

BioMart 0.9 – introducing tools for data analysis and visualisation.

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The BioMart project provides free software and data services to the international scientific community in order to foster scientific collaboration and facilitate the scientific discovery process. The project adheres to the open source philosophy that promotes collaboration and code reuse.

The latest version of BioMart includes support for data analysis and visualisation tools exploiting the richness of the existing BioMart data sources and its query engine capabilities. The first of the BioMart tools has already been implemented and is accessible from BioMart Central Portal. This tool enables enrichment analysis of genes in all 66 species included in the latest Ensembl release and a broad range of gene identifiers for each species are also available. Furthermore, the tool supports cross-species analysis using Ensembl homology data. For instance, it is possible to perform a one step enrichment analysis against human disease dataset using experimental data from any of the species for which human homology data is available. Finally, the enrichment tool facilitates analysis of BED files containing genomic features such as Copy Number Variations (CNVs) or Differentially Methylated Regions (DMRs).

The BioMart tools offer different type of access tailored to different groups of users. For biologists, the BioMart tools offer an interactive and customisable web-based graphical user interface. For bioinformaticians, the BioMart tools provide programmatic access through a range of Application Programming Interfaces (APIs) such as REST, SOAP, SPARQL and JAVA. For service providers, the BioMart tools offer a highly customizable system that can be installed locally and tailored to support new types of data analysis. The BioMart tools are built as an extensible library that facilitates the implementation of new functionality and algorithms, while the backend can be extended with customized datasets.

Project URL <http://www.biomart.org>

BioMart Central Portal <http://central.biomart.org>

Software <https://github.com/biomart>