

Disease related gene/miRNA databases

Contents

Phenopedia	2
Disgenet	2
PolySearch2.....	3
KEGG Disease.....	3
Malacards.....	3
GWAS catalog	4
Mouse Genome Informatics	5
HMDD v3.0	5
miR2Disease	6

Phenopedia

<https://phgkb.cdc.gov/PHGKB/startPagePhenoPedia.action>

[Reference] Wei Yu, Melinda Clyne, Muin J. Khoury and Marta Gwinn. Phenopedia and Genopedia: Disease-centered and Gene-centered Views of the Evolving Knowledge of Human Genetic Associations. *Bioinformatics*, doi:10.1093/bioinformatics/btp618.

The screenshot shows the Phenopedia website interface. At the top, it reads "Public Health Genomics and Precision Health Knowledge Base (v6.8)". On the left is a navigation menu with items like "PHGKB", "About", "MyPHGKB", "Specialized PHGKB", "Genomics (A-Z)", "Office of Genomics and Precision Public Health", "My Family Health Portrait", "State Public Health Genomics Programs Map", "Genomics & Health Impact Weekly Scan (Current Edition)", "Advanced Molecular Detection Weekly Clips (Current Edition)", and "Non-Genomics Precision Health Update". The main content area is titled "Phenopedia" and includes social media links for "Recommend", "Tweet", and "Share". A red notice states: "We have to retire this site due to some reasons. This site has not longer been updated and some links are not working properly. Sorry about this." Below this, it says "Last data update: Dec 10, 2020. (Total: 3326 diseases)" and has a search box with the placeholder "Enter a disease name" and a "Search" button. An "About Phenopedia" section explains that it provides a disease-centered view of genetic association studies summarized in the online Human Genome Epidemiology (HuGE) encyclopedia. A "How to cite this site:" section provides the citation: "Wei Yu, Melinda Clyne, Muin J. Khoury and Marta Gwinn. Phenopedia and Genopedia: Disease-centered and Gene-centered Views of the Evolving Knowledge of Human Genetic Associations, *Bioinformatics*, doi:10.1093/bioinformatics/btp618."

Disgenet

<https://www.disgenet.org/search>

[Reference] Piñero et al., 2016 , Piñero et al., 2015 , Bauer-Mehren et al., 2011 and Bauer-Mehren et al., 2010 .

The screenshot shows the Disgenet search interface. At the top, there is a navigation bar with links for "Search", "Browser", "API", "Downloads", "Cytoscape", "RDF", "disgenet2r", "Help", and "COVID-19". Below this is a search area with three radio buttons: "diseases" (selected), "genes", and "variants". A search input field contains the placeholder text "enter diseases separated by double colon (:)" and a blue search button. Below the input field, it shows "Examples: C0001080, Alzheimer's Disease, D009765, 213200" and a note: "Hold 'ctrl' key for selecting multiple diseases".

PolySearch2

<http://polysearch.cs.ualberta.ca/polysearch>

[Reference] Liu Y., Liang Y., Wishart D.S. (2015) PolySearch 2.0: A significantly improved text-mining system for discovering associations between human diseases, genes, drugs, metabolites, toxins, and more. *Nucleic Acids Res.* 2015 Jul 1;43(Web Server Issue):W535-42.

PolySearch2

Quick Start

To use this server:


1. Decide which type of search you wish to do (e.g. "Given Toxin Find associated Diseases")
2. Select search restraints from the pull-down menus (Given X, Find Y)
(e.g., select "Toxin" from the Given menu and "Disease" from the Find menu.)
3. Enter Query Keyword (e.g. "Bisphenol A")
4. Press "Quick Search" to start a search using default settings, OR
5. Press "Advanced Search" and follow the instructions on the advanced search page to fine tune your search
6. If you need more help or detailed explanations of the methods or databases, see the help section.

Choose your search type and enter query keyword

Given	<input type="text" value="Disease"/>	Find ALL associated	<input type="text" value="Diseases"/>
Query Keyword	<input type="text" value="Enter query keyword"/>	<input type="button" value="Quick Search"/>	<input type="button" value="Advanced Search"/>

KEGG Disease

<https://www.genome.jp/kegg/disease/>



KEGG DISEASE Database

Diseases viewed as perturbed states of the molecular system

[» Japanese](#)

Menu **PATHWAY** BRITE NETWORK **DISEASE** DRUG ENVIRON Pathogen Virus **MEDICUS**

Search DISEASE by H number, name, description, category, pathway and gene

Search DISEASE in KEGG MEDICUS

Malacards

<https://www.malacards.org/>

[Reference] MalaCards: an amalgamated human disease compendium with diverse clinical

and genetic annotation and structured search, NAR 2017 Database Issue

GWAS catalog

<https://www.ebi.ac.uk/gwas/>

[Reference] Buniello A, MacArthur JAL, Cerezo M, Harris LW, Hayhurst J, Malangone C, McMahon A, Morales J, Mountjoy E, Sollis E, Suveges D, Vrousou O, Whetzel PL, Amode R, Guillen JA, Riat HS, Trevanion SJ, Hall P, Junkins H, Flicek P, Burdett T, Hindorf LA, Cunningham F and Parkinson H. The NHGRI-EBI GWAS Catalog of published genome-wide association studies, targeted arrays and summary statistics 2019. *Nucleic Acids Research*, 2019, Vol. 47 (Database issue): D1005-D1012.

Mouse Genome Informatics

<http://www.informatics.jax.org/>

[Reference] Janan T. Eppig, Judith A. Blake, Carol J. Bult, James A. Kadin, Joel E. Richardson, The Mouse Genome Database Group, The Mouse Genome Database (MGD): facilitating mouse as a model for human biology and disease, *Nucleic Acids Research*, Volume 43, Issue D1, 28 January 2015, Pages D726–D736, <https://doi.org/10.1093/nar/gku967>

The screenshot shows the Mouse Genome Informatics (MGI) website homepage. The header features the MGI logo on the left, the text "Mouse Genome Informatics" in the center, and the "ALLIANCE of GENOME RESOURCES FOUNDED BY" logo on the right. Below the header is a navigation bar with links for "Search", "Download", "More Resources", "Submit Data", "Find Mice (IMSR)", "Analysis Tools", "Contact Us", and "Browsers". The main content area is divided into two columns. The left column contains a "Quick Search" box and a list of topic-specific search and analysis tools: Genes, Phenotypes & Mutant Alleles, Human-Mouse: Disease Connection, Gene Expression Database (GXD), Recombinase (cre), Function, Strains, SNPs & Polymorphisms, Vertebrate Homology, and Mouse Models of Human Cancer. The right column features a red banner for "**NEW: MOUSE RESOURCES FOR COVID-19 RESEARCH**", a paragraph describing MGI as an international database resource for laboratory mice, and links for "About Us", "MGI Publications", and "Cite Us". Social media icons for Facebook and Twitter are also present.

HMDD v3.0

<http://www.cuilab.cn/hmdd/>

[Reference] Huang, Zhou, Jiangcheng Shi, Yuanxu Gao, Chunmei Cui, Shan Zhang, Jianwei Li, Yuan Zhou, and Qinghua Cui. "HMDD v3.0: a database for experimentally supported human microRNA–disease associations." *Nucleic acids research* 47, no. D1 (2019): D1013-D1017.

HMDD v3.2: the Human microRNA Disease Database version 3.2

Home	Browse	Search	miR-Target Network	Causality	Disease Network
Download	Submit	Help			

HMDD v3.2 Tutorial

June-28, 2018



MicroRNAs (miRNAs) are one class of important regulatory noncoding RNAs, which is ~22nt in length and mainly repress gene expression at post-transcriptional level. Emerging evidence has shown that miRNAs play critical roles in various important biological processes and therefore the dysfunctions related with miRNAs are often associated with human disease, including cancer and cardiovascular disease. Therefore, miRNAs are representing one class of important biological molecules in understanding the mechanisms of disease formation and development, and in identifying biomarkers for disease diagnosis and treatment.

HMDD (the Human microRNA Disease Database) is a resource that curates experimentally supported miRNA and disease association data. HMDD was originally constructed on December 2007 and was updated more than 30 times during the past ten years. On June 2013, we released HMDD version 2 (HMDD v2.0). In the version 2, we curated miRNA-disease association data in more details, such as data from genetics, and epigenetics, data from samples of circulation (such as blood, serum, and plasma etc), and data from miRNA-target interactions. On June 2018, we released HMDD v3.0. Now in the latest version 3, we have classified the literature evidence in more details, which results in 6 evidence classes, 20 evidence codes (see the Table below). Currently, users can browse and search the database by the names of miRNAs and diseases. Moreover, users can download all data in HMDD v3.0, including all miRNA-disease association data and miRNA-disease association data from various classes of miRNA-disease association assays (The whole dataset of miRNA-disease association data, the miRNA-disease association data from circulation assay, the miRNA-disease association data from genetics assay, the miRNA-disease association data from epigenetics assay, the miRNA-disease association data from miRNA-target assay, the miRNA-disease association data from tissues expression assay and the other miRNA-disease association data).

miR2Disease

<http://www.miR2Disease.org>

[Reference] Jiang, Qinghua, Yadong Wang, Yangyang Hao, Liran Juan, Mingxiang Teng, Xinjun Zhang, Meimei Li, Guohua Wang, and Yunlong Liu. "miR2Disease: a manually curated database for microRNA deregulation in human disease." Nucleic acids research 37, no. suppl_1 (2009): D98-D104.

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<p>miR-Disease »</p> <ul style="list-style-type: none"> + HOME + SEARCH + DOWNLOAD + SUBMIT + ANALYSIS + <p>Link »</p> <ul style="list-style-type: none">    	<p>Introduction »</p> <p><i>miR2Disease</i>, a manually curated database, aims at providing a comprehensive resource of miRNA deregulation in various human diseases. Each entry in the <i>miR2Disease</i> contains detailed information on a miRNA-disease relationship, including miRNA ID, disease name, a brief description of the miRNA-disease relationship, miRNA expression pattern in the disease state, detection method for miRNA expression, experimentally verified miRNA target gene(s), and literature reference .</p> <ul style="list-style-type: none"> • All entries can be retrieved by miRNA ID, disease name or target gene. • miR2Disease will be updated bimonthly. • miR2Disease sincerely looks forward to recently established relationship between miRNA and human diseases to be submitted. 	<p>Statistics »</p> <p style="text-align: right;">Friday, Dec.11, 2020</p> <p style="text-align: right;"> Number of miRNAs: 349 Number of diseases: 163 Number of entries: 3273 </p> <p style="text-align: right;">Creation Date: Apr.2, 2008</p>