



**MOD Interface Caucus**  
**WormBase**

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# *Road map*

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**1. Introduction**

**2. GMOD UI scenarios**

**3. Miscellany: Common UI, new features**



# ***Introduction***

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**Species:** *C. elegans*, *C. briggsae*, *C. remanei*

**Community:** ~3000 *C. elegans* researchers

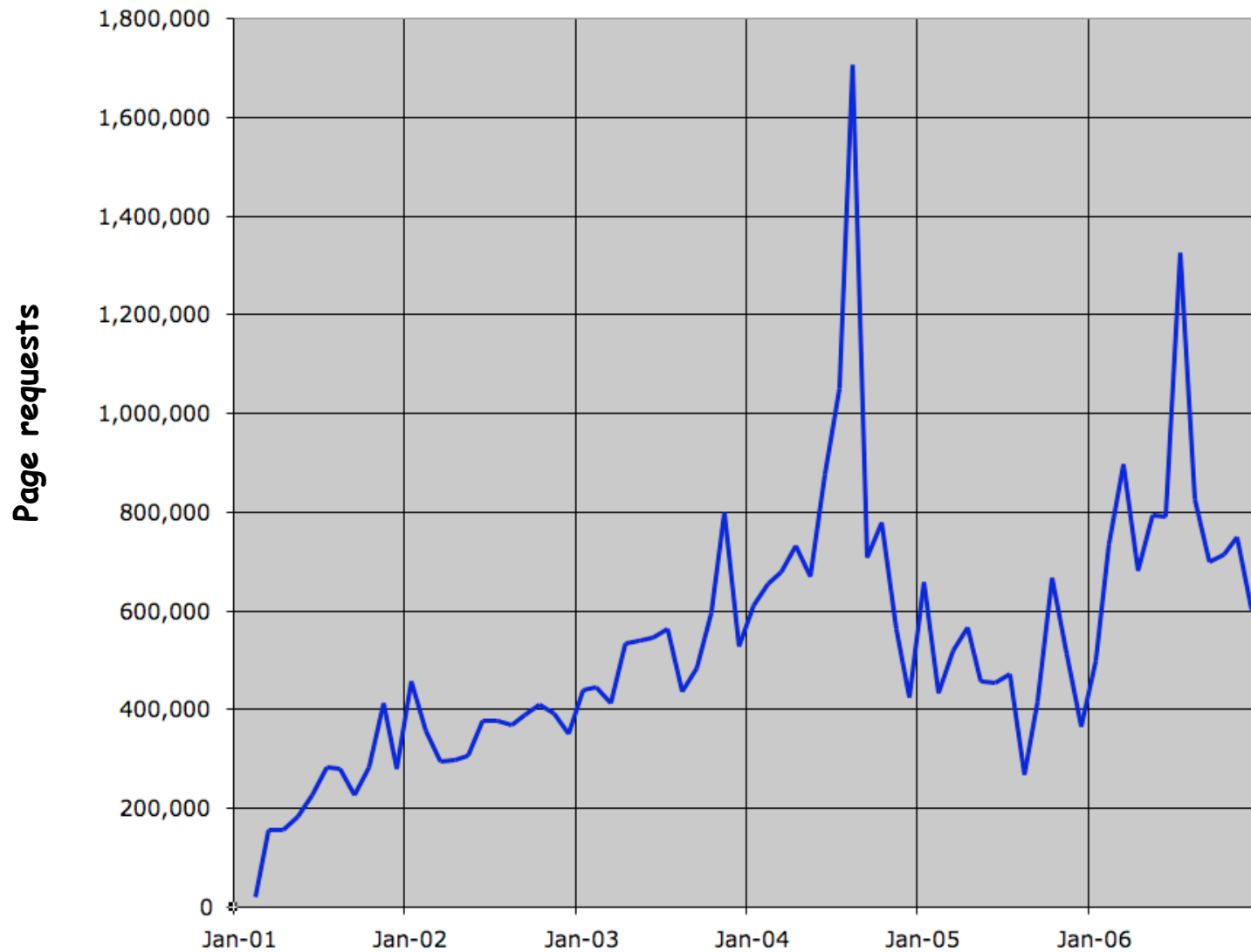
**Online:** 5 years (Feb 2001), prehistory as AceDB, WCS

**Future:** 2007 - 2 additional genomes, nGASP data,  
parasitic species, renewal, Chado exploration



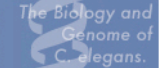
# Introduction: Usage

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**2006: 776,285 page views/month ( > 9x10<sup>6</sup> total )**

## WormBaseRelease WS168

 Find:  
 Exact match  Results as XML  Literature Search

## Web Site Directory

 Release Notes [New/Changed Genes](#), [release notes](#)

 General Searches [WormBase Class Browser](#), [Wormbase Query Language Search](#), [AQL Search](#)

 Sequences [C. elegans Genome](#), [C. briggsae Genome](#), [Gene](#), [Blast / Blat](#), [e-PCR](#), [Gene Ontology](#), [Synteny Viewer](#), [Cis-Elements \(CisOrtho\)](#),

 Cells and Gene Expression [Cell and Pedigree](#), [Neurons](#), [Expression Pattern](#), [Expression profile](#)

 Genetics, Strains, and Phenotypes [Genetic interval](#), [Rearrangements](#), [Clone](#), [Allele](#), [SNPs](#), [Markers](#), and [Strains](#), [Strain Report](#), [Phenotypes](#), [RNAi](#)

 Batch Queries [WormMart \[about...\]](#), [Batch Genes](#), [Batch Sequences](#)

 Downloads and Data Mining [Bulk Downloads](#), [Linking to WormBase and Data Mining...](#)

 Community [Worm Community](#) [Discussion Forum](#), [WormBase Wiki](#), [Mailing Lists](#)

 About WormBase [Mission Statement](#), [User's Guide \(HTML, PDF\)](#), [Newsletters](#), [Citing Wormbase](#), [Positions available](#), [People](#), [Acceptable Use Policy](#)

 RSS News Feeds [WormBase News](#), [Development News](#), [WormMart News](#), [WormBaseWiki: New pages](#), [Recent changes](#), [About News Feeds](#)

## Links

 Worm Reagents [C. elegans genomic clones](#), [C. briggsae genomic clones](#) (information, ordering), [YK EST clones](#), [CGC strains](#), [RNAi clone mapping](#), [Knockouts \(KO Consortium, NBP-Japan\)](#), [SAGE](#), [C. elegans anatomy parts list](#), [GeneService \[Fosmid clones, RNAi libraries, ORFeome v1.1, Promoterome\]](#), [OpenBiosystems \[Orfeome v1.1\]](#), [Fire vectors \(Full list, via AddGene\)](#), [Microarrays \(Affymetrix, Agilent, WUSTL\)](#),

 Related Databases and Web Sites [Nematode.net](#), [Leon Avery's WWW](#), [WormAtlas](#), [Other Model Organism Databases](#) [Worm Meetings](#), and more ([Resources](#))

 Key Publications [WormBook](#), [C. elegans II book \(1997\)](#), [The Mind of a Worm \(White et al, 1986\)](#), [The Genetics of C. elegans \(Brenner, 1974\)](#), [Durbin Ph.D. thesis \(1987\)](#), [Modes et formes... \(Maupas, 1900\)](#), all citations in [EndNote format](#)

 Useful Software [AcePerl](#), [GMOD](#), [BioPerl](#), [ACeDB](#), [MySQL](#), [Textpresso](#), [Sockeye](#) [Genome Browser](#)

 Worm Genome Sequence Centers [Wellcome Trust Sanger Institute C. elegans Site](#), [Washington University C. elegans Site](#) and [SNP site](#)

## News and Notes

- January 09, 2007: December additions to WormBook**

WormBook has expanded its coverage of *C. briggsae* with the addition of "[Caenorhabditis briggsae methods](#)" to [WormMethods](#). Additionally, [WormBook's](#) new [Biochemistry](#) section was launched with "[Carbohydrates and glycosylation](#)". For a monthly email containing information about new additions to [WormBook](#), please sign up at [www.wormbook.org/announce.html](#).

- December 27, 2006: New release of WormBase: WS168**

WormBase has been updated to the WS168 release of the database.

- December 04, 2006: New release of WormBase: WS167**

WormBase has been updated to the WS167 release of the database. New features in this release include the indication of [genes with expression patterns](#) on the [Genome Browser](#) (see the "Expression Patterns" track) and an expanded display of [phenotypes](#).

- November 30, 2006: New Chapters Added to WormBook**

This month, [WormBook](#) has added three new chapters. Our coverage of nematodes other than *C. elegans* has been expanded by the addition of "[Biology and genome of Trichinella spiralis](#)" to the [Genetics and genomics](#) section. Additionally, "[The sensory cilia of Caenorhabditis elegans](#)" has been published in the [Cell biology](#) section and "[Heterotrimeric G proteins in C. elegans](#)" is now available in the [Signal transduction](#) section. For a monthly email containing information about new additions to [WormBook](#), please sign up at [wormbook.org/announce.html](#).

- November 22, 2006: nGASP update**

Expanded training data including repeat sequences, alignment orientation, and updated protein alignment files have been posted on the [nGASP website](#). The deadline for Phase I has been extended to Dec. 31, 2006.

- November 11, 2006: New release of WormBase: WS166**

WormBase has been updated to the WS166 release of the database.

- Old News.**

## Mirror Sites, Data Freezes and Data Mining Server

 Main Site [CSHL \(NY, USA\)](#)

 Development Site [CSHL \(NY, USA\)](#)

## Mirror Sites

- [IMBB \(Crete, Greece\)](#)
- [Caltech \(Pasadena, CA, USA\)](#)
- [University Marseille \(Marseille, France\)](#)
- [Wellcome/Sanger \(Cambridge, UK\)](#)

## Data Freezes (NY, USA)

- [WS160 \(31 July 2006\) \[FTP\]](#)
- [WS150 \(30 Nov 2005\) \[FTP\]](#)
- [WS140 \(26 Mar 2005\) \[FTP\]](#)
- [WS130 \(16 Aug 2004\) \[FTP\]](#)
- [WS120 \(7 Mar 2004\) \[FTP\]](#)
- [WS110 \(1 Oct, 2003\) \[FTP\]](#)
- [WS100 \(10 May 2003\) \[FTP\]](#)

 Data Mining Server [aceserver](#) (CSHL, NY, USA; [about data mining](#))

WormBase is supported by a grant from the National Human Genome Research Institute at the US National Institutes of Health # P41 HG02223 and the British Medical Research Council.

## Scenarios: (Simple) search for a gene

**Find:** Any Gene

Search

unc

unc-1 *unc-1 encodes a homolog of human stomatin (OMI)*

unc-10 *unc-10 encodes a protein with zinc-finger, Q/N-rich*

unc-100

unc-101 *unc-101 encodes an adaptin orthologous to the*

unc-103 *unc-103 encodes an ERG-like K+ channel homol*

**unc-104** *The unc-104 gene encodes a kinesin-like motor*

unc-105 *unc-105 encodes a muscle degenerin, a mechani*

unc-106 *unc-6 encodes a netrin orthologous to the huma*

unc-107 *The vab-8 gene encodes a novel protein contain*

unc-108 *unc-108 encodes a small GTPase homologous t*

unc-109

unc-11 *unc-11 encodes multiple isoforms of a clathrin-ada*

unc-110 *twk-18 encodes one of 44 C. elegans TWK (two-*

unc-111

unc-112 *The unc-112 gene encodes a pleckstrin homolog*

unc-113 *unc-113 is characterized by a single mutation th*

unc-114

unc-115 *unc-115 encodes a protein that binds actin filam*

unc-116 *unc-116 encodes a kinesin-1 heavy chain orthol*

more...

Web S  
Release  
release r  
General  
Browser,  
Search,  
Sequenc  
briggsae  
e-PCR, C  
Cis-Elem  
Cells and Gene Expression Cell and  
Pedigree, Neurons, Expression Pattern,  
Expression profile  
Genetics, Strains, and Phenotypes


nBase

# Scenarios: Search for a gene (results)

[Home](#)
[Genome](#)
[Blast / Blat](#)
[WormMart](#)
[Batch Sequences](#)
[Markers](#)
[Genetic Maps](#)
[Submit](#)
[Searches](#)
[Site Map](#)

Find:

Anything



[Gene Summary](#)
[Locus Summary](#)
[Sequence Summary](#)
[Protein Summary](#)
[EST Alignments](#)
[Genome Browser](#)
[Genetic Map](#)
[Nearby Genes](#)
[Bibliography](#)
[Tree Display](#)
[XML Schema](#)
[Acedb Image](#)

## Gene Summary for unc-104

Specify a gene using a gene name ([unc-26](#)), a predicted gene id ([R13A5.9](#)), or a protein ID ([CE02711](#))

[\[identification\]](#)
[\[location\]](#)
[\[function\]](#)
[\[gene ontology\]](#)
[\[alleles\]](#)
[\[similarities\]](#)
[\[reagents\]](#)
[\[bibliography\]](#)

<b>Identification</b>	<b>IDs:</b>	<b>CGC name</b>	<b>Sequence name</b>	<b>Other name(s)</b>	<b>WB Gene ID</b>	<b>Version</b>
		<a href="#">unc-104 - (<i>UNCoordinated</i>)</a> via person evidence: <a href="#">Jonathan Hodgkin</a>	<a href="#">C52E12.2</a>	<a href="#">klp-1</a> <a href="#">2H299</a> (inferred automatically) <a href="#">NM_171017</a> (inferred automatically)	<a href="#">WBGene00006831</a>	1
	<b>Concise Description:</b>	The <a href="#">unc-104</a> gene encodes a kinesin-like motor protein homologous to human axonal transporter of synaptic vesicles (ATSV, OMIM: 601255), and is required for anterograde axonal transport of synaptic vesicles as well as differentiation of pre- and postsynaptic domains at inhibitory neuromuscular junctions; UNC-104 is expressed solely in neurons. <a href="#">[details]</a>				
	<b>NCBI KOGs*:</b>	Kinesin-like protein <a href="#">[KOG0245]</a>				
	<b>Species:</b>	<i>Caenorhabditis elegans</i>				
	<b>NCBI:</b>	<a href="#">[Entrez Genes: 27713427]</a> <a href="#">[AceView: 2H299]</a>				



## One solution: "Togglable" sections

Gene Model	Status	Nucleotides (coding/transcript)	Protein	Amino Acids
T07H8.4a <sup>1, 2, 3, 4, 5, 6</sup>	confirmed by cDNA(s)	6024/9715 bp	WP:CE37668	2007 aa
T07H8.4b <sup>7, 8, 9, 10</sup>	confirmed by cDNA(s)	5058/8419 bp	WP:CE37669	1685 aa
T07H8.4c <sup>11, 12, 13</sup>	partially confirmed by cDNA(s)	3504/4701 bp	WP:CE37670	1167 aa
T07H8.4d.1 <sup>1, 14, 15</sup>	confirmed by cDNA(s)	5988/9716 bp	WP:CE37671	1995 aa
T07H8.4d.2 <sup>1, 14, 15</sup>	confirmed by cDNA(s)	5988/9770 bp	WP:CE37671	1995 aa
T07H8.4e <sup>1, 16, 17</sup>	confirmed by cDNA(s)	5865/9275 bp	WP:CE37672	1954 aa
T07H8.4f.1 <sup>18, 19, 20</sup>	confirmed by cDNA(s)	5457/9617 bp	WP:CE37673	1818 aa
T07H8.4f.2 <sup>18, 19, 20</sup>	confirmed by cDNA(s)	5457/9617 bp	WP:CE37673	1818 aa
T07H8.4g <sup>21, 22, 23</sup>	predicted	4815/7555 bp	WP:CE37674	1604 aa
T07H8.4h <sup>1, 24, 25</sup>	confirmed by cDNA(s)	6021/9845 bp	WP:CE37675	2006 aa

### Footnotes

<sup>1</sup> C. elegans MEC-1 protein; contains similarity to Pfam domains PF07645 (Calcium binding EGF domain), PF00014 (Kunitz/Bovine pancreatic trypsin inhibitor domain)(14)contains similarity to Interpro domains IPR000152 (Aspartic acid and asparagine hydroxylation site), IPR001881 (EGF-like calcium-binding), IPR008296 (Proteinase inhibitor I2, tissue factor pathway inhibitor), IPR000742 (EGF-like, type 3), IPR002223 (Proteinase inhibitor I2, Kunitz metazoa), IPR006210 (EGF), IPR013032 (EGF-like region), IPR013091 (EGF calcium-binding)

<sup>10</sup> this isoform is based on EMBL accession BJ137598

<sup>11</sup> C. elegans MEC-1 protein; contains similarity to Pfam domains PF07645 (Calcium binding EGF domain), PF00014 (Kunitz/Bovine pancreatic trypsin inhibitor domain)(5)contains similarity to Interpro domains IPR000152 (Aspartic acid and asparagine hydroxylation site), IPR001881 (EGF-like calcium-binding), IPR008296 (Proteinase inhibitor I2, tissue factor pathway inhibitor), IPR000742 (EGF-like, type 3), IPR002223 (Proteinase inhibitor I2, Kunitz metazoa), IPR006210 (EGF), IPR013032 (EGF-like region), IPR013091 (EGF calcium-binding)

<sup>12</sup> made this isoform based on EST data(yk1004d03.3)[20040929 po]

<sup>13</sup> this isoform is based on EMBL accession AU220987

<sup>14</sup> made this isoform based on mRNA data(AY532176)[20040929 po]

<sup>15</sup> this isoform is based on EMBL accession AY532176

<sup>16</sup> added this isoform based on mRNA data(AY532250)[20040929 po]

<sup>17</sup> this isoform is based on EMBL accession AY532250

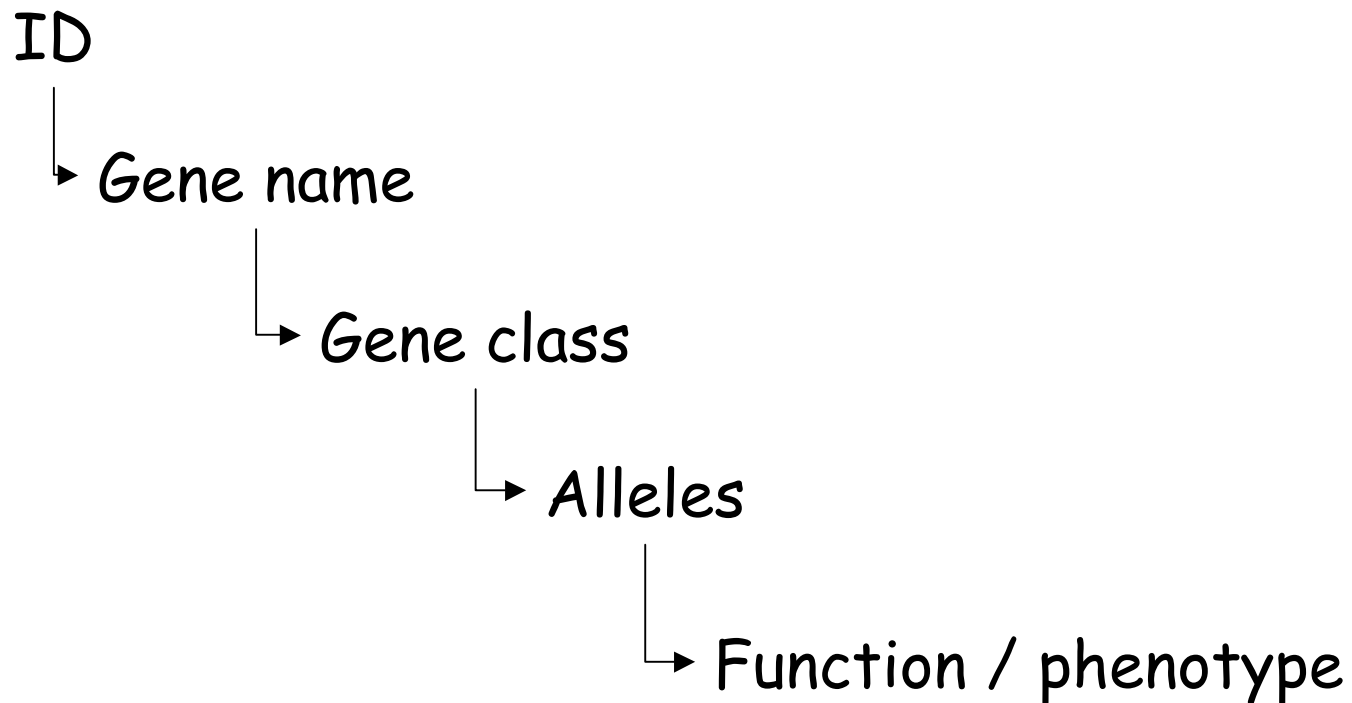
<sup>18</sup> C. elegans MEC-1 protein: contains similarity to Pfam domains PF07645 (Calcium binding EGF domain). PF00014



## *Scenarios: Search for a gene*

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### Multi-tiered, class-specific searches



# Scenarios: Gene search by biological concept

Find:

Exact match  Results as XML  Literature Search

- Gene: **brc-1** (C36A4.8; 3E944; NM\_065379; WBGene00000264: The brc-1 gene encodes a homolog of human BRCA1 (mutated in...)
- Gene: **brc-2** (T07E3.5; 3H990; NM\_066101; WBGene00020316: The T07E3.5 gene encodes a single BRC domain (in residues...)
- Gene: **brd-1** (K04C2.4; 3H976; NM\_066097; WBGene00000265: brd-1 encodes an ortholog of the BRCA1-associating protein...)
- Gene: **bub-1** (R06C7.8; 1H831; NM\_059650; WBGene00000275: bub-1 encodes a serine/threonine kinase orthologous to...)
- Gene: **cbp-1** (R10E11.1; cep-1; 3K863; NM\_066759; NM\_066760; WBGene00000366: cbp-1 encodes a homolog of the mammalian transcriptional...)
- Gene: **daf-18** (T07A9.6; 4B174; NM\_067525; WBGene00000913: daf-18 encodes a lipid phosphatase homologous to the human...)
- Gene: **dep-1** (F44G4.8; 2J296; NM\_063524; WBGene00009717: dep-1 encodes a class III receptor protein tyrosine...)
- Gene: **dic-1** (F08B4.1; 4J459; WBGene00000994: dic-1 encodes an ortholog of Drosophila CG3125 and human...)
- Gene: **dog-1** (F33H2.1; 1P610; NM\_061217; WBGene00001049: dog-1 encodes a predicted DEAH helicase, orthologous to the...)
- Gene: **hoe-1** (E04A4.4; 4F504; WBGene00001983: hoe-1 is orthologous to human ELAC2 (OMIM:605367,...))
- Gene: **msh-2** (H26D21.2; 1E264; NM\_058801; WBGene00003418: The msh-2 gene encodes a DNA mismatch repair protein...)
- Gene: **nft-1** (Y56A3A.13; NitFhit; 3N17; NM\_067155; WBGene00003594: The nft-1 gene encodes an ortholog of human FHIT, which...)
- Gene: **par-4** (Y59A8B.14; 5S585; NM\_075132; WBGene00003919: par-4 encodes a serine-threonine kinase that is homologous...)
- Gene: **T13H5.8** (2I809; WBGene00011761: T13H5.8 is the closest C. elegans homolog of the human gene...)
- Gene: **T14F9.3** (XC843; WBGene00020509: T14F9.3 is orthologous to the human gene CERVICAL CANCER...)
- Gene: **Y55D9A.1** (4N370; WBGene00013223: Y55D9A.1 encodes a putative guanine nucleotide exchange...)
- Gene: **Y73E7A.6** (bc10; 1C82; WBGene00022273)
- Gene: **ZK686.3** (3I858; WBGene00022793: ZK686.3 is orthologous to the putative tumor suppressor N33...)



# Scenarios: Gene search by ontology

## Gene Ontology Search

Query Term or ID	Limit To Terms Attached To	
<p><i>Enter a gene ontology ID (GO:0004437), a gene (unc-26; T20H4.4), or a brief text description (endocytosis)</i></p> <input type="text"/>	<ul style="list-style-type: none"><li><input type="checkbox"/> Anatomy ontology</li><li><input type="checkbox"/> CDS</li><li><input type="checkbox"/> Cells</li><li><input type="checkbox"/> Expression patterns</li><li><input type="checkbox"/> Genes</li><li><input type="checkbox"/> Homology groups</li><li><input type="checkbox"/> Motifs</li><li><input type="checkbox"/> Phenotypes</li><li><input type="checkbox"/> Psuedogenes</li><li><input type="checkbox"/> Publications</li><li><input type="checkbox"/> Transcripts</li></ul>	<input type="button" value="Submit"/>



# Scenarios: Gene search by ontology

## Gene Ontology Summary for term: GO:0004437

Annotations: Genes/CDSs	<i>This Gene Ontology term has been assigned to the following Genes/CDSs:</i>				
	CGC	Sequence	Gene ID	Description	Evidence
	gly-5	Y39E4B.12	<a href="#">WBGene00001630</a>	gly-5 encodes a predicted member of the UDP-GalNAc	IEA: INTERPRO:IPR000760
	ipp-5	C09B8.1	<a href="#">WBGene00002146</a>	ipp-5 encodes a type I inositol 5-phosphatase homo	IEA: INTERPRO:IPR000300
	mtm-1	Y110A7A.5	<a href="#">WBGene00003475</a>	mtm-1 encodes an ortholog of human myotubularin (M	IEA: INTERPRO:IPR010569
	mtm-3	T24A11.1	<a href="#">WBGene00003476</a>		IEA: INTERPRO:IPR010569
	mtm-5	H28G03.6	<a href="#">WBGene00003477</a>		IEA: INTERPRO:IPR010569
	mtm-6	F53A2.8	<a href="#">WBGene00003478</a>	mtm-6 encodes a myotubularin-related protein that	IEA: INTERPRO:IPR010569
	mtm-9	Y39H10A.3	<a href="#">WBGene00003479</a>	mtm-9 encodes a myotubularin-related protein that	IEA: INTERPRO:IPR010569
	ocrl-1	C16C2.3	<a href="#">WBGene00007620</a>	The C16C2.3 gene encodes an inositol-1,4,5-triphos	IEA: INTERPRO:IPR000300
	tag-231	ZK430.2	<a href="#">WBGene00044063</a>		IEA: INTERPRO:IPR000760
	unc-26	JC8.10	<a href="#">WBGene00006763</a>	unc-26 encodes synaptojanin, a polyphosphoinositid	ISS: <a href="#">Harris TW et al.</a> <a href="#">PubMed</a>
	[33 Genes found; 10 displayed; <a href="#">view all</a> ]				
Annotations: Motif	<i>This Gene Ontology term has been assigned to the following Motifs:</i>				
	Motif	Description	Evidence		
	<a href="#">INTERPRO:IPR000300</a>	Inositol polyphosphate related phosphatase			
	<a href="#">INTERPRO:IPR000760</a>	Inositol monophosphatase			
	<a href="#">INTERPRO:IPR010569</a>	Myotubularin-related			



# Scenarios: Generate a customized report

## Batch Genes

This page facilitates the batch retrieval of information for a given set of genes, CDSes, proteins, or transcripts. This is useful for cross-comparing important parameters in a concise table-formatted display. Tab-delimited text file output is also available for post-processing.

Type or paste in a list of genes, separated by **return**. You may use genetic loci (*unc-26*), gene IDs (R13A5.9), protein IDs (WP:CE00072), or CDS IDs (JC8.10a). The \* wildcard is also accepted: *unc\** will list all unc genes, *T20G5\** will list all genes on T20G5.

Please see the [help](#) page for additional information.

Genes, Loci, or Proteins	Prefabricated Queries		
		<input type="text" value="List all genetically-defined genes"/>	<input type="button" value="Submit Prefab Query"/>
	<b>Build Your Own</b>		
<div style="border: 1px solid black; width: 100%; height: 100%;"></div>	<b>External Database IDs</b>	<input checked="" type="checkbox"/> EuGenes <input checked="" type="checkbox"/> GenBank <input checked="" type="checkbox"/> GenPep <input checked="" type="checkbox"/> Intronerator <input checked="" type="checkbox"/> SwissProt <input checked="" type="checkbox"/> WormPD	<b>Gene</b> <input type="checkbox"/> Allele, reference <input type="checkbox"/> Alleles <input type="checkbox"/> Alleles, total number of <input type="checkbox"/> CDS <input type="checkbox"/> Gene (public name) <input type="checkbox"/> Locus (canonical) <input type="checkbox"/> Ortholog (C. briggsae) <input type="checkbox"/> Other locus names <input type="checkbox"/> Position, genetic map <input type="checkbox"/> Position, physical map <input type="checkbox"/> Transcript <input type="checkbox"/> Phenotype
	<b>WormBase IDs</b>	<input checked="" type="checkbox"/> WB Gene ID <input checked="" type="checkbox"/> WB Wormpep ID	<b>Phenotype</b> <input type="checkbox"/> RNAi <input type="checkbox"/> Subcellular localization
	<b>Protein</b>	<input type="checkbox"/> NCBI KOGs <input type="checkbox"/> Prominent motifs <input type="checkbox"/> Protein	<b>Reagents</b> <input type="checkbox"/> Antibody <input type="checkbox"/> Microarray Probes <input type="checkbox"/> Strains <input type="checkbox"/> Transgene, drives <input type="checkbox"/> Transgene, product <input type="checkbox"/> Transgene, rescued by
	<b>General</b>	<input type="checkbox"/> Brief identification <input type="checkbox"/> Concise description <input type="checkbox"/> Gene ontology terms <input type="checkbox"/> Laboratory <input type="checkbox"/> Papers (long) <input type="checkbox"/> Papers (short) <input type="checkbox"/> Remarks <input type="checkbox"/> Species <input type="checkbox"/> Status	<b>Sequence</b> <input type="checkbox"/> Spliced DNA <input type="checkbox"/> Spliced length <input type="checkbox"/> Translation <input type="checkbox"/> Translation length <input type="checkbox"/> Unspliced DNA <input type="checkbox"/> Unspliced length
	<b>Expression</b>	<input type="checkbox"/> Expression patterns	
	<b>Format</b>		<input checked="" type="radio"/> HTML <input type="radio"/> Plain Text <input type="radio"/> Save To File
			<input type="button" value="Reset"/> <input type="button" value="Submit Query"/>



# Scenarios: Generate bulk output - WormMart

**new** **START** **FILTER** **OUTPUT** **export**

**back** **export**

Select the Attribute Page

Gene Structures (Exon-Level)

**GENE:**

**IDs**

- Gene WB ID
- Gene Public Name
- Sequence Name (Gene)

**Gene Models**

- Sequence Name (CDS)
- CDS Count
- Transcript Type
- CDS Prediction Status
- Sequence Name (Transcript)
- Transcript Count
- Transcript UTR Annotation
- WB Wormpep ID

**Genomic Position**

- Chr Name
- Start (bp)
- Strand
- End (bp)

**EXON:**

**structure**

- Exon Name
- Exon Start (bp)
- Coding Start (bp)
- 5'UTR Start (bp)
- 3'UTR Start (bp)
- Intron Start (bp)
- Exon Rank
- Exon End (bp)
- Coding End (bp)
- 5'UTR end (bp)
- 3'UTR End (bp)
- Intron End (bp)

- 5' Intergenic End (bp)
- 3' Intergenic End (bp)
- 5' Intergenic Start (bp)
- 3' Intergenic Start (bp)

wormmart

count **Help Desk** **Online Help**

**Summary**

**start**

- Schema: WormBase Release WS168
- Dataset: Gene
- 45182 Entries Total

**filter**

- Species: Caenorhabditis elegans
- Limit to Chromosome:: C.elegans Chr I
- [Gene] Status: Live
- 3087 Entries pass Filters

**output**

- Gene Structures (Exon-Level)
- 3087 Results in Output

WormBase

# BioMart - New Interface

New XML Help Count Results

## » Dataset:

Gene

» **Attributes** (Gene Features and Annotations)

Gene WB ID

Gene Public Name

## » **Filters**

Limit to Species: :

Caenorhabditis elegans

## » Dataset:

Phenotype

## » **Attributes**

Phenotype ID

Phenotype Name

## » **Filters**

phenotype : dumpy

## ⊞ Identification

Limit to Species:

Caenorhabditis elegans ▼

Limit to Gene ID(s) of Type:

caenorhabditis\_elegans [Gene] WB ID [eg WBGene00006763] ▼

Browse...

Limit to Gene Class:

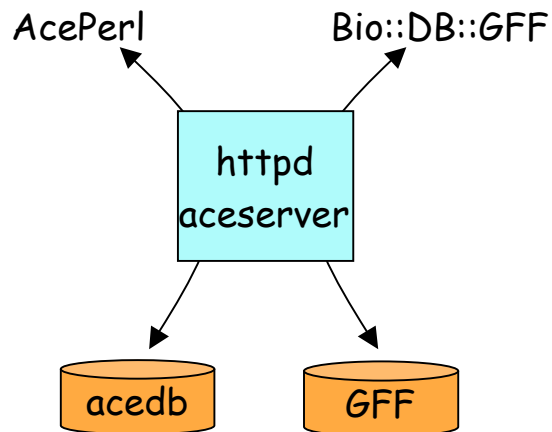
## ⊞ Location

## ⊞ Homologs/Orthologs

## ⊞ Annotation

# Scenarios: Generate bulk output - APIs, queries

## APIs



## Raw queries

### AQL Search

- This search uses new AQL syntax to search Acedb.
- Example 1: Find loci between positions 5 and 10 on chromosome IV

```
select l, pos from l in class Gene,
      map in l->Map where map = "IV",
      pos in map[Position] where pos > 5.0 and pos < 10.0
```
- Example 2: Find primer pairs, the genes they overlap and their overlapping oligos

```
select l, l->Overlaps_CDS, l->Oligo->Sequence
from l in class PCR_Product
where exists l->Overlaps_CDS
```
- See the Acedb web site for [documentation](#) and [examples](#)

  
 Query ACeDB  HTML output  Text output

### Wormbase Query Language Search

- This search uses the old-style Ace Query Language.
- Type in a search term using the Ace query language. Separate multiple statements with semicolons.
- Examples:
  - find Author COUNT Paper > 100
  - find Author IS "Garvin"; >Laboratory; >Staff
- [Examples for querying GrainGenes and MaizeDB databases \[external link\]](#)
- [Documentation and more examples \[external link\]](#)

  
 Query ACeDB  HTML output  Text output



# Scenarios: Combining results - standard URLs

---



## Model Organism Database Standard URLs

### WormBase / genome

---

This is the index page for [WormBase](#) datasets available through the GMOD common URL protocol. The following species are available:

Short name	Binomial name	description
<a href="#">C_elegans</a>	Caenorhabditis_elegans	The soil nematode, C. elegans
<a href="#">C_briggsae</a>	Caenorhabditis_briggsae	The soil nematode, C. briggsae

*For additional details about these datasets, contact [help@wormbase.org](mailto:help@wormbase.org).*

### About GMOD common URLs

---

#### Overview

In order to simplify the retrieval of common datasets, the Generic Model Organisms Database (GMOD) community has implemented a series of standard URLs. Each MOD has an index page like this one describing the species and datasets that are available. Read more about the GMOD project at [www.gmod.org](http://www.gmod.org).

#### Available URLs

Version 1.0 of the common URL specification defines the following URLs (all located under <http://yoursite.org/>):

<code>/genome</code>	Display this HTML-formatted index page that contains links to each of the species available through common URLs.
<code>/genome/Binomial_name</code>	An index page for species "Binomial_name". This will be an HTML-format page containing links to each of the genome releases.
	It leads to index for the named release. It should be an HTML-format page



# Miscellany: Site Map

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## WormBase Site Map

[Outline View](#) | [Detailed View](#) | [Alphabetical View](#) | [Searches](#) | [Old Search Index](#)

Categories:

### Genes

<a href="#">Genes</a>	<i>The Gene Summary displays gene models, sequences, functional information, and bibliographies for <a href="#">three-letter locus names</a> and <a href="#">predicted genes</a>.</i>
<a href="#">Gene Classes</a>	<i>The Gene Class page summarizes information on three- and four- letter gene classes. Entering a specific class such as <a href="#">unc</a> or <a href="#">egl</a> displays all genes associated with that class.</i>
<a href="#">Alleles And Polymorphisms</a>	<i>The Allele Summary includes information on isolation, mutagen, strains, and phenotype. When available, it will also display the sequence and predicted effect on transcripts and proteins</i>
<a href="#">Operons</a>	<i>The Operon Summary provides information on specific operons keyed by <a href="#">operon ID</a>.</i>
<a href="#">Gene Regulation</a>	<i>The Gene Regulation Summary displays manually curated regulation of expression data. Regulation data can be retrieved by <a href="#">three-letter locus name</a>, <a href="#">predicted gene ID</a>, or <a href="#">gene regulation ID</a>.</i>

### Phenotypes

<a href="#">Phenotype</a>	<i>The Phenotype display provides a simple mechanism to search the phenotype ontology.</i>
<a href="#">RNAi</a>	<i>The RNAi display provides information on RNAi experiments using either a <a href="#">three letter locus name</a>, a <a href="#">molecular gene ID</a>, or an <a href="#">RNAi experiment ID</a>.</i>
<a href="#">RNAi Search</a>	<i>This page provides a search-based approach to browsing RNAi by phenotype and lifestage. For example, from this page, it is possible to find all RNAi experiments that result in an uncoordinated post-embryonic</i>

# Miscellany: Common UI elements - navigation

## Site wide navigation bar

Home Genome Blast / Blat WormMart Batch Sequences Markers Genetic Maps Submit Searches Site Map

Find:    
 Anything

**WormBase** The Biology and Genome of *C. elegans*.

Gene Summary Locus Summary Sequence Summary Protein Summary EST Alignments Genome Browser Genetic Map Nearby Genes Bibliography Tree Display XML Schema Acedb Image

## Contextual navigation bar

### Locus

Gene Summary Locus Summary Genetic Map Nearby Genes Bibliography Tree Display XML Schema Acedb Image

### Cloned locus

Gene Summary Locus Summary Sequence Summary Protein Summary EST Alignments Genome Browser Genetic Map Nearby Genes Bibliography Tree Display XML Schema Acedb Image

### Predicted gene

Gene Summary Sequence Summary Protein Summary EST Alignments Genome Browser Genetic Map Nearby Genes Bibliography Tree Display XML Schema Acedb Image



# Miscellany: Common UI - Autocomplete

## From the Home Page

Home Genome Blast / Blat WormMart Batch Sequences Markers Genetic Maps Submit Searches Site Map

WormBaseRelease WS169

WormBase development site. Master is at [www.wormbase.org](http://www.wormbase.org)

Find: Anything  Search

Exact match  Results

**meiosis** The specialized nuclear and cell division in which a single diploid cell undergoes two successive divisions to produce four haploid daughter cells.

**meiosis I** Progression through the first phase of meiosis, in which cells divide and homologous chromosomes exchange genetic material.

**meiosis I nuclear envelope disassembly** The controlled breakdown of the nuclear envelope during the first phase of meiosis.

**meiosis I nuclear envelope reassembly** The reformation of the nuclear envelope during the first phase of meiosis.

**meiosis II** Progression through the second phase of meiosis, in which cells divide and sister chromatids separate.

**meiosis II nuclear envelope disassembly** The controlled breakdown of the nuclear envelope during the second phase of meiosis.

**meiosis II nuclear envelope reassembly** The reformation of the nuclear envelope during the second phase of meiosis.

News: Oct 08 Controlling the timing of meiosis in *P. ginseng*; Aug 08 Please take a few moments to complete a [brief survey](#) concerning current and future Topics

Web Site Directory  
 Release Notes [New/Changed Genes](#), [release notes](#)  
 General Searches [WormBase Class Browser](#), [Wormbase Query Language Search](#), [AQL Search](#)

## From individual report pages

### Gene Summary for unc-2

Specify a gene using a gene name ([unc-26](#)), a predicted gene id ([R13A5.9](#)), or a protein ID ([CE02711](#))

[\[identification\]](#) [\[location\]](#) [\[function\]](#) [\[expression\]](#) [\[gene ontology\]](#) [\[alleles\]](#) [\[similar\]](#)

Identification	IDs:	CGC name	Sequence name
		<a href="#">unc-2 - (UNCoordinated)</a> via person evidence: <a href="#">Jonathan Hodgkin</a>	T02C5.5

**Concise Description:** [unc-2](#) encodes a calcium channel alpha subunit required for desensitization and movement, normally low sensitivity of whole animals to serotonin, and [UNC-2](#) is orthologous to human CACNA1A ([OMIM:601011](#), mutated in *Drosophila* CACOPHONY; [UNC-2](#) is expressed primarily in motor neurons controlling egg-laying. [\[details\]](#)

**NCBI KOGs\*:** Voltage-gated Ca<sup>2+</sup> channels, alpha1 subunits [[KOG2301](#)]

**Species:** *Caenorhabditis elegans*

**Other sequence(s):** [AY264781](#) (*Caenorhabditis elegans* high voltage activated calcium channel alpha 1 subunit (unc-2) mRNA, complete cds)

**mech-1** [mec-1](#) encodes proteins with multiple disulfide-linkages.

**mec-10** The [mec-10](#) gene encodes an amiloride-sensitive Na<sup>+</sup> channel.

**mec-12** [mec-12](#) encodes a novel *C. elegans* alpha-tubulin.

**mec-13** [mec-4](#) encodes an amiloride-sensitive Na<sup>+</sup> channel.

**mec-14** [mec-14](#) encodes a protein with similarity to the beta subunit of the Na<sup>+</sup> channel.

**mec-15** Uncloned locus required for response to gentle touch.

**mec-16** [tab-1](#) encodes a homeodomain protein homologous to the *Drosophila* [Tbx20](#).

**mec-17** [mec-17](#) encodes a protein that has no clearly defined function.

**mec-18** [mec-18](#) encodes a protein similar to firefly luciferase.

**mec-2** The [mec-2](#) gene encodes a stomatin homolog required for touch sensitivity.

**mec-3** [mec-3](#) encodes a founding member of the LIM (LIM-like) domain protein family.

**mec-5** [mec-5](#) encodes a collagen unique in the number of alpha-helical repeats.

**mec-6** [mec-6](#) is homologous to the human [PARAOXONASE 1](#).

**mec-7** [mec-7](#) encodes a beta-tubulin required for touch sensitivity.

[more...](#)



## Miscellany: Community contributed section

	<p><b>NCBI KOGs<sup>™</sup>:</b> TGFbeta receptor signaling protein SMAD and related proteins [<a href="#">KOG3701</a>]</p> <p><b>Species:</b> <i>Caenorhabditis elegans</i></p> <p><b>Other sequence(s):</b> <a href="#">U34902</a> (Caenorhabditis elegans sma-3 mRNA, complete cds.)</p> <p><b>NCBI:</b> [Entrez Genes: <a href="#">15145399</a>] [AceView: <a href="#">3H952</a>]</p> <p><b>Gene model(s):</b></p> <table border="1"> <thead> <tr> <th>Gene Model</th> <th>Status</th> <th>Nucleotides (coding/transcript)</th> <th>Protein</th> <th>Amino Acids</th> </tr> </thead> <tbody> <tr> <td><a href="#">R13F6.9</a> <sup>1,2</sup></td> <td>confirmed by cDNA(s)</td> <td>1182/3007 bp</td> <td><a href="#">WP:CE25974</a></td> <td>393 aa</td> </tr> </tbody> </table> <p><a href="#">Footnotes</a></p>	Gene Model	Status	Nucleotides (coding/transcript)	Protein	Amino Acids	<a href="#">R13F6.9</a> <sup>1,2</sup>	confirmed by cDNA(s)	1182/3007 bp	<a href="#">WP:CE25974</a>	393 aa
Gene Model	Status	Nucleotides (coding/transcript)	Protein	Amino Acids							
<a href="#">R13F6.9</a> <sup>1,2</sup>	confirmed by cDNA(s)	1182/3007 bp	<a href="#">WP:CE25974</a>	393 aa							
<p><b>Community Summary</b></p>	<p><i>The information in this section is contributed by community members and is not curated by WormBase staff.</i></p> <div style="border: 1px solid gray; padding: 5px;"> <p>This gene has strong sequence similarity to the fly, human and house orthologues of mothers against decapentaplegic homolog 5 (SMAD 5) and should be considered to be the worm ortholog of SMAD 5.</p> </div> <div style="text-align: right;"> <input type="button" value="Update"/> </div>										
<p><b>Location</b></p>	<p><b>Genetic Position:</b> III:-0.93 +/- 0.001 cM [mapping data]</p> <p><b>Genomic Position:</b> III:6863907..6860901 bp</p> <p><b>Genomic Environs:</b> <a href="#">browse region</a></p>										

# Miscellany: Forum

Forum Home    WormBase    WormAtlas    WormBook

## Worm Community Forum

**USER INFO**  
 Hey, **tharris**, you have [1 message](#), 0 are new.  
Total time logged in: 16 hours and 47 minutes.  
[Show unread posts since last visit.](#)  
[Show new replies to your posts.](#)  
January 08, 2007, 06:18:48 PM

**NEWS BOX**  
Welcome to the Worm Community forum! You must be registered in order to post.

**?**  
177 Posts in 91 Topics by 148 Members  
Latest Member: [Sebiha](#)

Search:   [Advanced search](#)

[HOME](#) [HELP](#) [SEARCH](#) [ADMIN](#) [PROFILE](#) [LOGOUT](#)

### Worm Community Forum

**Announcements**

 <b>General News</b> General news and announcements related to C. elegans, WormBase, WormAtlas, CGC, etc.	9 Posts in 8 Topics	Last post on January 05, 2007, 08:11:27 AM in <a href="#">December 27, 2006: New r...</a> by <a href="#">tmoderator</a>
 <b>Meeting Announcements</b> Announcements and discussions about upcoming meetings	9 Posts in 9 Topics	Last post on January 06, 2007, 06:38:26 AM in <a href="#">Tri-State Worm Meeting</a> by <a href="#">tmoderator</a>
 <b>Job Postings</b>	3 Posts in 3 Topics	Last post on December 11, 2006, 11:40:11 AM in <a href="#">Postdoc and Research Ins...</a> by <a href="#">richard_nass</a>

**General Forum**

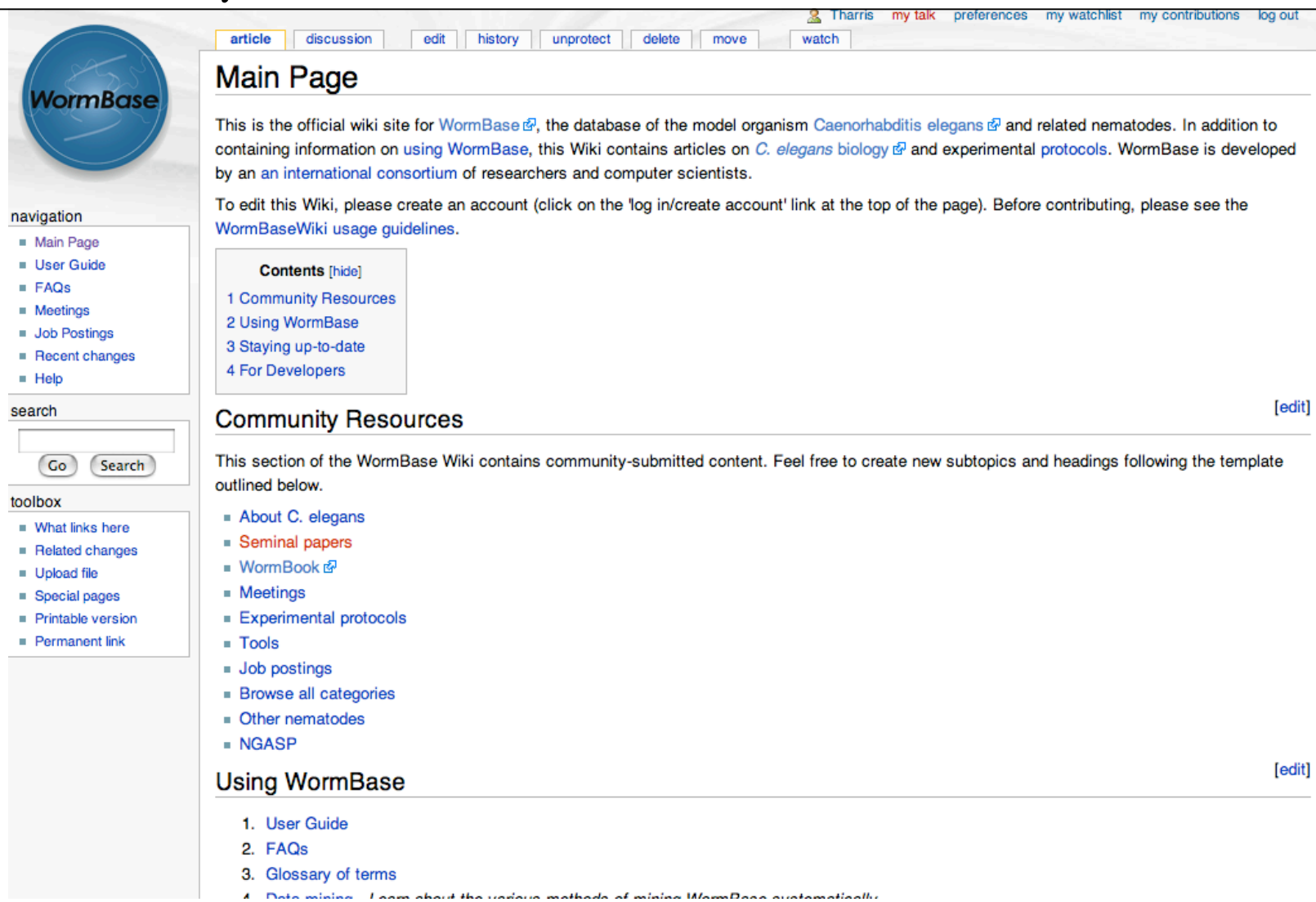
 <b>General Scientific Discussion Area</b> General scientific discussion, questions and comments about worms not covered by other topics	19 Posts in 5 Topics	Last post on December 05, 2006, 02:19:58 PM in <a href="#">Re: Coding versus non-co...</a> by <a href="#">kbradnam</a>
 <b>Worm e-Gazette</b> Share your findings and small pieces of data that may otherwise never see the light of the day. Unpublished information, cite only with author permission!	2 Posts in 2 Topics	Last post on November 10, 2006, 06:44:32 AM in <a href="#">Guidelines for submissio...</a> by <a href="#">tmoderator</a>
 <b>Methods, Protocols, Reagents, Strains, Microscopy</b> All about methods and protocols <i>Child Boards: <a href="#">General</a>, <a href="#">Strains, Alleles, and Constructs</a>, <a href="#">Molecular Biology</a>, <a href="#">Genetics</a>, <a href="#">Microscopy</a></i>	47 Posts in 17 Topics	Last post on January 04, 2007, 09:14:02 AM in <a href="#">MOVED: synchronizing wor...</a> by <a href="#">tmoderator</a>
 <b>WormBase</b> Discuss and report issues concerning WormBase operation as well as genome annotations <i>Child Boards: <a href="#">General Usage</a>, <a href="#">Annotations Issues</a>, <a href="#">Data Mining</a>, <a href="#">Bug Reports</a>, <a href="#">Feature Requests</a></i>	39 Posts in 18 Topics	Last post on January 04, 2007, 09:32:38 AM in <a href="#">Overlapping coding exons</a> by <a href="#">aw3</a>

<http://www.wormbase.org/forums/>

GMOD UI Caucus - Jan 2007



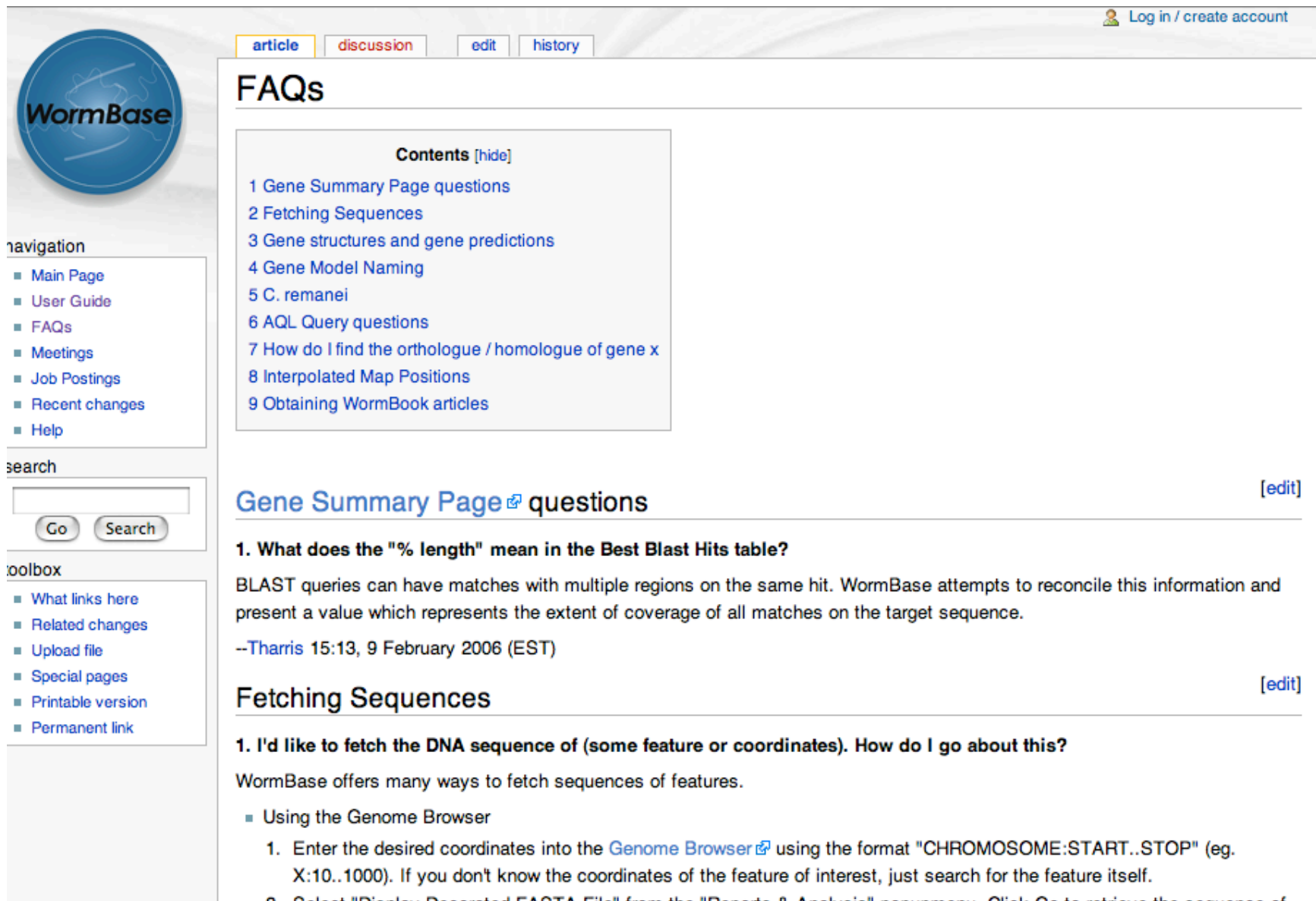
# Miscellany: WormBase Wiki



The screenshot shows the WormBase Wiki Main Page. At the top, there is a navigation bar with links for 'article', 'discussion', 'edit', 'history', 'unprotect', 'delete', 'move', and 'watch'. The user 'Tharris' is logged in, with links for 'my talk', 'preferences', 'my watchlist', 'my contributions', and 'log out'. On the left side, there is a 'WormBase' logo and a 'navigation' menu with links to 'Main Page', 'User Guide', 'FAQs', 'Meetings', 'Job Postings', 'Recent changes', and 'Help'. Below the navigation menu is a 'search' box with 'Go' and 'Search' buttons. Further down is a 'toolbox' with links for 'What links here', 'Related changes', 'Upload file', 'Special pages', 'Printable version', and 'Permanent link'. The main content area features a 'Main Page' section with a description of the site as the official wiki for *Caenorhabditis elegans* and related nematodes. It includes a 'Contents' table of contents with four items: '1 Community Resources', '2 Using WormBase', '3 Staying up-to-date', and '4 For Developers'. Below this is a 'Community Resources' section with a list of links: 'About C. elegans', 'Seminal papers', 'WormBook', 'Meetings', 'Experimental protocols', 'Tools', 'Job postings', 'Browse all categories', 'Other nematodes', and 'NGASP'. The final section is 'Using WormBase', which lists '1. User Guide', '2. FAQs', '3. Glossary of terms', and '4. Data mining'. The page also includes '[edit]' links at the end of the 'Community Resources' and 'Using WormBase' sections.

<http://www.wormbase.org/wiki>

# Miscellany: Wiki (FAQs, SOPs, User Guides)



The screenshot shows the WormBase Wiki interface. At the top right, there is a "Log in / create account" link. Below it are navigation tabs for "article", "discussion", "edit", and "history". The main heading is "FAQs". A "Contents" box lists nine items, with the first one, "1 Gene Summary Page questions", being the current page. The left sidebar contains a "WormBase" logo, a "navigation" menu with links to Main Page, User Guide, FAQs, Meetings, Job Postings, Recent changes, and Help; a "search" box with "Go" and "Search" buttons; and a "toolbox" menu with links to What links here, Related changes, Upload file, Special pages, Printable version, and Permanent link. The main content area shows the start of the "Gene Summary Page questions" section, including a sub-heading "1. What does the \"% length\" mean in the Best Blast Hits table?", a paragraph about BLAST queries, and a timestamp "--Tharris 15:13, 9 February 2006 (EST)". Below this is the "Fetching Sequences" section, starting with "1. I'd like to fetch the DNA sequence of (some feature or coordinates). How do I go about this?", followed by a paragraph and a sub-heading "Using the Genome Browser".

Log in / create account

article discussion edit history

## FAQs

**Contents** [hide]

- 1 Gene Summary Page questions
- 2 Fetching Sequences
- 3 Gene structures and gene predictions
- 4 Gene Model Naming
- 5 C. remanei
- 6 AQL Query questions
- 7 How do I find the orthologue / homologue of gene x
- 8 Interpolated Map Positions
- 9 Obtaining WormBook articles

navigation

- Main Page
- User Guide
- FAQs
- Meetings
- Job Postings
- Recent changes
- Help

search

Go Search

toolbox

- What links here
- Related changes
- Upload file
- Special pages
- Printable version
- Permanent link

### Gene Summary Page [↗](#) questions [\[edit\]](#)

#### 1. What does the "% length" mean in the Best Blast Hits table?

BLAST queries can have matches with multiple regions on the same hit. WormBase attempts to reconcile this information and present a value which represents the extent of coverage of all matches on the target sequence.

--Tharris 15:13, 9 February 2006 (EST)

### Fetching Sequences [\[edit\]](#)

#### 1. I'd like to fetch the DNA sequence of (some feature or coordinates). How do I go about this?

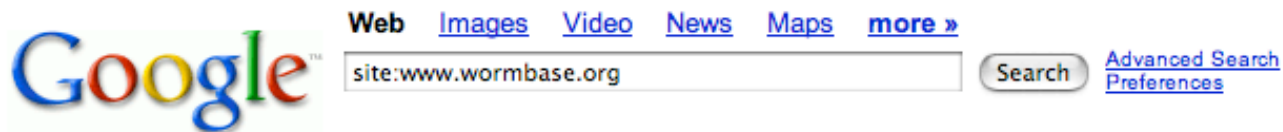
WormBase offers many ways to fetch sequences of features.

- Using the Genome Browser
  - 1. Enter the desired coordinates into the [Genome Browser](#) [↗](#) using the format "CHROMOSOME:START..STOP" (eg. X:10..1000). If you don't know the coordinates of the feature of interest, just search for the feature itself.
  - 2. Select "Display Decorated FASTA File" from the "Reports & Analysis" pop-up menu. Click Go to retrieve the sequence of



# Miscellany: Google indexing

[Sign in](#)



**Web**

Results 1 - 10 of about 98,800 from [www.wormbase.org](http://www.wormbase.org). (0.42 seconds)

## [WormBase - Home Page](#)

Data bases on the genetics of *C. elegans* and related nematodes.

[www.wormbase.org/](http://www.wormbase.org/) - 21k - Jan 15, 2007 - [Cached](#) - [Similar pages](#)

## [Worm Community Forum - Index](#)

Worm Community Forum - Index. ... Welcome, Guest. Please login or register. Did you miss your activation email? January 14, 2007, 02:42:56 PM ...

[www.wormbase.org/forums/](http://www.wormbase.org/forums/) - 36k - [Cached](#) - [Similar pages](#)

## [Main Page - WormBaseWiki](#)

From WormBaseWiki. Jump to: navigation, search. This is the official wiki site for WormBase, the database of the model organism *Caenorhabditis elegans* and ...

[www.wormbase.org/wiki](http://www.wormbase.org/wiki) - 15k - [Cached](#) - [Similar pages](#)

## [C. elegans/C. briggsae Transcription Factor Binding Site Search](#)

WormBase Banner. Find: Anything, Any Gene, Anatomy Term, Author/Person, Allele, Cell, Clone, Database Model, Gene Ontology Term, Gene class, Genetic Map ...

[www.wormbase.org/cisortho/](http://www.wormbase.org/cisortho/) - 9k - [Cached](#) - [Similar pages](#)

## [BioMart \(MartView\)](#)

Find: Anything, Any Gene, Author/Person, Allele, Cell, Clone, Database Model, Gene Ontology Term, Gene class, Genetic Map, Genbank Acc. Num ...

[www.wormbase.org/Multi/martview](http://www.wormbase.org/Multi/martview) - 51k - [Cached](#) - [Similar pages](#)

## [\[PDF\] THE GENETICS OF CAENORHABDITIS ELEGANS](#)

File Format: PDF/Adobe Acrobat - [View as HTML](#)

THE GENETICS OF CAENORHABDITIS ELEGANS. S. BRENNER. Medical Research



# Miscellany: "Frozen" releases as Virtual Machines

The image shows a virtual machine window titled "WormBase-WS160-FCS". Inside the VM, a Mozilla Firefox browser window displays the WormBase website. The browser's address bar shows "http://localhost/". The website content includes a navigation menu with "Home", "Genome", "Blast / Blat", "WormMart", "Batch Sequences", "Markers", "Genetic Maps", "Submit", and "Searches". A prominent banner reads "WormBase Release WS160" and "WS160 referential release, 31 July 2006. Master is at www.wormbase.org". Below the banner is a search bar with the text "Find: Any Gene" and a "Search" button. The website also features sections for "Web Site Directory", "News and Notes", and "Mirror Sites, Data".

The virtual machine's desktop environment includes a menu bar with "Applications", "Places", and "System". The system tray shows the time as "9:29 PM". At the bottom of the VM window, a terminal window displays the following commands and output:

```
root@localhost:~/build/Generic-Genome-Browser-1_64
[todd@blast projects:27]$ Read from remote host brie3.cshl.org: Operation timed out
Connection to brie3.cshl.org closed.
[todd@salmon wormbase-WS160:12]$
```

# Miscellany: RSS feeds

## WormBase 18 Total

---

**December additions to WormBook** Todd Harris (harris@cshl.edu) Jan 9, 12:11 PM  
WormBook has expanded its coverage of *C. briggsae* with the addition of "[Caenorhabditis briggsae methods](#)" to WormMethods. Additionally, WormBook's new Biochemistry section was launched with "[Carbohydrates and glycosylation](#)". For a monthly email containing information about new additions to WormBook, please sign up at [www.wormbook.org/announce.html](http://www.wormbook.org/announce.html).  
[Read more...](#)

---

**New release of WormBase: WS168** Todd Harris (harris@cshl.edu) Dec 27, '06, 10:08 AM  
WormBase has been updated to the WS168 release of the database.  
[Read more...](#)

---

**New release of WormBase: WS167** Todd Harris (harris@cshl.edu) Dec 4, '06, 09:46 AM  
WormBase has been updated to the WS167 release of the database. New features in this release include the indication of [genes with expression patterns](#) on the Genome Browser (see the "Expression Patterns" track) and an expanded display of [phenotypes](#).  
[Read more...](#)

---

**New Chapters Added to WormBook** Todd Harris (harris@cshl.edu) Nov 30, '06, 12:39 PM  
This month, WormBook has added three new chapters. Our coverage of nematodes other than *C. elegans* has been expanded by the addition of "[Biology and genome of Trichinella spiralis](#)" to the Genetics and genomics section. Additionally, "[The sensory cilia of Caenorhabditis elegans](#)" has been published in the Cell biology section and "[Heterotrimeric G proteins in C. elegans](#)" is now available in the Signal transduction section. For a monthly email containing information about new additions to WormBook, please sign up at [wormbook.org/announce.html](http://wormbook.org/announce.html).  
[Read more...](#)

---

**nGASP update** Todd Harris (harris@cshl.edu) Nov 22, '06, 03:24 PM  
Expanded training data including repeat sequences, alignment orientation, and updated protein alignment files have been posted on the

**Search Articles:**

**Article Length:**  
=

**Sort By:**  
[Date](#)  
Title  
Source  
New

**Recent Articles:**  
[All](#)  
Today  
Yesterday  
Last Seven Days  
This Month  
Last Month

**Source:**  
WormBase

**Actions:**  
[Mail Link to This Page](#)

# *Acknowledgements*

---

## **The WormBase Consortium**

### **CSHL WormBase Team**

**Lincoln Stein**

Todd Harris

Sheldon McKay

Payan Canaran

Will Spooner (WormMart)

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