

Search HomoloGene for alcohol dehydrogenase

HomoloGene is a system for automated detection of homologs among the annotated genes of several completely sequenced eukaryotic genomes.

HomoloGene Release 64 Statistics

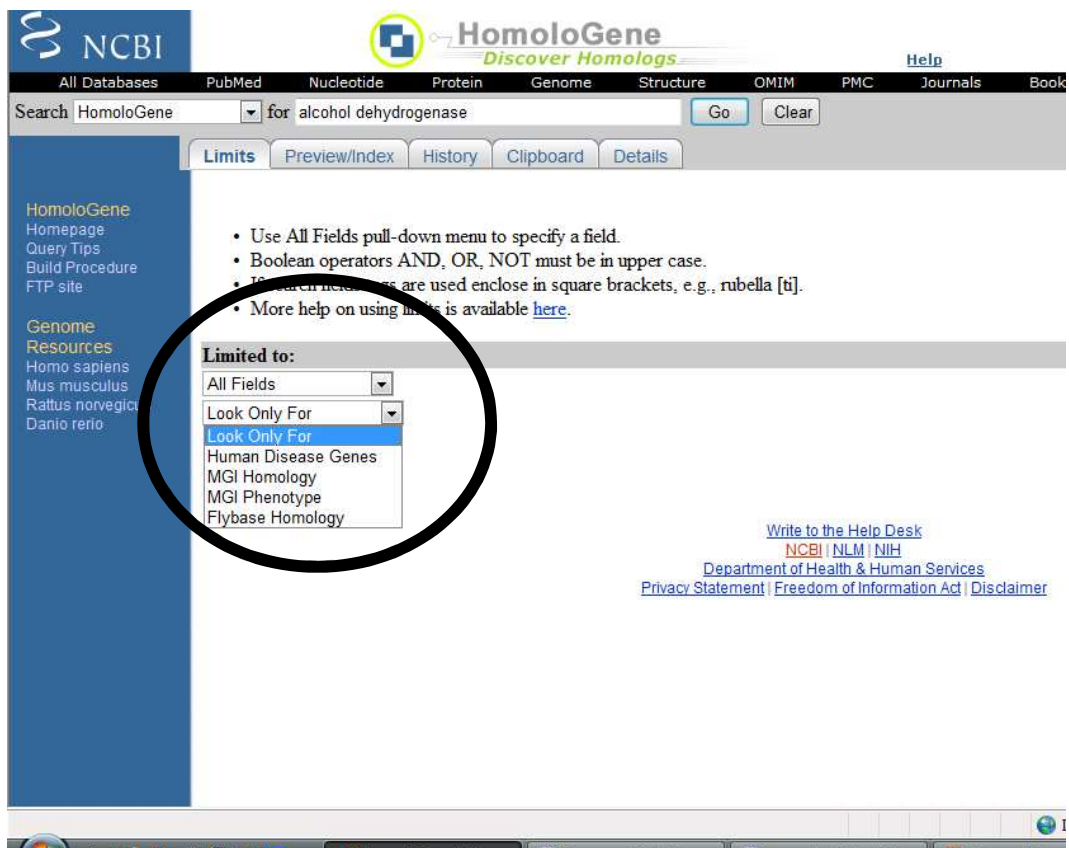
Initial numbers of genes for each species, numbers of genes placed in a homology group, and the numbers of groups for each species.

Species	Number of Genes		HomoloGene group
	Input	Grouped	
Homo sapiens	22,165	19,571	18,876
Pan troglodytes	25,096	17,243	16,375
Canis lupus familiaris	19,766	16,789	15,996
Bos taurus	22,049	19,803	16,276
Mus musculus	25,388	21,786	19,026
Rattus norvegicus	21,991	19,267	17,512
Gallus gallus	17,959	13,207	11,969
Danio rerio	26,288	20,764	13,900
Drosophila melanogaster	14,085	9,315	7,796
Anopheles gambiae	12,460	8,944	7,618
Caenorhabditis elegans	20,155	8,685	4,829
Schizosaccharomyces pombe	5,043	3,237	2,949
Saccharomyces cerevisiae	5,880	4,854	4,373
Kluyveromyces lactis	5,335	4,462	4,385
Eremothecium gossypii	4,722	3,933	3,889
Magnaporthe grisea	12,832	7,295	6,364
Neurospora crassa	10,079	6,175	6,039
Arabidopsis thaliana	27,165	19,850	11,226
Oryza sativa	26,887	17,330	10,674
Plasmodium falciparum	5,266	2,440	1,100

What's New
HomoloGene release 64 is now public. It includes updated annotations for the following species: Homo sapiens (NCBI release 37.1), Caenorhabditis elegans (WS190, NCBI release 8.1), Anopheles gambiae (AgamP3.3, NCBI release 3.1), Arabidopsis thaliana (NCBI release 8.1), Bos taurus (NCBI release 3.1), and Magnaporthe grisea (NCBI release 3.1).

Tip of The Day
You can use 'History' in the tool bar to see your previous queries. Previous queries can be combined to form a new search query. [\[More Tips\]](#)

Fig. 1 : Home-page HomoloGene



NCBI HomoloGene Discover Homologs

Search HomoloGene for alcohol dehydrogenase

Limits Preview/Index History Clipboard Details

- Use All Fields pull-down menu to specify a field.
- Boolean operators AND, OR, NOT must be in upper case.
- If search terms are used enclose in square brackets, e.g., rubella [ti].
- More help on using limits is available [here](#).

Limited to:

All Fields
Look Only For
Look Only For
Human Disease Genes
MGI Homology
MGI Phenotype
Flybase Homology


[Write to the Help Desk](#)
[NCBI | NLM | NIH](#)
[Department of Health & Human Services](#)
[Privacy Statement](#) | [Freedom of Information Act](#) | [Disclaimer](#)


Fig. 2 : sezione LIMITS


HomoloGene Result


1: HomoloGene:38387. Gene conserved in Eukaryota


Genes
Genes identified as putative homologs of one another during the construction of HomoloGene.


2  ZADH2, *Homo sapiens* 1
zinc binding alcohol dehydrogenase domain containing 2

 ZADH2, *Pan troglodytes*
zinc binding alcohol dehydrogenase domain containing 2

 ZADH2, *Canis lupus familiaris*
zinc binding alcohol dehydrogenase domain containing 2

 ZADH2, *Bos taurus*
zinc binding alcohol dehydrogenase domain containing 2

 Zadh2, *Mus musculus*
zinc binding alcohol dehydrogenase, domain containing 2

 Zadh2, *Rattus norvegicus*
zinc binding alcohol dehydrogenase, domain containing 2




 ZADH2, *Gallus gallus*
zinc binding alcohol dehydrogenase, domain containing 2



Fig.3.: Nella sezione GENE sono elencati i geni identificati come omologhi putativi dell'entry.



Cliccando su:



- 1) Si accede alle informazioni sul gene del database Entrez Gene;
- 2) Si ottiene una lista di links utili correlati al gene.



Proteins
Proteins used in sequence comparisons and their conserved domain architectures.



 NP_787103.1 377 aa 2
1 

 XP_001138011.1 377 aa 

 XP_533369.1 377 aa 

 NP_001069432.1 377 aa 

 NP_666202.2 377 aa 

 XP_214526.2 377 aa 



 XP_419096.2 325 aa 

Fig.4.: Nella sezione PROTEINS sono elencate le proteine utilizzate per la ricerca d'omologia e le architetture dei loro motivi conservati.

Cliccando sul:

- 1) Si accede al database PROTEIN con le informazioni della specifica proteina;
- 2) Si ottengono informazioni sullo specifico dominio proteico.

HomoloGene Result

Protein Alignments
Protein multiple alignment, pairwise similarity scores and evolutionary distances.

Show Multiple Alignment

Show Pairwise Alignment Scores

Pairwise alignments generated using BLAST

Regenerate Alignments

NP_787103.1 (Homo sapiens) ▼

XP_001138011.1 (Pan troglodytes) ▼

Blast

Fig.5.: Permette di visualizzare e rigenerare gli Allineamenti tra i geni omologhi.

Conserved Domains
Conserved Domains from CDD found in protein sequences by rpsblast searching.

ADH_N (pfam08240)
■ Alcohol dehydrogenase GroES-like domain.

NADB_Rossmann (cl09931)
■ Rossmann-fold NAD(P)(+)-binding proteins.

Fig.6.: Permette di visualizzare i domini conservati disponibili presso il Conserved Domain database.

Related Homology Resources

Links to curated and computed homology information found in other databases.

[MGI:2444835](#)

Orthology group for *M.musculus* *Zadh2* includes *H.sapiens* ZADH2 and *R.norvegicus* *Zadh2*.

Fig.7.: Contiene i links ad altre informazioni sulla omologia disponibili in altri database.

PubMed

Articles associated with genes and sequences of this homology group.

[Predicted mouse peroxisome-targeted proteins and their actual subcellular locations.](#)

Mizuno Y, et al. BMC Bioinformatics 9 Suppl 12, S16 (2008).

[MDR quinone oxidoreductases: the human and yeast zeta-crystallins.](#)

Porté S, et al. Chem Biol Interact 178, 288-94 (2009).

[Arabidopsis thaliana NADPH oxidoreductase homologs confer tolerance of yeasts toward the thiol-oxidizing drug diamide.](#)

Babiyhchuk E, et al. J Biol Chem 270, 26224-31 (1995).

[Human and yeast zeta-crystallins bind AU-rich elements in](#)

Fig.8.: Contiene i links ad articoli associati ai geni del gruppo d'omologia individuato

UniGene

Links to groups of transcribed sequences established by *tblastn* searching of UniGene.

[At.91, Arabidopsis thaliana ARP protein \(REF\)](#)

[Aan.13642, Artemisia annua](#)
Transcribed locus, moderately similar to NP_175390.2 oxidoreductase/ zinc io...

[Bt.76141, Bos taurus](#)
Zinc binding alcohol dehydrogenase, domain containing 2

[Bna.7321, Brassica napus](#)
Transcribed locus, moderately similar to NP_175390.2 oxidoreductase/ zinc io...

[Bna.12058, Brassica napus](#)
Transcribed locus, moderately similar to NP_175390.2 oxidoreductase/ zinc io...

Fig.9.: Contiene i links al database UniGene

The screenshot shows the NCBI HomoloGene website. At the top, there are navigation tabs for 'All Databases', 'PubMed', 'Nucleotide', 'Protein', 'Genome', 'Structure', 'OMIM', 'PMC', 'Journals', and 'Books'. A search bar contains 'HomoloGene' and 'for'. Below the search bar, there are buttons for 'Limits', 'Preview/Index', 'History', 'Clipboard', and 'Details'. The main content area shows 'Display HomoloGene' and 'Show 20'. A table of results is displayed, with the first entry highlighted: '1: HomoloGene:38387. Gene conserved in Eukaryota'. This entry has two columns: 'Genes' and 'Proteins'. The 'Genes' column lists 'ZADH2, Homo sapiens zinc binding alcohol dehydrogenase domain containing 2'. The 'Proteins' column lists 'NP_787103.1 377 aa'. To the right of the table, there is a red box containing the text 'Download, Links'.

Fig.10: collegamento alla sezione download e altri links.

HomoloGene Downloader

Homologene:38387. Gene conserved in Eukaryota

Download **Protein** sequences (in FASTA format)

Include bp upstream of gene

Include bp downstream of gene

Select which sequences should be included

Species	Gene	mRNA	Protein
<input checked="" type="checkbox"/> H.sapiens	ZADH2	NM_175907.4	NP_787103.1
<input checked="" type="checkbox"/> P.troglodytes	ZADH2	XM_001138011.1	XP_001138011.1
<input checked="" type="checkbox"/> C.lupus	ZADH2	XM_533369.2	XP_533369.1
<input type="checkbox"/> P.troglodytes	ZADH2	NM_001075064.1	NP_001060422.1

Fig.11: sezione download

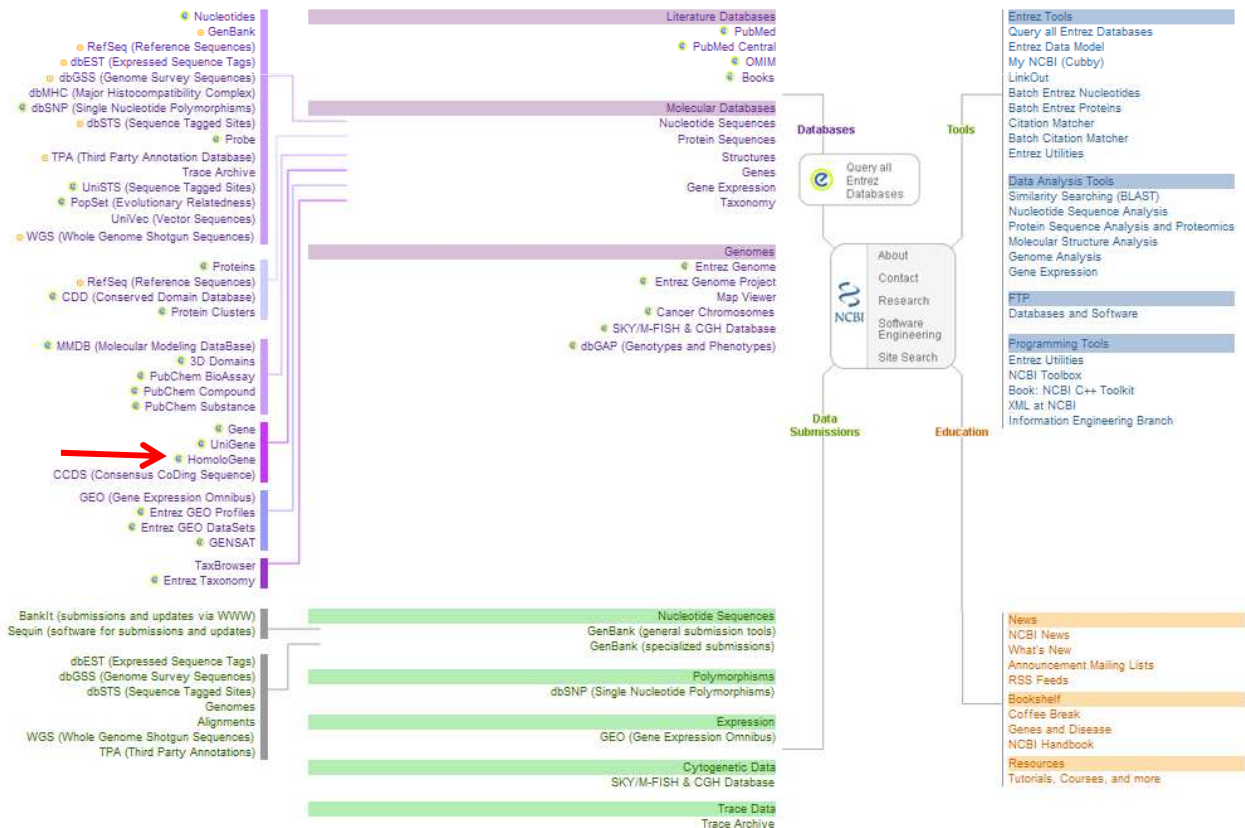


Fig.12: mappa NCBI (HomoloGene indicato dalla freccia)