



The GMOD Project: Order from Chaos

Lincoln Stein, CSHL

RGD Rat Genome Database

Search for wildcard

Advanced Search

Data	Tools	Rat Community	Download	Submit Data	About RGD	Help
<ul style="list-style-type: none"> Genes QTLs SSLPs ESTs Maps 	<ul style="list-style-type: none"> VCMAP Gene Annotation Repeat Masker RH Map Server Genome Scanner Genome Annotation 	<ul style="list-style-type: none"> Rat GBrowse HumanGBrowse Rat Forum The Pied Piper Resource Links 	<ul style="list-style-type: none"> FTP Site 	<ul style="list-style-type: none"> Strain Registration Gene Registration QTL Registration Nomenclature 	<ul style="list-style-type: none"> RGD Schema RGD News Citing RGD Our Staff Open Jobs and more ... 	<ul style="list-style-type: none"> How Do I Glossary FAQs Contact Us

RGD will be upgrading its network system this evening Tuesday March 22, 2005.

Services will not be available from
7:00
4:00 AM

We are sorry for the inconvenience.

The Rat Genome Database (RGD) curates and provides access to this data to support research using it. Related links: [About RGD](#), [Article describing RGD](#)

RGD Highlights

- RGD error track on GBrowse **30%**
- RGD has developed a prototype GBrowse regions of the current assembly that have Where the repair is known, this is also di any bactig within this region will take you Try it and let us know what you think.

FlyBase
Next Generation

Getting Started
Help, About FlyBase, Contacts

Site Map

Documents
FAQ, Tutorial
FlyBase Reference
Bulk data retrieval
Genetic nomenclature
Citing FlyBase
Author Suggestions
Drosophila Board

News, meetings & announcements
New this month
Community White Papers

Drosophila resources
If you are new to flies
Aided & related data
Interactive Fly

FlyBase Mirrors
FlyBase Archives
Pro. Species Genomes

Important News

FlyBase A Database of the *Drosophila* Genome

Data Classes

[Maps](#) Annotated Genome: [GBrowse](#) & [Apollo](#) views
[CytoSearch](#)

[Genes](#) Search [Genes](#), [Alleles](#), [Gene Products](#), [Protein Function](#), [Location](#), [Process](#), [Structure](#) (GO), [Gene Expression](#)

[Genome Annotation & Sequences](#) Search [Annotations](#), [BLAST](#), [EST](#) & [DGC](#) cDNAs
[Genome Sequence](#), [Download](#)

[Stocks](#) Search & order [Stocks](#)
Stock Centers' homepages: [Bloomington](#), [Kyoto](#), [Ehime](#), [Szeged](#), [Tucson](#), & Special [Collections](#)

[Clones](#) from [DGRC](#), [BDGE](#), [BACPAC](#) and [MRC](#)

[Transgenes & Transposons](#) Search [Transgene Constructs](#) or [Insertions](#)
Browse [Natural Transposons](#)

[Aberrations](#) Search [Aberrations](#)

[Anatomy & Images](#) Anatomy Images Browser and Terms

Saccharomyces Genome Database

Quick Search:

[Site Map](#) | [Help](#) | [Full Search](#) | [Contact SGD](#) | [Home](#)

[Community Info](#) | [Submit Data](#) | [BLAST](#) | [Primers](#) | [PstMatch](#) | [Gene/Seq Resources](#) | [Advanced Search](#) | [Virtual Library](#)

- Search Options**
[Advanced Search](#), [Full-text Search](#), [Search SGD web pages](#), [Global Gene Hunter](#), [Search Literature](#), and more.
- Help Resources**
[Getting Started](#), [Sitemap](#), [FAQ](#), and more.
- Analysis & Tools**
[BLAST](#), [Gene/Seq Resources](#), [Maps](#), and more.
- Homology & Comparisons**
[PDR Homologs](#), [Protein Motifs](#), [Homologs](#), and more.
- Function & Expression**
[Protein Info](#), [Function Junction](#), [Pathways](#), [Expression Connection](#), and more.
- GO Resources**

SGD™ is a scientific database of the molecular biology and genetics of the yeast *Saccharomyces cerevisiae*, which is commonly known as baker's or budding yeast.

New and Noteworthy

- Abstract Deadline is Near for the International Yeast Conference**
International Conference on Yeast Genetics and Molecular Biology will occur this summer in Bratislava, Slovak Republic from August 7-12. The deadline for submission of abstracts is April 1st ([abstract form](#)). Reduced registration fees are available for those that register before April 1st ([registration form](#)). (Posted March 21, 2005)
- SGD Curation News**
 - [Genome Snapshot](#)
 - [New resources added to SGD this week](#)

GRAMENE

Search for: Database: Search

[Genome Browser](#) | [BLAST](#) | [CMap](#) | [Markers](#) | [Protein](#) | [Ontology](#) | [Mutant](#) | [QTL](#) | [Literature](#) | [Species](#) | [Resources](#) | [About Gramene](#) | [Site Map](#)

Gramene: A Comparative Mapping Resource for Grains

Gramene is a curated, open-source, Web-accessible data resource for comparative genome analysis in the grasses. Our goal is to facilitate the study of cross-species homology relationships using information derived from public projects involved in genomic and EST sequencing, protein structure and function analysis, genetic and physical mapping, interpretation of biochemical pathways, gene and QTL localization and descriptions of phenotypic characters and mutations.

Quick Search

Search for:

Detailed search (long)

Database:

Gramene Tip

You can view Gramene's archive of all its [News](#) items.

[[All Tips](#)]

What's new?

- WORKSHOP ON CEREAL GENOMICS** **NEW** March, 2005
This one-week workshop on Cereal Genomics will enable participants to take advantage of emerging genetic tools and genomics data in the cereals, including the complete genome sequence of rice and extensive EST and genome survey sequence from maize, wheat and other grasses.
September 13 - 19, 2005
- Curator position available immediately.**
- TAIR Dec 2004/Jan 2005 News Release** (Feb. 8, 2005)

tair The Arabidopsis Genome Initiative

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TAIR Database

Advanced Search

Genes **UPDATE**

Proteins
Markers
DNA
Germplasm
Ecotype
Polymorphism/Allele
People/Labs
Protocols
Publications
Sequences
Keyword Browser
GO Annotations
Loc History
Microarray Elements
Microarray Experiments
Microarray Expression
More...

Analysis Tools
SeqViewer
MapView
AraCyc Pathways
BLAST
WU-BLAST2
FASTA
Patmatch
Microarray Analysis
Motif Analysis
Bulk Downloads **UPDATE**
Chromosome Map Tool
More...

External Links
Stock Centers...
Insertion, Knockout & Other Mutations
Nomenclature
Sequence Analysis
Genome Databases
Proteome Resources
Cis-Element Resources

Arabidopsis
About Arabidopsis
Genome Initial
Functional Ge
Monsanto SNF
Gene Express
Education & C
Gene Families
Gene Class S
Ontologies
Data Submiss
Protocols & L
More...

FTP Downloads
Sequences
Genes
Maps
Microarrays
Proteins

Stocks
About ABRC
Place Order
ABRC Catalog
Search Seed Stocks

WormBase The Biology and Genome of *C. elegans*

Genes | Batch Sequences | Markers | Genetic Maps | Submit | **Searches** | Site Map

Exact match Results as XML Literature Search

News and Notes

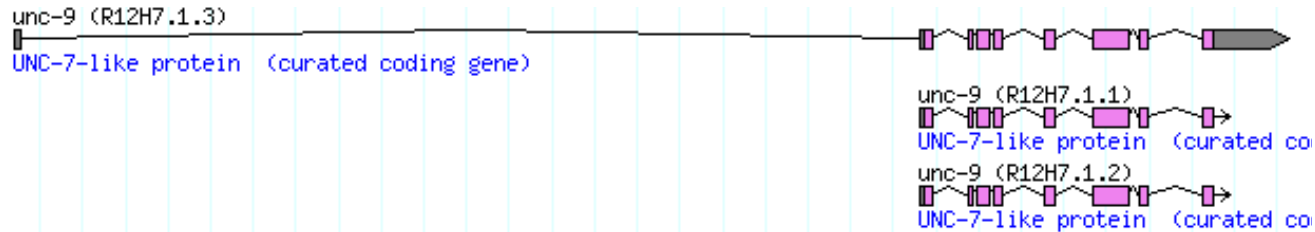
- March 22, 2005: Abstracts for 2005 IWM due today**
Abstracts for the Fifteenth International *C. elegans* Meeting are due today, March 22.
- March 21, 2005: WormBase Literature Search updated**
A number of improvements have been made to the WormBase Literature search engine in line with the new [Textpresso](#) build release. The full text of over 1,000 new journal articles pertaining to worm biology have been added to the database, four new search categories are available from the drop down menus, minor improvements have been made to the interface, including a new sort function.
- March 9, 2005: Public beta test of WormMart**
WormBase is pleased to announce [WormMart](#), a new data mining facility now available for public beta testing. [Read more](#) about WormMart and the public beta test.
- March 4, 2005: New release of WormBase, WS139**
WormBase has been updated to the WS139 release of the database.
- February 27, 2005: New commercial microarrays from Agilent**
Agilent has released a new *C. elegans* Z2K oligo microarray with sequences from WS129. Additional information is available on the [product page](#) at Anilon's website.

Genetics, Strains, and Phenotypes Genetic Interval, Rearrangements, Clone, Allele, SNPs, Markers, and Strains, Strain Report, RNAi

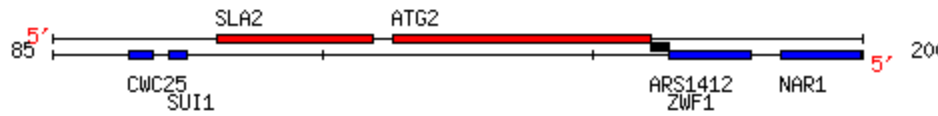
Downloads, Linking and Data Mining Bulk Downloads, Linking to WormBase and more...

Three Views of a Gene

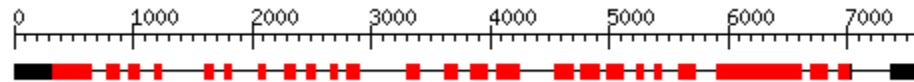
WormBase



SGD



TIGR



The GMOD Project

- Portable solutions for model organism databases
- Multiple MODs involved
 - Worm, fly, yeast, mouse, arabidopsis, rat, rice
- Funded by NIH and USDA/ARS
 - Programmers, coordinator, quarterly meetings

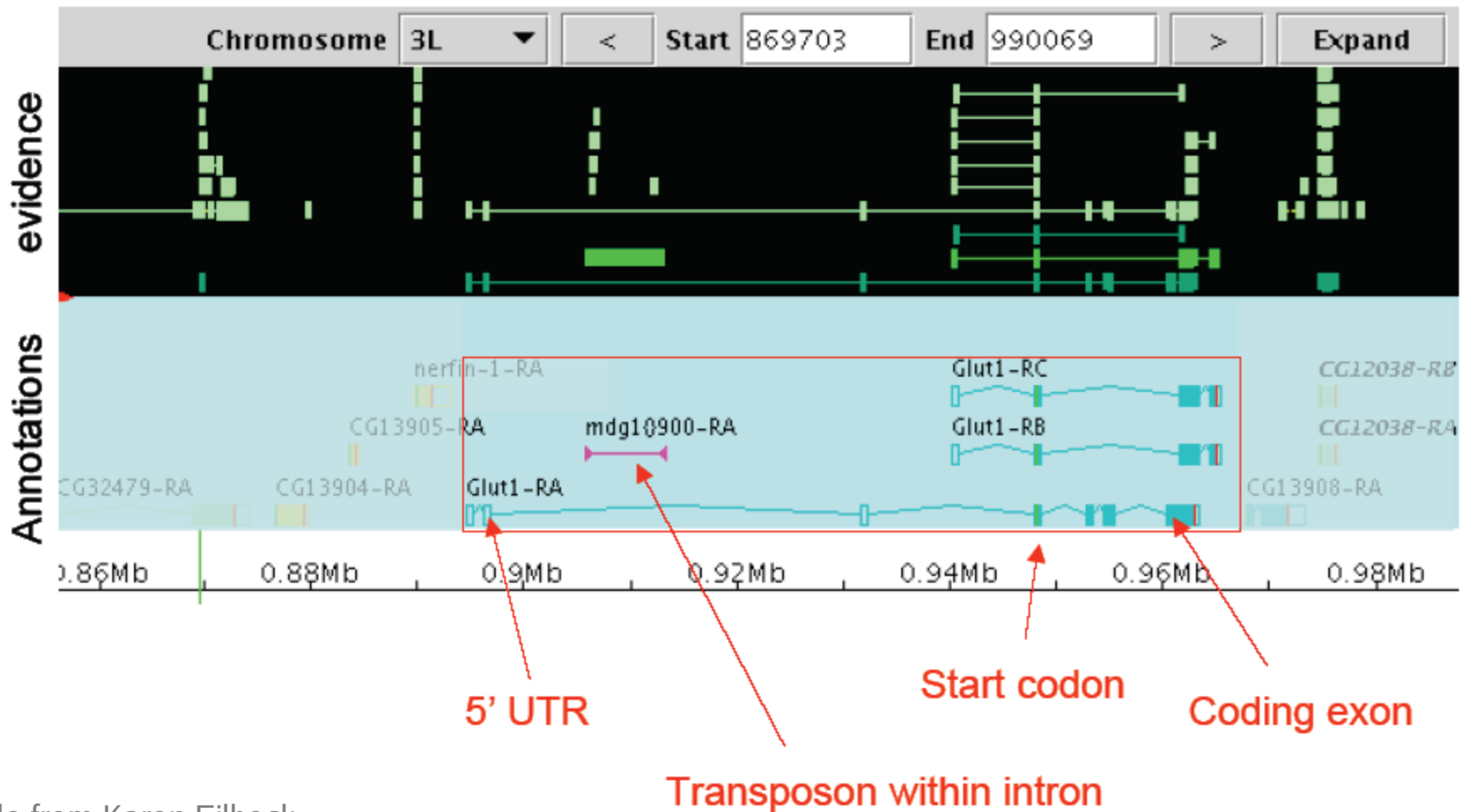


<http://www.gmod.org>

Sequence Ontology










Karen Eilbeck

3 Alternate transcripts of Glut1 gene



Chado – GMOD Schema

David Emmert, Chris Mungall

 Genetics Module	Alleles, and relationships between alleles and phenotypes
 Sequence Module	Anything related to biological sequences and annotation
 Map Module	Any kind of localisation excluding sequence localisations
 Expression Module	Transcription events, including space/time localisation. Also for protein expression
 Companalysis Module	Adjunct to sequence module for in-silico analysis
 CV Module	Controlled Vocabularies / Ontologies
 Organism Module	Data related to taxonomy / species
 Pub Module	Publication / Biblio / References
 General Module	General / Core



Standard File Formats

- Chaos-XML
 - XML instantiation of Chado schema
- GFF3
 - Tab-delimited genome annotations

X	.	gene	100872	102664	.	-	.	ID=CG3038
X	.	mRNA	100872	102655	.	-	.	ID=CG3038-RA;Parent=CG3038
X	.	mRNA	100872	102664	.	-	.	ID=CG3038-RB;Parent=CG3038
X	.	3' _UTR	100872	101260	.	-	.	ID=CG3038-RB-u3;Parent=CG3038-RB,CG3038-RA
X	.	exon	100872	102168	.	-	.	ID=CG3038:3;Parent=CG3038-RB,CG3038-RA
X	.	exon	102234	102400	.	-	.	ID=CG3038:2;Parent=CG3038-RB
X	.	exon	102234	102655	.	-	.	ID=CG3038:4;Parent=CG3038-RA
X	.	exon	102502	102664	.	-	.	ID=CG3038:1;Parent=CG3038-RB
X	.	5' _UTR	102493	102655	.	-	.	ID=CG3038-RA-u5;Parent=CG3038-RA
X	.	5' _UTR	102504	102664	.	-	.	ID=CG3038-RB-u5;Parent=CG3038-RB
X	.	CDS	101264	102492	.	-	.	ID=CG3038-PA;Parent=CG3038-RA
X	.	CDS	101264	102503	.	-	.	ID=CG3038-PB;Parent=CG3038-RB

Standard Download URLs

- http://flybase.org/genome/D_melanogaster/current/dna
 - Get FASTA-format chromosomal DNA
- http://flybase.org/genome/D_melanogaster/current/feature
 - Get GFF3-format features.
- http://flybase.org/genome/D_melanogaster/current/protein
 - Get FASTA-format proteins
- http://flybase.org/genome/D_melanogaster/current/mrna
 - Get FASTA-format transcript sequence



Standard Browsers & Editors

- **GBrowse** – Web-based genome annotation viewing (Lincoln Stein, Scott Cain)
- **Apollo** – Desktop-based genome annotation editing (Nomi Harris, Michelle Clamp)
- **CMap** – Web-based comparative map viewing (Ken Clark, Ben Faga)
- **Sybil** – Web-based synteny viewing at gene & chromosome level (Jonathan Crabtree)
- **Turnkey** – “Skinable” Chado-based web site (Allen Day, Brian O’Connor)



Turnkey: Basic Skin



| [Home](#) | [Help](#) | |

Controlled Vocabulary Terms

- o [calcium ion binding \(GO:0005509\)](#)
- o [G-protein coupled receptor protein signaling pathway \(GO:0007186\)](#)
- o [protein binding \(GO:0005515\)](#)
- o [cytoplasm \(GO:0005737\)](#)
- o [plasma membrane \(GO:0005886\)](#)

Publications

Publications

Locations

Synonyms

- o [BC047523](#)
- o [CALM1](#)

Ranges

Relationships

Feature

BC047523

Synonyms

BC047523 (synonym)
CALM1 (synonym)

Database Links

[LocusLink](#), [OMIM](#), [SwissProt](#), [UniGene](#)

Genomic Location




chr14_region, strand 1, 88853416..88864435 [[view in GBrowse](#)]

Transcript

- ◆ **five_prime_UTR** location 88853416..88853614
- ◆ **CDS** location 88853614..88853617
- ◆ **CDS** location 88856448..88856479
- ◆ **CDS** location 88857642..88857786
- ◆ **CDS** location 88860245..88860352
- ◆ **CDS** location 88860762..88860898
- ◆ **CDS** location 88861072..88861101
- ◆ **three_prime_UTR** location 88861101..88861177
- ◆ **three_prime_UTR** location 88861461..88864435

Turnkey: EnsEMBL Skin

Turnkey <http://boconnor.is...ce8&domain=default>

 *Ensembl* **Human** *GeneView*  

[Home](#) ▶ [Human](#) ▲ [TextSearch](#) ▲ [BlastSearch](#) ▲ [EnsMart](#) ▲ [Export Data](#) ▲ [Download](#) ▲

Find

Ensembl Gene Report

Gene	BC047523 (synonym) CALM1 (synonym)
Ensembl Gene ID	LocusLink , OMIM , SwissProt , UniGene
Genomic Location	chr14_region, strand 1, 88853416..88864435 [view in GBrowse]
	Calmodulin is the archetype of the family of calcium-modulated proteins of which nearly 20 members have been found. They are identified by their occurrence in the cytosol or on membranes facing the cytosol and by a high affinity for calcium. Calmodulin contains 149

Packaging

- “Make install” installer
- Standard GMOD directory hierarchy
- Examples & tutorials
- Mirroring & synchronization system (GDS)



Other Components

- Pathway Tools – metabolic pathways
- BioMart – data mining
- BioPipe – automated genome analysis
- PubMed/PubFetch – Literature management
- Textpresso – Automatic paper classification & searching
- Lucegene – Keyword search of genome annotations



Where can you get it?

- www.gmod.org

- Credits:

- Scott Cain
- Ken Clark
- Jonathan Crabtree
- Allen Day
- Karen Eilbeck
- David Emmert
- Ben Faga
- Nomi Harris
- Stan Letovsky
- Sima Mishra
- Chris Mungall
- Brian O'Connor
- Gudmundur Thorisson
- Eric Just

