

Highlights

All Sites

- interpro protein domains
- attach comments to genes and sequences
- easier access to queries via a global overview table
- save the results of your searches for later retrieval

EuPathDB

- gene, genome, EST & ORF queries spanning all component databases
- ortholog relationships and metabolic pathway maps spanning all supported organisms
- BLAST against all apicomplexan data, including *Theileria* genomes and ESTs from multiple species
- access to additional relevant sites, including GeneDB and NCBI apicomplexan resources

CryptoDB

- genes and genomes for *C. parvum*, *C. hominis*, and *C. muris*
- annotation updates to the published *C. parvum* gene models
- gene expression evidence from EST and proteomic analysis



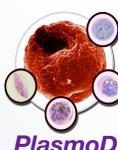
GiardiaDB

- genes and annotation for the *G. lamblia* genome
- phylogenetic trees with conserved proteins
- gene expression evidence from EST alignment, SAGE tag, microarray and proteomics experiments



PlasmoDB

- genes and genomes for six *Plasmodium* species
- SNP and CGH polymorphism data for multiple *P. falciparum* strains; comparison with *P. reichenowi*
- experimental and predicted protein-protein interactions
- cross- species genome synteny and orthologous proteins
- EST for multiple species; Microarray expression and/or proteomics data for *P. falciparum* and rodent malarial parasites



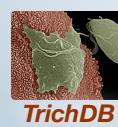
ToxoDB

- complete annotation and computational predictions for representative type I, II and III strains (GT1, ME49, VEG)
- sequence alignment of *T. gondii* strains and *Neospora caninum*
- EST, microarray and proteomics data supporting gene expression
- whole-genome analysis of chromatin marks



TrichDB

- genes and annotation for the *T. vaginalis* genome
- identification of repetitive genes
- more than 90,000 ESTs aligned to genome provide expression evidence and validate gene models



Help extend the value of your community database ... contribute comments and experimental data to EuPathDB.

Add value to your large-scale genome analyses by placing them in context with others. We currently support genomic, microarray, proteomic, EST, SAGE-tag, SNP and metabolic pathway data sets for *Cryptosporidium*, *Giardia*, *Plasmodium*, *Toxoplasma*, and *Trichomonas* species, and will work with you to integrate your data. Please contact your representative database at the email address below to begin the submission process.

Share comments on individual genes with others. If you have a confirmation or suggested change to a gene structure, its expression or its function, please visit the relevant Gene Page and submit a comment. Your comments will be displayed on the Gene pages in the Annotation section and forwarded to genome curators if changes in annotation are required.

Information on annual EuPathDB training workshops can be found at:

<http://eupathdb.org/workshop/>

Examples of questions that can be addressed using EuPathDB can be found at:

<http://eupathdb.org/workshop/2008/>

The component database sites can be accessed directly at:

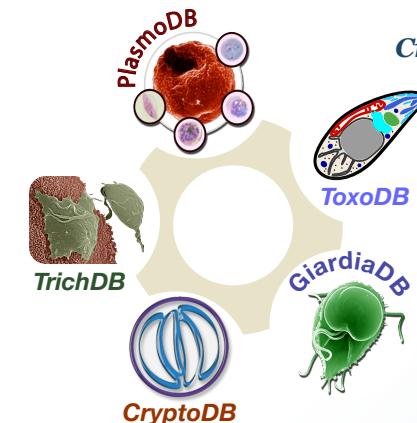
<http://CryptoDB.org>, <http://GiardiaDB.org>,
<http://PlasmoDB.org>, <http://ToxoDB.org>, or
<http://TrichDB.org>.

Each website has a link at the bottom of the page for contacting EuPathDB staff; you may also send e-mail to:
help@EuPathDB.org

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EuPathDB

Eukaryotic Pathogen Database Resources



EuPathDB provides a unified entry point for the Eukaryotic Pathogen Bioinformatics Resource Center (BRC) integrating the database resources of CryptoDB.org, GiardiaDB.org, PlasmoDB.org, ToxoDB.org, and TrichDB.org.

Eukaryotic Pathogens encompass numerous pathogens including *Giardia*, *Trichomonas*, the *Plasmodium* parasites responsible for malaria, and the AIDS-related pathogens *Cryptosporidium* and *Toxoplasma*.

Using the **EuPathDB** site, scientists may explore the genomes and genomic-scale datasets available for these species, formulate complex biological queries, and link to additional resources.

... Coming Soon!

We are pleased to announce that the kinetoplastida (*Leishmania*, *Trypanosoma brucei* & *Trypanosoma cruzi*) will be joining the EuPathDB family of functionally-integrated databases. Look for the first draft release of TrypDB in January 2009

Query Availability in Organism Specific Sites: ☐ = CryptoDB ☐ = GardiaDB ☐ = PlasmoDB ☐ = ToxoDB ☐ = TrichDB

Identify Genes by:	
ID	cgd7_230
	<input type="button" value="go!"/>
Keyword	membrane
<input type="button" value="go!"/>	
Genomic Position	
<ul style="list-style-type: none"> Chromosomal Location Proximity to Centromeres Proximity to Telomeres Non-Nuclear Genomes 	
Transcript Expression	
<ul style="list-style-type: none"> EST Evidence Microarray Evidence Microarray Evidence 	
Predicted Proteins	
<ul style="list-style-type: none"> Molecular Weight Isoelectric Point Protein Structure Etopotes 	
Evolution	
<ul style="list-style-type: none"> Ortholog/Paralogs Homology Homology Profile Phylogenetic Tree 	
Gene Attributes	
<ul style="list-style-type: none"> Type (e.g. rRNA, tRNA) Exon/Intron Structure 	
Protein Expression	
<ul style="list-style-type: none"> Mass Spec. Evidence 	
Putative Function	
<ul style="list-style-type: none"> EC Number Metabolic Pathway Protein Interaction Predicted Interaction 	
Population Biology	
<ul style="list-style-type: none"> SNPs Microsatellites 	
Identify Isolates by:	
<ul style="list-style-type: none"> Isolate ID Taxon Host 	
<ul style="list-style-type: none"> Product Name Isolate Source BLAST Similarity 	
Identify Genomic Sequences by:	
<ul style="list-style-type: none"> Sequence ID Species 	
<ul style="list-style-type: none"> BLAST Similarity DNA Molt 	
Identify ESTs by:	
<ul style="list-style-type: none"> EST ID Extent of Gene Overlap Library 	
<ul style="list-style-type: none"> BLAST Similarity Chromosome Location 	
Tools	
SRT: Sequence Retrieval for all Apicomplexans	
ApCyc: Metabolic pathways for all Apicomplexans	
KEGG Maps: View "painting" of KEGG metabolic pathway maps with apicomplexan enzymes	
Other Attributes	
<ul style="list-style-type: none"> Keyword List of IDs Organism Available Reagents 	
Similarity/Pattern	
<ul style="list-style-type: none"> Protein Motif Protein Domains Protein Domain BLAST similarity 	
Cellular Location	
<ul style="list-style-type: none"> Signal Peptide Transmembrane Domain Organellar Compartment Exported to host 	

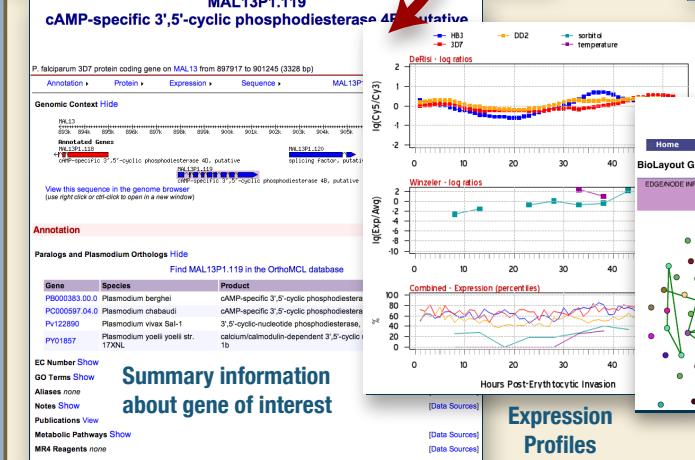
A complete list of all queries and tools for EuPathDB, GiardiaDB, TrichDB, CryptoDB, PlasmoDB, and ToxoDB. Query against protein domains, expression patterns, SNP content, gene structure, and more.

Query:	Keyword Text (search product name)	
Parameters:	ALL_Cryptosporidium_hominis.Cryptosporidium.parvum.Plasmodium_chabaudi.Plasmodium_reichenowi.Plasmodium.vivax.Plasmodium.yeili.Toxoplasma.gondii Text = dehydrogenase	
Results:	139 (showing 1 to 20) CryptoDB: 29 PlasmoDB: 50 ToxoDB: 60 (results are sorted by organism).	
Download Combine with other results Review query		
First 1 2 3 4 5 6 7 Next Last	Go to page: [1] [1 .. 7] (GO)	
Gene	Organism	Product Description
CryptoDB:1MB.519	C. parvum	glyceraldehyde-3-phosphate dehydrogenase, probable
CryptoDB:56k.02	C. parvum	inosine-5'-monophosphate dehydrogenase, probable
CryptoDB:Chro.10039	C. hominis	dehydrogenase/reductase (SDR family) member 7; CGI-86 short-chain dehydrogenase/reduc...
CryptoDB:Chro.20028	C. hominis	glycerol-3-phosphate dehydrogenase
CryptoDB:Chro.40087	C. hominis	pyruvate dehydrogenase

User Login 

Community

Help 



Quick Navigation

EuPathDB Version 1.0
March 15, 2008

My Queries: 0

Eukaryotic Pathogens Database Resources

Home | All Queries and Tools | Query History | Data Sources | Download Files | Contact Us

Welcome to the newly expanded ApidB — new look and functionality that includes GiardiaDB.org and TrichDB.org.

ApidB/EuPathDB Bioinformatics Resource Center for Biodiversity and Emerging/Rising Infectious Diseases is a portal for accessing genomic-scale datasets associated with the eukaryotic pathogens (*Cryptosporidium*, *Giardia*, *Plasmodium*, *Toxoplasma* and *Trichomonas*). Click on the logos below to access taxon-specific sites.

Taxa:

- Cryptosporidium**
- GiardiaDB**
- PlasmoDB**
- ToxoDB**
- TrichDB**

Tools:

- SRT:** Sequence Retrieval for all Apicomplexans.
- **ApicDB:** Metabolic pathways for all Apicomplexan organisms.
- **All DB:** All ApidB sequences.
- **KEGG:** Metabolic pathway maps with apicomplexan enzymes.

ApidB/EuPathDB News:

- ApidB 1.0 is released (ApidB, 15 March 2008)
- ApidB 3.2 is released with *Cryptosporidium* isolates and *Giardia lamblia* genome (ApidB, 19 February 2008)
- CryptоДB 3.7 is released with isolates and *C. muris* genome (CryptоДB, 19 February 2008)
- Draft Reannotation of the *P. faliparum* genome is now available (PlasmoDB, 1 February 2008)

My ApidB/EuPathDB Account:

Email: Password: forgot? Register / Subscribe

ApidB/EuPathDB Outreach:

- Events with ApidB/EuPathDB Presence
- ApidB/EuPathDB Workshops
- ApidB/EuPathDB Publications

Community Resources:

- BRC Central
- OrthoMCL
- GenDB
- ModBase at UCSF
- Tetrahymena Genome
- NCBI Entrez - PubCrawler
- More Resources...

Information and Help:

- Gene Metrics
- Data Sources and Methods
- Website Tutorials
- ApidB/EuPathDB workshop
- Glossary of Terms
- Website Statistics
- Ask us a Question!

Genomes in ApidB/EuPathDB
(Mouse over organism for more information)
(M=MicroRNA, P=Pathogen, Pa=Pathway)

Organism/Strain	Last Updated	Genomic Assembly	Gene Multiple	SNPs	ESTs	M	P	Pa
<i>Cryptosporidium</i> TUG052	11/20/2008	9.74	3956					
<i>C. muris</i>	08/20/2007	8.48	5095					
<i>C. parvum</i> IOWA	08/20/2007	9.09	3888					
<i>G. lamblia</i> ATCC 50903	09/20/2007	11.19	6580					
<i>P. berghei</i> ANKA	02/2008	18.00	12345					
<i>P. chabaudi</i> AS	02/2008	18.89	15095					
<i>P. yoelii</i> 17XNL	02/2008	23.00	5585					
<i>P. gallinaceum</i>	02/2008	16.91						
<i>P. knowlesi</i> PTK	02/2008	25.44	5157					
<i>P. vivax</i> Salvador	02/2008	26.98	5448					
<i>P. yoelii</i> ITAM	02/2008	20.17	7971					
<i>T. annulata</i> Ankar	03/2008	8.35						
<i>T. parva</i> Mlompox	03/2008	8.35						
<i>T. gondii</i> ME49	08/2007	63.50	8032					
<i>Trichomonas</i>	02/2007	17.61	40898					

Query Availability in Organism Specific Sites:

- CytoDB
- GiardiaDB
- PlasmoDB
- ToxoDB
- TrichDB

Identify Genes by:

Genomic Position	Gene Attributes	Other Attributes
• Chromosome Location	• Type (e.g. tRNA, rRNA)	• Keyword
• Proximity to Centromeres	• tRNA/rRNA Structure	• List of IDs
• Proximity to Telomeres	• Exon/Intron Structure	• Species
• Non-nuclear Chromosomes		• Available Reagents

Identify Proteins by:

Transcript Expression	Protein Expression	Similarity/Pattern
• EST Evidence	• Mass Spec. Evidence	• Protein Motif
• SAGE Tag Evidence	• Microarray Evidence	• InterPro/Pfam Domain
• Microarray Evidence		• BLAST Similarity

Identify Proteins by:

Predicted Proteins	Potative Function	Similarity/Pattern
• Molecular Weight	• tSOM Term	• Signal-Peptide
• Isoelectric Point	• EC Number	• Transmembrane Domain
• Protein Structure	• Metabolic Pathway	• Domains
• Epitopes	• P-H2 Interaction	• Subcellular Compartment
	• Predicted Interaction	• Exported to Host

Identify Isolates by:

Evolution	Population Biology	Cellular Location
• Orthologs/Paralogs	• SNPs	• Signal-Peptide
• Ontology Profiling	• Microsatellites	• Transmembrane Domain
• Phylogenetic Tree		• Domains
		• Subcellular Compartment
		• Exported to Host

Identify Genomic Sequences by:

Sequence ID	BLAST	SNP ID	Identify SNPs by:
Species	Similarity	Gene ID	Allele-Frequency
	BLAST		Chromosome Location
	BLAST		Location
	BLAST		BLAST
• Isolate ID	• Product Name	• SNP ID	• Allele-Frequency
• Taxon	• Isolate Source	• Gene ID	• Chromosome Location
• Host	• BLAST Similarity		• Location
			• BLAST
			• BLAST

Identify ESTs by:

EST ID	BLAST	ORF ID	Identify ORFs by:
Extent of Gene Overlap	Similarity	Mass Spec. Evidence	BLAST
• EST Moltif	• Chromosomal Location	• ORF ID	• BLAST Similarity
• Library			• ORF Motif
			• Chromosomal Location
• EST ID	• BLAST	• ORF ID	• BLAST
• Extent of Gene Overlap	• Similarity	• Mass Spec. Evidence	• Similarity
• EST Moltif		• ORF ID	• BLAST
• Library	• Chromosomal Location		• ORF Motif
			• Chromosomal Location

Species-Specific Gene Annotation in All Organism Databases

Query History

The screenshot shows the ApidB.org website. At the top, there is a logo with a blue square containing a white circle and the text "ApidB.org". A red arrow points from the top left towards the main content area. The main title "My Query History" is displayed prominently in the center. Below it is a navigation bar with links: Home, Queries and Tools, Query History, Data Sources, News, and Help. The "Query History" link is highlighted. The page content includes a section titled "Gene query history" with a table:

ID	Query	Size	
3	Name: 1 and 2	14	view download delete
2	Name: Signal Peptide : Organism = All AND <i>Aspergillus</i> AND <i>spporidium</i> AND <i>hom...</i>	6770	view download revise delete
1	Name: Keyword Text (see also product name): Text = dehydrogen...	139	view download revise delete

Below the table, there is a "Combine results:" input field with a dropdown menu and a "Get Combined Result" button. To the right of the input field, the text "[eg: 1 or ((4 and 3) not 2)]" is shown. Further down, there is a section titled "Understanding Boolean Operators: OR and NOT:" with explanatory text and examples.

Keeps track of all of the queries you run so you can combine the results to ask more complex questions. Your gene lists may be stored for retrieval whenever you log in.

Download or Review Query Results



Create and download a report

Home | Queries and Tools | Query History | Data Sources | News | Help

Generate a tab delimited report of your query results. Select columns to include in the report. Optionally include a first line with column names

Combined Answer: 1 and 2

Columns:

<input checked="" type="checkbox"/> Default (same as in result), or...
<input type="checkbox"/> Gene ID
<input type="checkbox"/> Organism
<input type="checkbox"/> Product Description
<input type="checkbox"/> CDS Nucleotide Sequence
<input type="checkbox"/> Translation

Column names: Include Exclude

Get Report

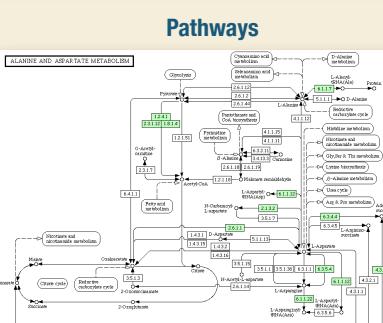
To contact AppliGen, send email to help@AppliGen.org or visit our [Support page](#)

List of Genomes in EuPathDB

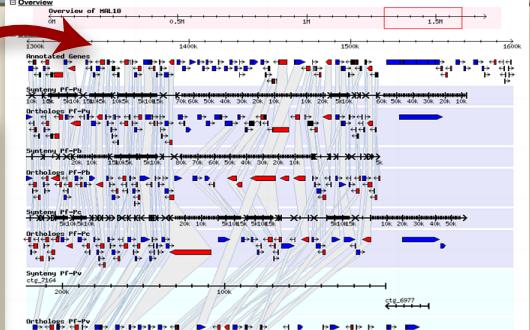
Simple Searches for Genes

**BLAST
Genome
ESTs &
OBEs**

Download a list of genes, ORFs, or SNPs that you can put into an Excel spreadsheet or browse species-specific information.



Sequence Features



**View genes and syntenic genes as well
as all other sequence annotation
including SNPs, chip oligos, and ESTs.**