
Module 3: Genes and Sequences

ii. Does my gene have known homologues/orthologs?

Aims

- Provide overview of ortholog curation at ZFIN
- Suggest starting points for finding ortholog data

Introduction

To facilitate an understanding of relationships between gene and gene functions in zebrafish and other organisms, ZFIN curators capture orthology data for human, mouse and Drosophila genes from zebrafish literature. Approved nomenclature symbols, chromosome(position) and links to the gene page for other species are provided from ZFIN gene pages. The evidence supporting the assertion as well as the source is provided. Definitions of the various evidence codes can be found by clicking on the code itself. http://zfin.org/zf_info/oev.html.

Our curators also identify orthologs through their extensive analysis. These data are entered and attributed accordingly.

Use the ZFIN Genes/Markers/Clones query form, <http://zfin.org/cgi-bin/webdriver?Mlval=aa-newmrkrselect.apg> to locate orthology data for a gene. This form supports the use of approved symbols and names from other organisms.



Site Search:

BLAST Anatomy Publications People Labs Companies Acc #

Home Mutants / Transgenics Wild-Types Genes / Markers / Clones Expression Maps

Search for Genes / Markers / Clones Your Input Welcome

Name / Symbol: contains Accession Number:

Types: (Choose one or more)

- All
- Gene
- Pseudogene
- Morpholino
- EST
- cDNA
- BAC
- PAC
- BAC_END
- PAC_END
- RAPD
- SSLP
- STS

Display results in groups of 20

SEARCH BEST MATCH RESET

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Enter zebrafish, mouse or human gene symbol

Click on the search button or hit the "enter" key

Scroll to the **Orthologs** section of the resulting gene page.

ORTHOLOGY:

Species	Symbol	Chromosome (Position)	Accession #	Evidence	
				AA	CL
Zebrafish	bmp2b	20		●	●
Human	BMP2	20 (p12)	<ul style="list-style-type: none"> • OMIM:112261 • Entrez Gene:650 	●	●
Mouse	Bmp2	2 (76.10 cM)	<ul style="list-style-type: none"> • MGI:88177 • Entrez Gene:12156 	●	

[Orthology Details](#)

Click here for details and a complete list of supporting publications

Click here to view gene pages for *bmp2b* mouse and human orthologs

In this case links to Entrez Gene, OMIM and the mouse model organism database, MGI, are provided. The chromosome (position) is provided for each ortholog. The evidence supporting the assertion and the source for the assertion are provided. Definitions of the various evidence codes can be found by clicking on the code itself. http://zfin.org/zf_info/oev.html This example shows that amino acid sequence homology and conserved location have identified a human

bmp2b ortholog. A mouse ortholog has been identified via amino acid sequence homology and synteny.

Exercises

- What type of evidence exists to support human and mouse orthologues of *fgf8*?