Standardized Genetic Nomenclature for Mouse and the Rat Genome and Nomenclature Committee. The submitters are provided with these QTL symbols and RGD ID prior to their publications and asked to mention these in their papers. These QTLs are released to the website along with the relevant references, after this data appears in a published article or the submitter permits RGD to do so.

We use controlled vocabularies like Mammalian Phenotype Ontology (http://www.informatics.jax.org/searches/MP_form.shtml) and Disease Ontology (http://www.nlm.nih.gov/mesh/MBrowser.html) to annotate these QTLs.
QTL tracks on the GBrowse and GViewer allow visual representation of these regions in the genomic context and thereby facilitating the use of comparative genomics for human diseases. These also provide the users the ability to search and display QTLs across species and get gene data that lie within these specific regions. Users have the option to download these data sets and customize them to suit their needs.

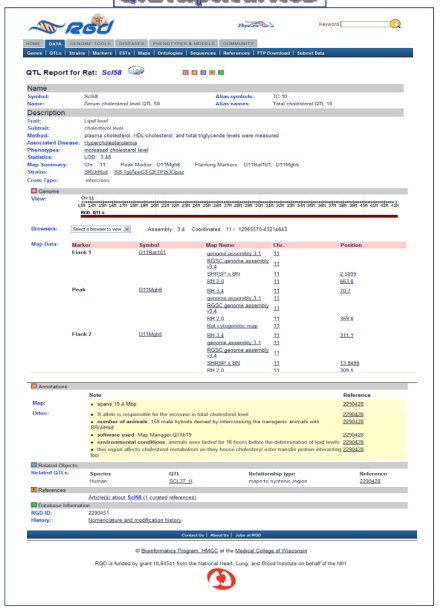
Searching a QTL in RGD

Keyword search

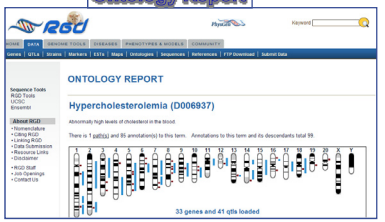
Advance search

Position search

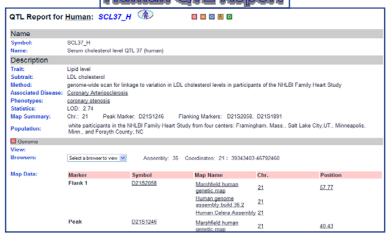
QTL Report in RGD



Ontology Report



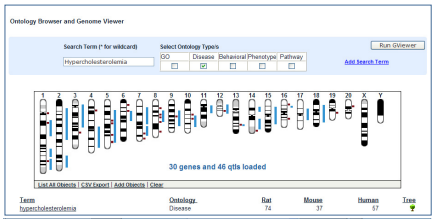
Human QTL Report



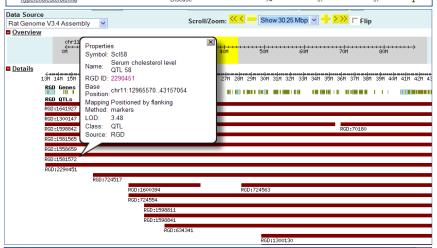
QTL Submitting Groups

Genomic Tools to Visualize QTLs

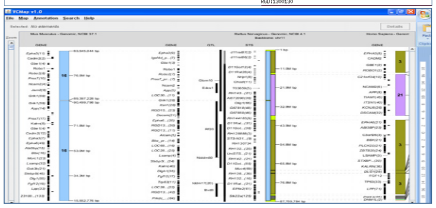
GViewer



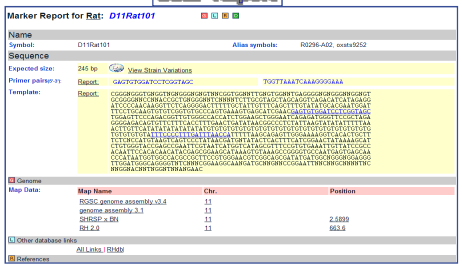
GBrowse



VCMap

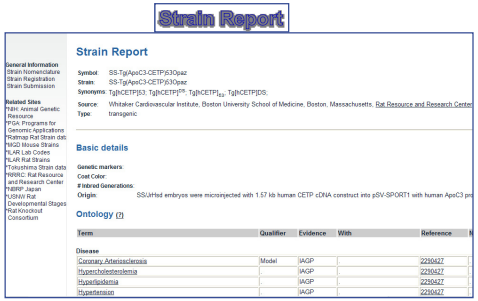


SSLP Report



Reference Report

Strain Report

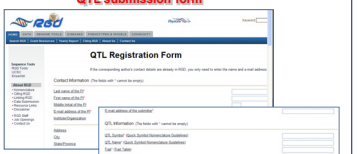


Submitting QTLs to RGD

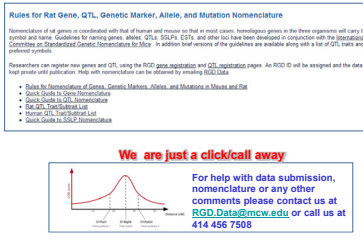
Advantages of Registering data with RGD

- Consistent Nomenclature with approved guidelines
- Use QTL nomenclature consistent with other QTLs
- Assign sequential numbering to QTLs
- Use correct nomenclature in publications which will be the same as RGD Receive RGD_ID which can be mentioned in publications
- Data can be kept private until released by researchers

QTL submission form



Guidelines for QTL Nomenclature



We are just a click/call away

For help with data submission, nomenclature or any other comments please contact us at RGD.Data@mcw.edu or call us at 414 456 7508

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