

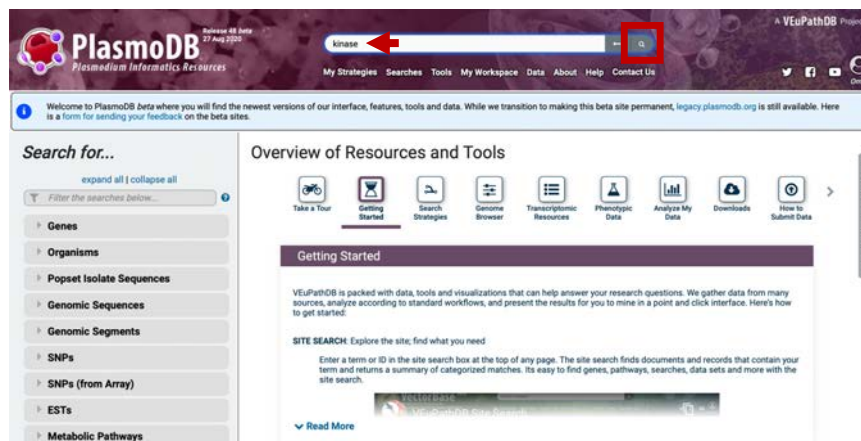
Site Search

Note: this exercise uses *PlasmoDB.org* as an example database, but the same functionality is available on all VEuPathDB resources.

Learning objectives:

- Use keywords in site search
- Explore site search results
- Filter site search results by categories
- Filter site search results by organisms
- Filter site search results by category fields
- Export results to a search strategy
- Find a specific gene using its ID in site search

1. Enter the word *kinase* in the site search window (top center of the page, arrow in the image below). Then click enter on your keyboard or click on the search icon (square in the image below).



2. How many results with the word *kinase* did you get? Are all the results genes? Explore the filter panel on the left side of the webpage. Filter the results so that you only view gene results (hint: click on the word *genes* in the *Filter results* section; arrow in image below).

All results matching **kinase**

1 - 20 of 17,367

Export as a Search Strategy to download or mine your results

Filter results

Genome

Genes 16,684

Population biology

Popset isolate sequences 249

Metabolism

Metabolic pathways 345

Compounds 85

Data access

Data sets 1

Searches 3

Filter fields

Select a result filter above

Filter organisms

select all | clear all | expand all | collapse all

Type a taxonomic name

Plasmodium adleri 322

Plasmodium berghei 370

Plasmodium bitcolinae 375

Plasmodium blacklocki 355

Plasmodium chabaudi 258

Gene - PCYB_132500 kinase

Organism: Plasmodium cynomolgi strain B

Fields matched: GO terms; InterPro domains; Product descriptions

Gene - PKNOH_S07456300 Kinase

Organism: Plasmodium knowlesi strain Malaysian Strain PK1 A

Fields matched: GO terms; InterPro domains; Orthologs; Product descriptions

Gene - PKNOH_S140234600 Kinase

Gene name or symbol: IPK2

Organism: Plasmodium knowlesi strain Malaysian Strain PK1 A

Fields matched: GO terms; InterPro domains; Orthologs; PDB chains; Product descriptions

Gene - AKB8_00505 pantothenate kinase

Organism: Plasmodium fragile strain nilgiri

Fields matched: EC descriptions and numbers; GO terms; Orthologs; PDB chains; Product descriptions

Gene - AKB8_01656 phosphoglycerate kinase

Organism: Plasmodium fragile strain nilgiri

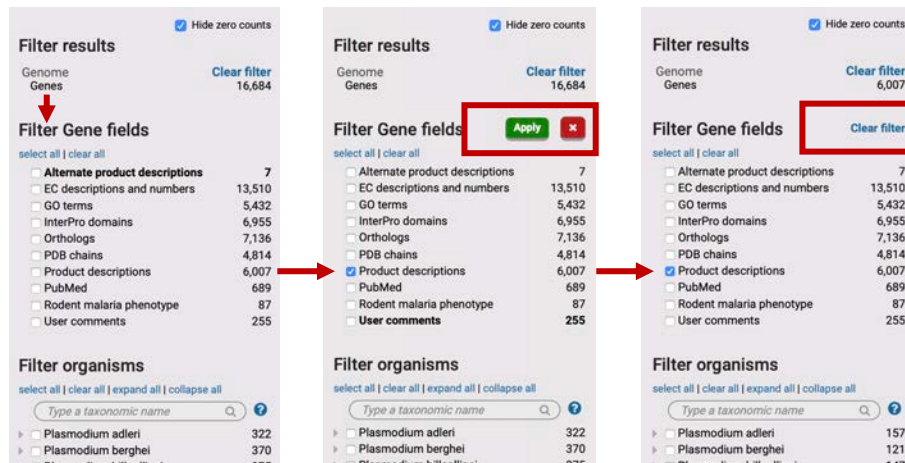
Fields matched: EC descriptions and numbers; GO terms; InterPro domains; Orthologs; PDB chains; Product descriptions

Gene - AKB8_02186 pyridoxal kinase

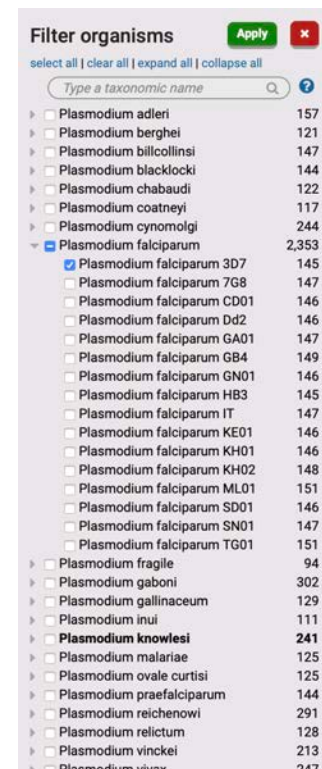
Organism: Plasmodium fragile strain nilgiri

Fields matched: EC descriptions and numbers; GO terms; InterPro domains; Orthologs; PDB chains; Product descriptions

3. How many of the genes included the word kinase in their product descriptions? Notice that once you filter the result by genes (click on the *Genes* filter), the fields section expands to reveal additional filtering options. Once you select the *Product descriptions* field you are provided the option to *apply* this filter or cancel it (box middle panel below). Once a filter is applied it can be cleared by clicking on *Clear filter* (box left panel below).



4. How many of the above genes are found in *Plasmodium falciparum* 3D7? How did you find this number? (hint: explore the *Filter organisms* section of the results filter). Select the correct organism and apply the filter.



5. Export the results to a search strategy. (hint: to achieve this click on the blue *Export as a search strategy* button at the top right-hand side of the results).

Export as a Search Strategy
to download or data mine ▶

↓

My Search Strategies

Opened (1) All (403) Public (42) Help

Unnamed Search Strategy *

Text
145 Genes
Step 1

+ Add a step

145 Genes (121 ortholog groups) [Revise this search](#)

Organism Filter
select all | clear all | expand all | collapse all
☐ Hide zero counts
Search organisms:
+ Plasmodium adleri 0
+ Plasmodium berghei 0
+ Plasmodium bilcollinsi 0
+ Plasmodium blacklocki 0
+ Plasmodium chabaudi 0
+ Plasmodium coatneyi 0
+ Plasmodium cynomolgi 0
+ Plasmodium falciparum 145
+ Plasmodium fragile 0
+ Plasmodium gaboni 0
+ Plasmodium m... 0

Gene Results **Genome View** **Analyze Results**
Genes: 145 Transcripts: 146 ☐ Show Only One Transcript Per Gene
◀ 1 2 3 ▶ Rows per page: 50
[Download](#) [Add to Basket](#) [Add Columns](#)

Gene ID	Transcript ID	Organism	Genomic Location (Gene)	Product Description
PF3D7_0102600	PF3D7_0102600.1	Plasmodium falciparum 3D7	PF3D7_01_v3:119,041..121,249(-)	serine/thr kinase, FIK
PF3D7_0103700	PF3D7_0103700.1	Plasmodium falciparum 3D7	PF3D7_01_v3:166,513..168,687(+)	L-seryl-tRNA putative
PF3D7_0107600	PF3D7_0107600.1	Plasmodium falciparum	PF3D7_01_v3:314,618..319,405(+)	eukaryotic factor 2-alc

6. Return to the site search results page. How did you do this? (hint: you can achieve this in two ways: 1. Click on your browser's back arrow. 2. Click on the back to results arrow in the site search window. Notice that your previous results and filter settings were preserved).

Site search, e.g. PF3D7_1133400 or *reductase or "binding protein" ← 🔍

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7. Clear all filters. How did you do this? (hint: you can achieve this in two ways: 1. You can click on each of the clear filter options in the filter results panel on the left (boxes below). 2. You can click on the single *clear filters option* in the site search window.

Filter results 1 ☒ Hide zero counts

Genome
Genes Clear filter

Filter Gene fields Clear filter

select all | clear all

- ☐ Alternate product descriptions 3
- ☐ EC descriptions and numbers 320
- ☐ GO terms 156
- ☐ InterPro domains 165
- ☐ Orthologs 164
- ☐ PDB chains 112
- ☒ Product descriptions 145
- ☐ PubMed 126
- ☐ Rodent malaria phenotype 42
- ☐ User comments 50

Filter organisms Clear filter

select all | clear all | expand all | collapse all

Type a taxonomic name

- ☐ Plasmodium adleri 157
- ☐ Plasmodium berghei 121
- ☐ Plasmodium billcollinsi 147
- ☐ Plasmodium blacklocki 144
- ☐ Plasmodium chabaudi 122
- ☐ Plasmodium coatneyi 117
- ☐ Plasmodium cynomolgi 244
- ☒ Plasmodium falciparum 2,353
- ☐ Plasmodium fragile 04

kinase 2 Clear filters

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8. Try the *Hide zero counts* check box in the *Filter results* panel. What does this do?

Filter results ☒ Hide zero counts

Genome
Genes 16,684

Population biology
Popset isolate sequences 249

Metabolism
Metabolic pathways 345
Compounds 85

Data access
Data sets 1
Searches 3

Filter results ☐ Hide zero counts

Genome
Genes 16,684
Genomic sequences 0

Organism
Organisms 0

Transcriptomics
ESTs 0

Population biology
Popset isolate sequences 249
Field samples 0

Metabolism
Metabolic pathways 345
Compounds 85

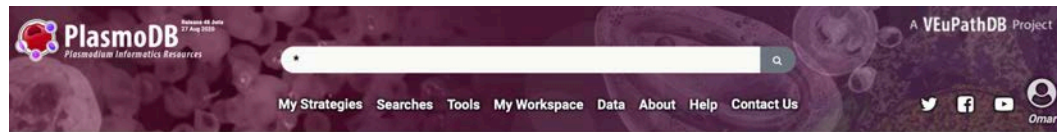
Data access
Data sets 1
Searches 3

Instructional
Tutorials 0
Workshop exercises 0

About
News 0
General info pages 0

→

9. Try running a search with a wild card. The wild card is denoted by an asterisk *. The wild card can be used alone to retrieve all results available to the site search or combined with a word such as **kinase* to retrieve compound words ending with the word kinase like phosphofructokinase. As usual results can then be explored using the filters in the *Results filter* on the left side of the website.



The header of the PlasmoDB website features the PlasmoDB logo on the left, a search bar in the center, and navigation links on the right. The search bar contains an asterisk (*). The navigation links include 'My Strategies', 'Searches', 'Tools', 'My Workspace', 'Data', 'About', 'Help', and 'Contact Us'. Social media icons for Twitter, Facebook, YouTube, and a user profile icon labeled 'Omar' are also present.

All results matching *

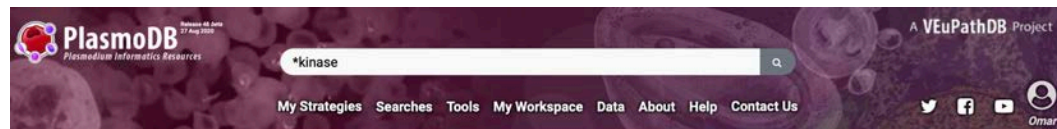
Export as a Search Strategy
to download or mine your results

1 - 20 of 516,501

1 2 3 ... 25,826

Filter results	
<input type="checkbox"/> Hide zero counts	
Genome	
Genes	259,253
Genomic sequences	16,485
Organism	
Organisms	45
Transcriptomics	
ESTs	112,511
Population biology	
Popset isolate sequences	62,596
Field samples	0
Metabolism	
Metabolic pathways	3,045
Compounds	61,998
Data access	
Data sets	265
Searches	277
Instructional	
Tutorials	11
Workshop exercises	0
About	
News	1
General info pages	14

Compound - CHEBI:10000	Vismione D
Compound - CHEBI:10001	Visnadin
Compound - CHEBI:10002	Visnagin
Compound - CHEBI:10003	ribostamycin sulfate
Definition: An aminoglycoside sulfate salt resulting from the reaction of ribostamycin with sulfuric acid.	
Compound - CHEBI:100147	nalidixic acid
Definition: A monocarboxylic acid comprising 1,8-naphthyridin-4-one substituted by carboxylic acid, ethyl and methyl groups at positions 3, 1, and 7, respectively.	
Compound - CHEBI:10014	Voacamine
Compound - CHEBI:10015	vobasine
Definition: An indole alkaloid that is vobasin in which the bridgehead methyl group is substituted by a methoxycarbonyl group and an additional oxo substituent is present in the 3-position.	
Compound - CHEBI:10016	vobtusine
Compound - CHEBI:10017	volemitol
Definition: A heptitol that is heptane-1,2,3,4,5,6,7-heptol that has R-configuration at positions 2, 3, 5 and 6.	
Compound - CHEBI:10018	volkenin
Definition: A cyanogenic glycoside that is (4R)-4-hydroxycyclopent-2-ene-1-carbonitrile attached to a beta-D-glucopyranosyloxy at position 1.	
Compound - CHEBI:10019	Vomicine



The header of the PlasmoDB website features the PlasmoDB logo on the left, a search bar in the center, and navigation links on the right. The search bar contains the text '*kinase'. The navigation links include 'My Strategies', 'Searches', 'Tools', 'My Workspace', 'Data', 'About', 'Help', and 'Contact Us'. Social media icons for Twitter, Facebook, YouTube, and a user profile icon labeled 'Omar' are also present.

All results matching *kinase

Export as a Search Strategy
to download or mine your results

1 - 20 of 18,073

1 2 3 ... 904

Filter results	
<input checked="" type="checkbox"/> Hide zero counts	
Genome	
Genes	17,272
Population biology	
Popset isolate sequences	281
Metabolism	
Metabolic pathways	425
Compounds	91
Data access	
Data sets	1
Searches	3
Filter fields	
Select a result filter above	

Gene - AK88_00104	CK1/CK1/CK1-D protein kinase
Organism: Plasmodium fragile strain nilgiri	
Fields matched: EC descriptions and numbers; GO terms; InterPro domains; Orthologs; PDB chains; Product descriptions	
Gene - AK88_00479	CAMK protein kinase
Organism: Plasmodium fragile strain nilgiri	
Fields matched: EC descriptions and numbers; GO terms; InterPro domains; Orthologs; PDB chains; Product descriptions	
Gene - AK88_00505	pantothenate kinase
Organism: Plasmodium fragile strain nilgiri	
Fields matched: EC descriptions and numbers; GO terms; Orthologs; PDB chains; Product descriptions	
Gene - AK88_00565	Atypical/ABC1 protein kinase
Organism: Plasmodium fragile strain nilgiri	
Fields matched: InterPro domains; Orthologs; Product descriptions	

10. Try searching for a specific gene ID. Enter the gene ID below in the site search window:

PF3D7_0310100

The screenshot shows the PlasmoDB website interface. At the top, there is a search bar with the text "PF3D7_0310100" entered. Below the search bar, the results are displayed under the heading "Genes matching PF3D7_0310100". On the left side, there is a "Filter results" panel with sections for "Filter Gene fields" and "Filter organisms". The "Filter Gene fields" section includes checkboxes for "External links", "Gene ID", and "Notes from annotators". The "Filter organisms" section includes a search box and checkboxes for "Plasmodium falciparum" and "Plasmodium gaboni". The main results area shows two entries. The first entry is "Gene - PF3D7_0310100 calcium-dependent protein kinase 3" with "Gene name or symbol: CDPK3" and "Organism: Plasmodium falciparum 3D7". The second entry is "Gene - PGSY75_0310100 calcium-dependent protein kinase 3" with "Gene name or symbol: CDPK3" and "Organism: Plasmodium gaboni strain SY75".

PlasmoDB
Plasmodium Informatics Resources

PF3D7_0310100

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A VEuPathDB Project

Genes matching **PF3D7_0310100**

Export as a Search Strategy
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1 - 2 of 2

Filter results ☒ Hide zero counts

Genome
Genes 2

Filter Gene fields
select all | clear all

- ☐ External links 1
- ☐ Gene ID 1
- ☐ Notes from annotators 1

Filter organisms
select all | clear all | expand all | collapse all

Type a taxonomic name

- ☐ Plasmodium falciparum 1
- ☐ Plasmodium gaboni 1

Gene - PF3D7_0310100 calcium-dependent protein kinase 3
Gene name or symbol: CDPK3
Organism: Plasmodium falciparum 3D7
Fields matched: External links; Gene ID

Gene - PGSY75_0310100 calcium-dependent protein kinase 3
Gene name or symbol: CDPK3
Organism: Plasmodium gaboni strain SY75
Fields matched: Notes from annotators

1 - 2 of 2

Notice that the gene of interest appears at the top for easy access. You can click on the Gene ID to go the gene page.