

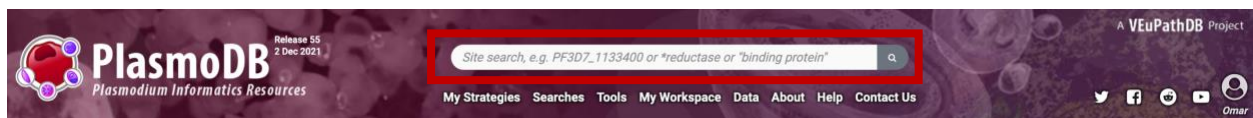
Site Search

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

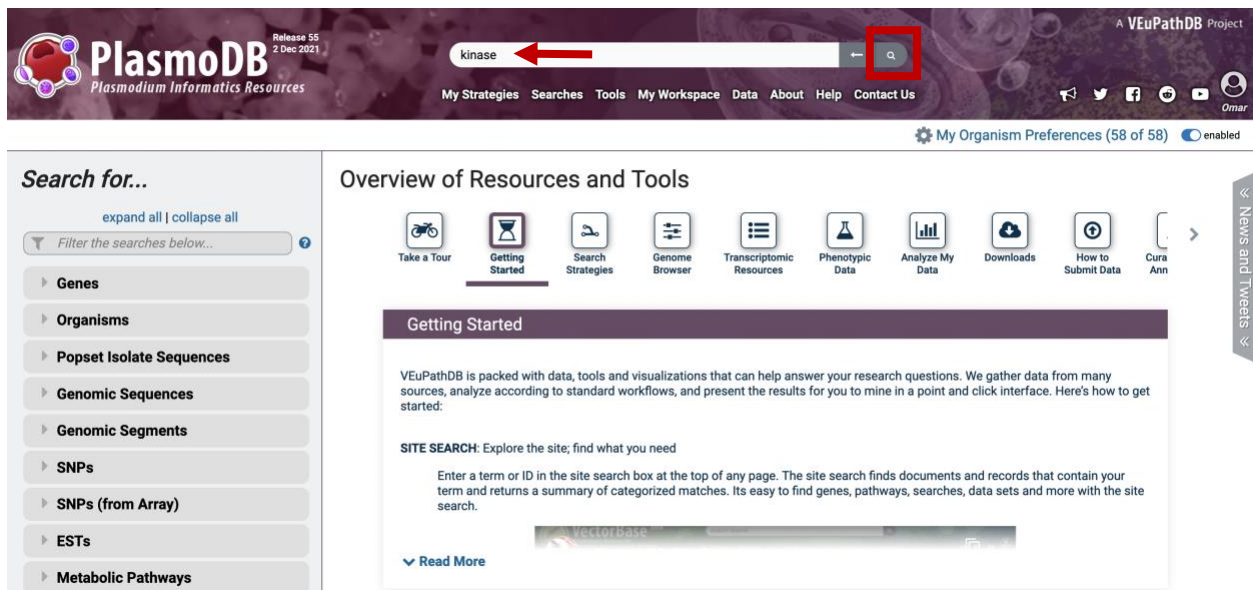
Learning objectives:

- 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

The site search is located in the header of any VEuPathDB site and is available from every page. The site search queries the databases for your term or ID and returns a list of pages and documents that contain your query term.



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



2. The site search returns a categorized list of pages and documents that contain your term. Site search results are summarized by category, with a details panel on the right. Changing the panel on the left will populate the details panel with that list. What is the total number of results with the word kinase? Are all the results genes? Explore the filter panel on the left side of the webpage.

The screenshot shows the PlasmoDB website interface. At the top, there's a header with the PlasmoDB logo, release information (Release 55, 2 Dec 2021), a search bar containing 'kinase', and navigation links. Below the header, a banner indicates 'All results matching kinase' with a count of 1 - 20 of 15,647. On the left, a 'Filter results' panel is visible, with a red arrow pointing to the 'Genes' category. The 'Filter fields' and 'Filter organisms' sections are also present. On the right, a details panel lists search results for 'kinase', including gene names, organism names, and fields matched. A red bracket at the bottom of the image groups the 'Filter results' and 'Filter fields' sections, and another red bracket groups the details panel.

PlasmoDB
Plasmodium Informatics Resources
Release 55
2 Dec 2021

kinase

My Strategies Searches Tools My Workspace Data About Help Contact Us

My Organism Preferences (58 of 58) enabled

All results matching **kinase**

1 - 20 of 15,647

Export as a Search Strategy to download or mine your results

Filter results
Hide zero counts

Genome
Genes 14,902
Population biology
Popset isolate sequences 352
Metabolism
Metabolic pathways 309
Compounds 80
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

Plasmodiidae 14,903
Hepatocystis sp. ex Piliocolobus 291
trophozoites 2019
Plasmodium 14,612

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 Malayan 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 Malayan Strain Pk1 A
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; InterPro domains; Orthologs; PDB chains; Product descriptions

Gene - AK88_01656 phosphoglycerate kinase
Organism: Plasmodium fragile strain nilgiri
Fields matched: EC descriptions and numbers; GO terms; InterPro domains; Orthologs; PDB chains; Product descriptions

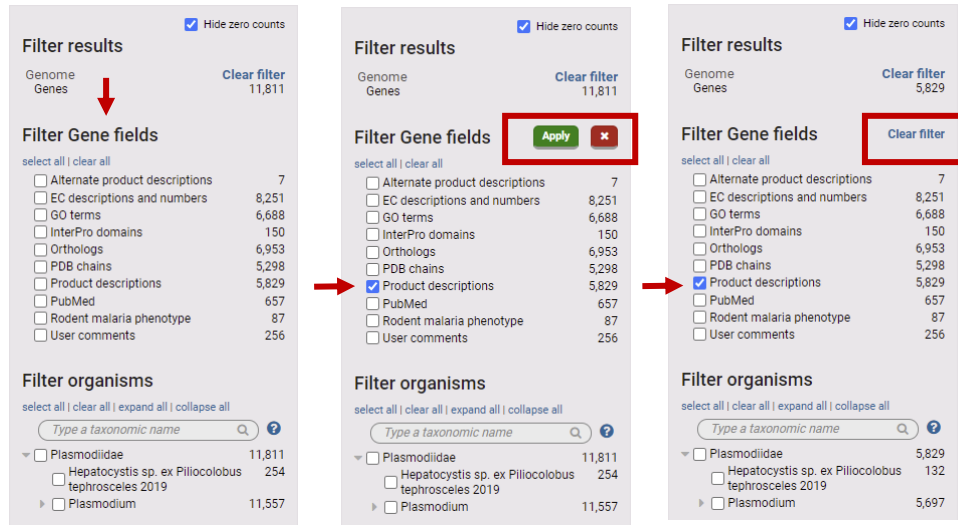
Gene - AK88_02186 pyridoxal kinase
Organism: Plasmodium fragile strain nilgiri
Fields matched: EC descriptions and numbers; GO terms; InterPro domains; Orthologs; PDB chains; Product descriptions

Results summarized in categories

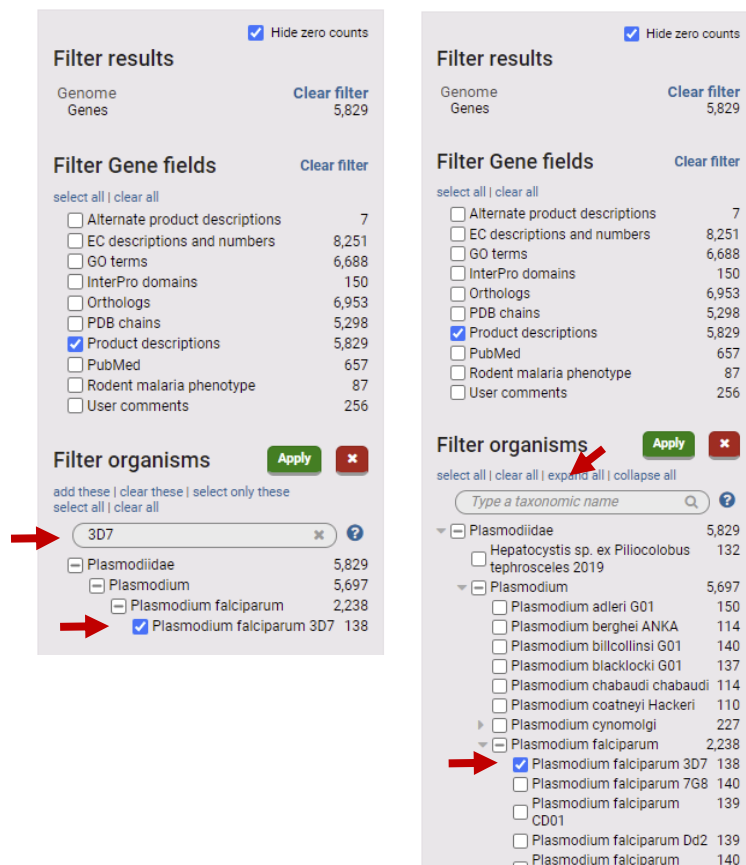
Details panel with information about each item returned

3. Filter the results so that you only view gene results (hint: click on the word *genes* in the *Filter results* section; arrow in image above). 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 Filter Fields section expands to reveal additional filtering options. Select the *Product descriptions* field and Choose *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. There is a search option to aid navigation through the organism tree (left) or the tree can be expanded to find the organism of interest (right). Select the correct organism and apply the filter.



- Export the results to a search strategy. Use 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 mine your results ▶

↓

Unnamed Search Strategy *

Text

+ Add a step

Text

+ Add a step

Step 1

138 Genes (114 ortholog groups) [Revise this search](#)

Organism Filter

select all | clear all | expand all | collapse all

☐ Hide zero counts

Search organisms...

☐ Hepatocystis sp. ex Pilicoccus 0

☐ tephrosceles 2019

☒ Plasmodium 138

select all | clear all | expand all | collapse all

☐ Hide zero counts

Hide Organism Filter

Gene Results | Genome View | **Analyze Results**

Genes: 138 Transcripts: 139 ☐ Show Only One Transcript Per Gene

Rows per page: 1000

Gene ID	Transcript ID	Organism	Genomic Location (Gene)	Product Description
PF3D7_0102600	PF3D7_0102600.1	Plasmodium falciparum 3D7	Pf3D7_01_v3:118,812..122,534(-)	serine/threonine protein kinase, FIKK family
PF3D7_0103700	PF3D7_0103700.1	Plasmodium falciparum 3D7	Pf3D7_01_v3:166,497..168,687(+)	L-seryl-tRNA(Sec) kinase, putative
PF3D7_0107600	PF3D7_0107600.1	Plasmodium falciparum 3D7	Pf3D7_01_v3:313,824..319,525(+)	eukaryotic translation initiation factor 2-alpha kinase 2, putative
PF3D7_0110900	PF3D7_0110900.1	Plasmodium falciparum 3D7	Pf3D7_01_v3:419,727..420,942(-)	adenylate kinase-like protein 1
PF3D7_0111500	PF3D7_0111500.1	Plasmodium falciparum 3D7	Pf3D7_01_v3:439,395..442,195(-)	UMP-CMP kinase, putative
PF3D7_0203100	PF3D7_0203100.1	Plasmodium falciparum 3D7	Pf3D7_02_v3:148,914..157,296(-)	protein kinase, putative
PF3D7_0211700	PF3D7_0211700.1	Plasmodium falciparum 3D7	Pf3D7_02_v3:469,408..474,167(+)	tyrosine kinase-like protein, putative

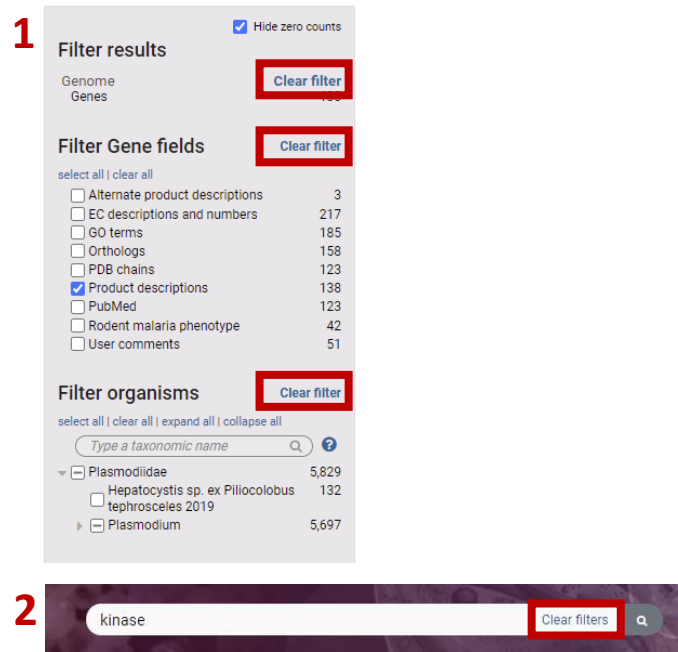
- Return to the site search results page. You can achieve this in two ways: 1. Your previous results and filter settings were preserved and can be accessed by clicking on the 'back to results' arrow in the site search window. 2. Click on your browser's back arrow. Notice that

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

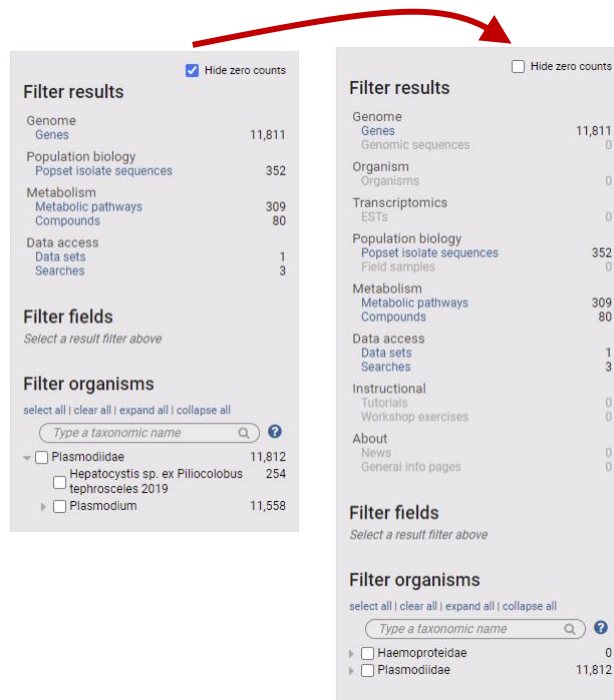
←

[My Strategies](#)
[Searches](#)
[Tools](#)
[My Workspace](#)
[Data](#)
[About](#)
[Help](#)
[Contact Us](#)

7. Clear all filters. You can achieve this in two ways: 1. You can click on each of the clear filter options in the filter results panel (boxes below). 2. You can click on the *clear filters* option in the site search window, which serves to Clear All filters.



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



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.

PlasmoDB Plasmodium Informatics Resources Release 55 2 Dec 2021 A VEuPathDB Project

My Strategies Searches Tools My Workspace Data About Help Contact Us

My Organism Preferences (58 of 58) enabled

All results matching *

Export as a Search Strategy to download or mine your results

1 - 20 of 810,060

Filter results ☒ Hide zero counts

Genome	
Genes	296,931
Genomic sequences	21,968
Organism	
Organisms	58
Transcriptomics	
ESTs	272,865
Population biology	
Popset isolate sequences	152,489
Metabolism	
Metabolic pathways	3,045
Compounds	61,998
Data access	
Data sets	314
Searches	357
Instructional	
Tutorials	15
Workshop exercises	1
About	
News	2
General info pages	17

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 vobasine 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

All results matching *kinase

Export as a Search Strategy to download or mine your results

1 - 20 of 18,033

Filter results ☒ Hide zero counts

Genome	
Genes	16,243
Population biology	
Popset isolate sequences	1,273
Metabolism	
Metabolic pathways	425
Compounds	88
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

☐ Plasmodiidae 16,244

☐ Hepatocystis sp. ex Piliocolobus 323

☐ tephrosceles 2019

☐ Plasmodium 15,921

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; InterPro domains; Orthologs; PDB chains; Product descriptions

Gene - AK88_00565 Atypical/ABC1 protein kinase

Organism: Plasmodium fragile strain nilgiri

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

Gene - AK88_00580 CMGC protein kinase

Organism: Plasmodium fragile strain nilgiri

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

Gene - AK88_00633 CMGC/GSK protein kinase

Organism: Plasmodium fragile strain nilgiri

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 header with the PlasmoDB logo, release information (Release 52, 20 May 2021), a search bar containing the query 'PF3D7_0310100', and navigation links (My Strategies, Searches, Tools, My Workspace, Data, About, Help, Contact Us). A user profile icon for 'Susanne' is also visible. Below the header, the main content area displays 'Genes matching PF3D7_0310100' with a button to 'Export as a Search Strategy'. A filter sidebar on the left allows filtering by genome (Genome: 2, Genes: 2), gene fields (External links: 1, Gene ID: 1, Notes from annotators: 1), and organisms (Plasmodiidae: 2, Plasmodium: 2). The search results list three genes: 'Gene - PF3D7_0310100 calcium-dependent protein kinase 3' (Gene name or symbol: CDPK3, Organism: Plasmodium falciparum 3D7), 'Gene - PF3D7_0310100 calcium-dependent protein kinase 3' (Gene name or symbol: CDPK3, Organism: Plasmodium falciparum 3D7), and 'Gene - PGSY75_0310100 calcium-dependent protein kinase 3' (Organism: Plasmodium gaboni strain SY75).

PlasmoDB
Plasmodium Informatics Resources
Release 52
20 May 2021
A VEuPathDB Project
My Strategies Searches Tools My Workspace Data About Help Contact Us
Twitter Facebook YouTube Susanne

Genes matching **PF3D7_0310100** [Export as a Search Strategy to download or mine your results](#)

1 - 2 of 2

Filter results ☒ Hide zero counts

Genome 2
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
☐ Plasmodiidae 2
☐ Plasmodium 2

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

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
Organism: Plasmodium gaboni strain SY75
Fields matched: Notes from annotators

When the query ID has an exact match in the database, the site search returns a card at the top of the details panel for easy access to the gene page. The site search also returns other pages that contain the query ID. Click on the Gene ID to go the gene page.