

# EXPASY

links to many databases and tools

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File Edit View Favorites Tools Help

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ExPASy Proteomics Server

Search  for

## ExpASY Proteomics Server

Databases Tools Services Mirrors About Contact

You are here: ExpASY CH

The ExpASY (Expert Protein Analysis System) [proteomics](#) server of the [Swiss Institute of Bioinformatics](#) (SIB) is dedicated to the analysis of protein sequences and structures as well as 2-D PAGE ([Disclaimer](#) / [References](#) / [Linking to ExpASY](#)).

### Latest News

[World-2DPAGE](#) - Mar 26, 2010  
New data uploaded into the [World-2DPAGE Repository](#) and new database linked from the [World-2DPAGE Portal](#). All together, 122 maps for 17 species are currently available and queriable from a single interface. [\[more\]](#)

[Protein Spotlight](#) - Mar 23, 2010 **love at first smell**  
The making of life is demanding. Take any form from fungus to bacteria, and plants to humans the creation of progeny does not just happen. It takes a lot of molecular dialogue to divide E.coli into two... [\[more\]](#)

[\[more news\]](#) [\[SIB news\]](#)

Databases [UniProtKB](#), [PROSITE](#), [HAMAP](#), [SwissVar](#), [ViralZone](#), [SWISS-MODEL Repository](#), [SWISS-2DPAGE](#), [World-2DPAGE Repository](#), [MIAPEGelDB](#), [ENZYME](#), [GlycoSuiteDB](#), [UniPathway](#) [\[details\]](#) [\[full list\]](#)

Tools & Software  
[Proteomics tools](#), [Blast](#), [ScanProsite](#), [Melanie](#), [MSight](#), [Make2D-DB](#), [SWISS-MODEL](#), [Swiss-PdbViewer](#) [\[full list\]](#)

Education & services

Documentation

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Protein Knowledgebase (UniProtKB)

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## WELCOME

The mission of [UniProt](#) is to provide the scientific community with a comprehensive, high-quality and freely accessible resource of protein sequence and functional information.

## What we provide

<a href="#">UniProtKB</a>	<p>Protein knowledgebase, consists of two sections:</p> <ul style="list-style-type: none"> <li>★ Swiss-Prot, which is manually annotated and reviewed.</li> <li>★ TrEMBL, which is automatically annotated and is <b>not</b> reviewed.</li> </ul> <p>Includes <a href="#">Complete Proteome Sets</a>.</p>
<a href="#">UniRef</a>	Sequence clusters, used to speed up similarity searches.
<a href="#">UniParc</a>	Sequence archive, used to keep track of sequences and their identifiers

What is Swiss-Prot vs TrEMBL?

## NEWS

[UniProt release 2010\\_05 - Apr 20, 2010](#)

Nonsense-mediated mRNA decay in UniProtKB  
Cross-references to UCD-2DPAGE

- › Statistics for UniProtKB:  
[Swiss-Prot](#) · [TrEMBL](#)
- › [Forthcoming changes](#)
- › [News archives](#)

## SITE TOUR



**UniProtKB/Swiss-Prot**, a curated protein sequence database which strives to provide a high level of annotation (such as the description of the function of a protein, its domains structure, post-translational modifications, variants, etc.), a minimal level of redundancy and high level of integration with other databases [[More details](#) / [References](#) / [Linking to Swiss-Prot](#) / [User manual](#) / [Recent changes](#) / [Disclaimer](#)].

**UniProtKB/TrEMBL**; a computer-annotated supplement of Swiss-Prot that contains all the translations of EMBL nucleotide sequence entries not yet integrated in Swiss-Prot.

Take note, EXPASY recognizes accession number from NCBI Protein

UniProt > UniProtKB Downloads · Contact · Documentation/Help

Search in Protein Knowledgebase (UniProtKB) **Query** ABA46355 Search Clear Fields »

Search Blast Align Retrieve ID Mapping \*

1 result for **ABA46355** in UniProtKB

Reduce sequence redundancy to 100%, 90% or 50% | Customize display

Download...

Restrict term "aba46355" to source

Page 1 of 1

All	Accession	Entry name	Status	Protein names	Gene names	Organism	Length
<input type="checkbox"/>	<a href="#">Q71T02</a>	Q71T02_PLAFA	★	<b>Lactate dehydrogenase</b> (EC 1.1.1.27) (L-lactate dehydrogenase)	<b>LDH-P</b> (LDH)	Plasmodium falciparum	316

Page 1 of 1

Accession number for EXPASY

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UniProtKB/Swiss-Prot entries are tagged with a yellow star  
UniProtKB/TrEMBL entries are tagged with a grey star



Entry belongs to the Swiss-Prot section of UniProtKB (**reviewed**)  
Entry belongs to computer-annotated TrEMBL section (**unreviewed**).

Help button  
– useful!

Search in: Protein Knowledgebase (UniProtKB) Query:  Search Clear Fields »

Search Blast \* Align Retrieve ID Mapping \*

★ Unreviewed, UniProtKB/TrEMBL **Q71T02** (Q71T02\_PLAFA)

Last modified February 10, 2009. Version 46. [History...](#)

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Clusters with 100%, 90%, 50% identity | [Third-party data](#) | [Customize display](#) **TEXT XML RDF/XML GFF FASTA**

[Names and origin](#) · [Protein attributes](#) · [General annotation \(Comments\)](#) · [Ontologies](#) · [Sequences](#) · [References](#) · [Cross-references](#) · [Entry information](#)

Names and origin Hide | Top

Protein names	Submitted name: <b>Lactate dehydrogenase</b> <a href="#">EMBL ABY76169.1</a> EC=1.1.1.27 Submitted name: L-lactate dehydrogenase <a href="#">EMBL AAG14292.1</a>
Gene names	Name: <b>LDH-P</b> <a href="#">EMBL AAG14292.1</a> Synonyms: LDH <a href="#">EMBL ABY76169.1</a>
Organism	<b>Plasmodium falciparum</b> <a href="#">EMBL AAG14292.1</a>
Taxonomic identifier	5833 [NCBI]
Taxonomic lineage	Eukaryota › Alveolata › Apicomplexa › Aconoidasida › Haemosporida › Plasmodium › Plasmodium (Leaveria)

Same type of info as  
in NCBI Protein

## Protein attributes

Hide | Top

Sequence length	316 AA.
Sequence status	Complete.
Sequence processing	The displayed sequence is not processed.
Protein existence	Predicted.

**From nucleotide sequence**

## General annotation (Comments)

Hide | Top

Sequence similarities	Belongs to the <a href="#">LDH/MDH superfamily</a> . <a href="#">RuleBase RU003369V0</a>
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**Lactate dehydrogenase/Malate dehydrogenase superfamily**

## Ontologies

Hide | Top

### Keywords

Molecular function	<a href="#">Oxidoreductase</a> <a href="#">RuleBase RU003369V0</a>
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### Gene Ontology (GO)

Biological process	<a href="#">glycolysis</a> Inferred from electronic annotation. Source: InterPro <a href="#">oxidation reduction</a> Inferred from electronic annotation. Source: UniProtKB-KW
Molecular function	<a href="#">L-lactate dehydrogenase activity</a> Inferred from electronic annotation. Source: EC <a href="#">binding</a> Inferred from electronic annotation. Source: InterPro

[Complete GO annotation](#)

### *Malate dehydrogenase*



### *L-lactate dehydrogenase*



## Sequences

Hide | Top

Sequence	Length	Mass (Da)	Tools
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<input type="checkbox"/> Q71T02-1 [UniParc]. <a href="#">FASTA</a>	316	34,108	Blast <input type="button" value="go"/>
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Last modified July 5, 2004. Version 1.

Checksum: D25EB863954B8FC1

```

      10      20      30      40      50      60
MAPKAKIVLV GSGMIGGVMA TLIVQKNLGD VVLFDIVKNM PHGKALDTSH TNVMAYSNCK

      70      80      90     100     110     120
VSGSNTYDDL AGADVIVTA  GFTKAPGKSD KEWNRDDLPL LNNKIMIEIG GHIKKNCPNA

     130     140     150     160     170     180
FIIVVTNPVD VMVQLLHQHS GVPKNIIGL  GGVLDT SRLK YYISQKLNVC PRDVNAHIVG

     190     200     210     220     230     240
AHGNKMVLLK RYITVGGIPL QEFINNKLIS DAELEAIFDR TVNTALEIVN LHASPYVAPA

     250     260     270     280     290     300
AAIIEMAESY LKDLKKVLIC STLLEGQYGH SDIFGGTPVV LGANGVEQVI ELQLNSEEKA

     310
KFDEAIAETK RMKALA

```

[« Hide](#)

## References

Hide | Top

- [1] "Cloning and sequence analysis of LDH gene of Plasmodium falciparum isolate FCC1/HN."  
[Shan Z.X.](#), [Yu X.B.](#), [Ma C.L.](#), [Chen S.Y.](#), [Bian G.W.](#)

[DQ198262](#) Genomic DNA. Translation: [ABA46355.1](#).  
[EU330208](#) Genomic DNA. Translation: [ABY76169.1](#).

**3D structure databases**

HSSP	<a href="#">HSSP</a> built from PDB template <a href="#">1A5Z</a> based on UniProtKB <a href="#">P16115</a> .
ModBase	<a href="#">Search...</a>

**Family and domain databases**

InterPro	<a href="#">IPR001557</a> . L-lactate/malate_DHase. <a href="#">IPR001236</a> . Lactate/malate_DHase. <a href="#">IPR015955</a> . Lactate_DHase/Glyco_Ohase_4_C. <a href="#">IPR016040</a> . NAD(P)-bd. <a href="#">[Graphical view]</a>
Gene3D	<a href="#">G3DSA:3.90.110.10</a> . lact_mal_DH. 1 hit. <a href="#">G3DSA:3.40.50.720</a> . NAD(P)-bd. 1 hit.
Pfam	<a href="#">PF02866</a> . Ldh_1_C. 1 hit. <a href="#">PF00056</a> . Ldh_1_N. 1 hit. <a href="#">[Graphical view]</a>
PIRSF	<a href="#">PIRSF000102</a> . Lac_mal_DH. 1 hit.
PRINTS	<a href="#">PR00086</a> . LLDHDRGNASE.
ProtoNet	<a href="#">Search...</a>

**Entry information** [Hide](#) | [Top](#)

Entry name	Q71T02_PLAFA
Accession	Primary (citable) accession number: <b>Q71T02</b>
Entry history	Integrated into <a href="#">July 5, 2004</a>