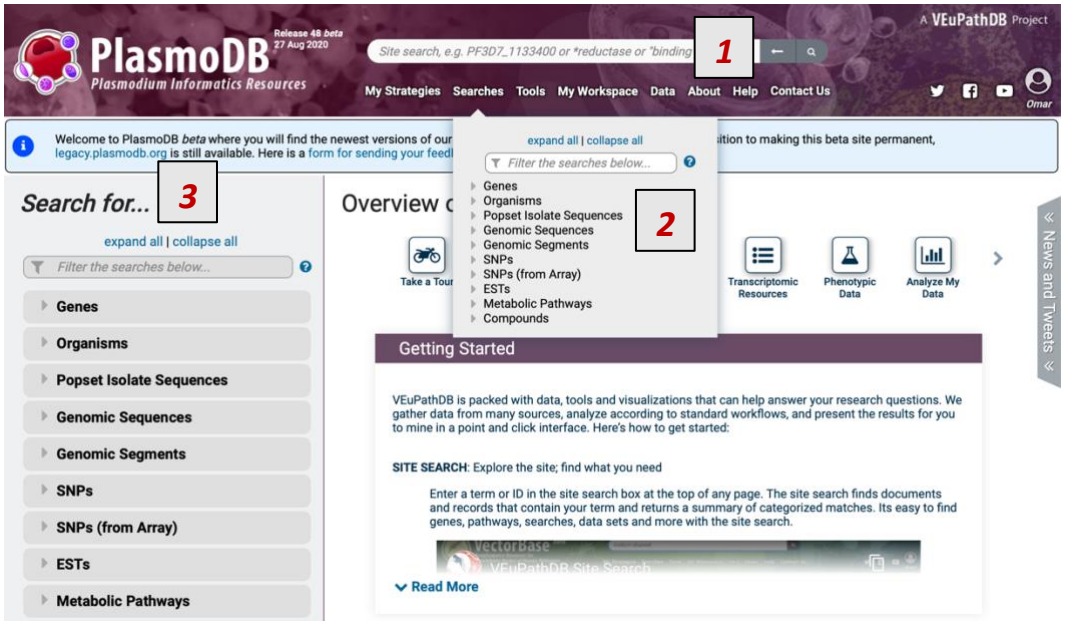
Search Strategies

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

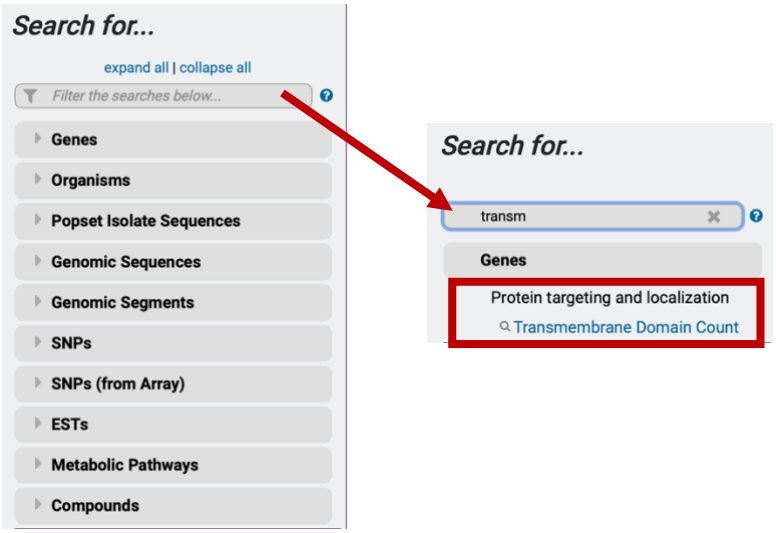
Learning objectives:

- Running a search to start a search strategy
- Adding steps in a search strategy
- Adding and sorting results
- Revising steps

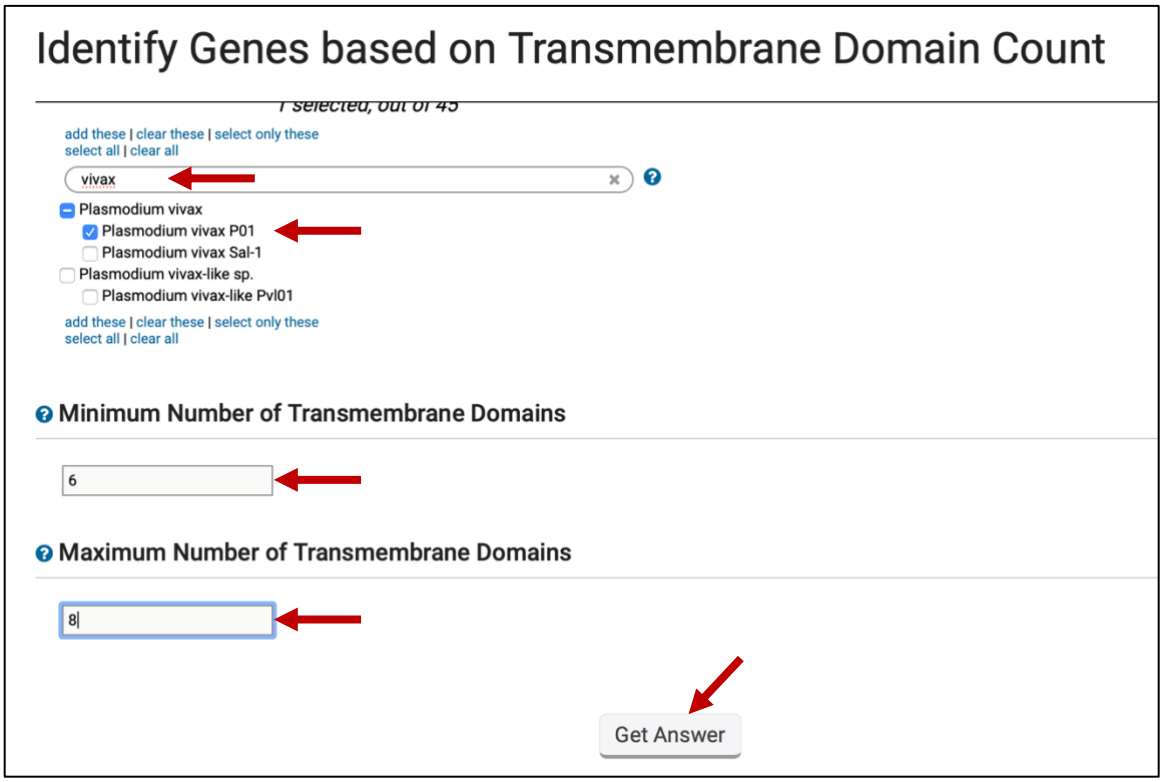
There are three options to start a Search Strategy. 1) From the "Site Search" box ---> Export as Search Strategy, 2) In the site header from the "Searches" menu and 3) In the home page (left hand side) from the "Search for …" section.



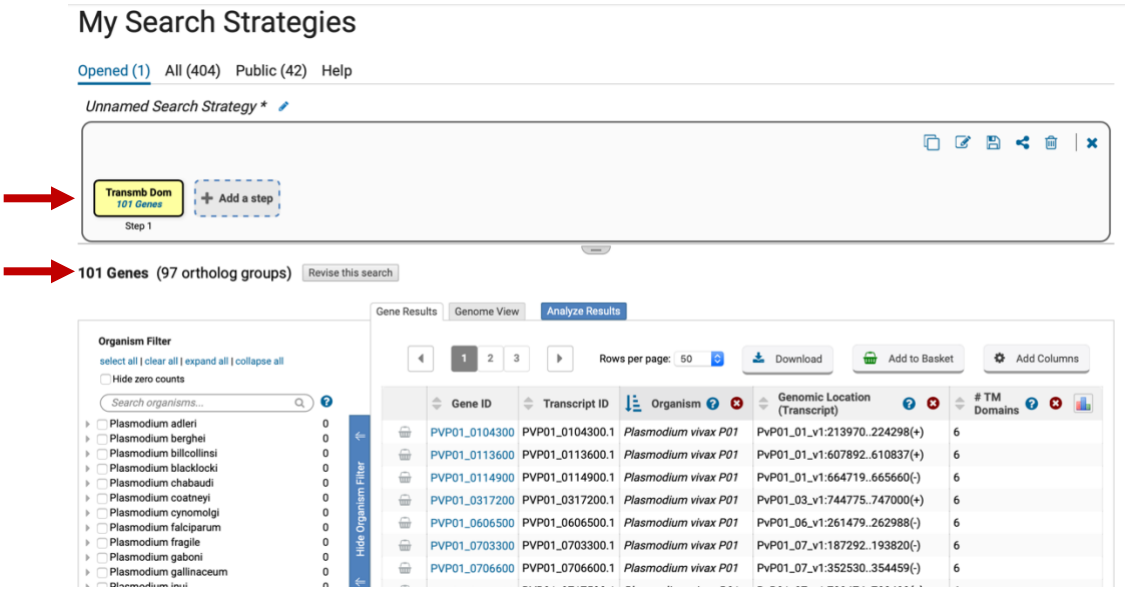
1. Go to the home page and in the "Search for …" section on the left, filter the searches by typing the word *transmembrane* to find the ***Transmembrane Domain Count*** **search** in the filtered results.



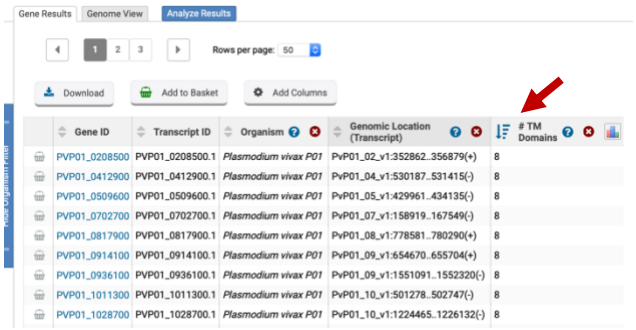
2. Click on the transmembrane (TM) domain count search to get to the search page. Configure this search to find all genes from *Plasmodium vivax* P01 that have at least 6 TM domains and at most 8 TM domains. See image below if you need help with the configuration.

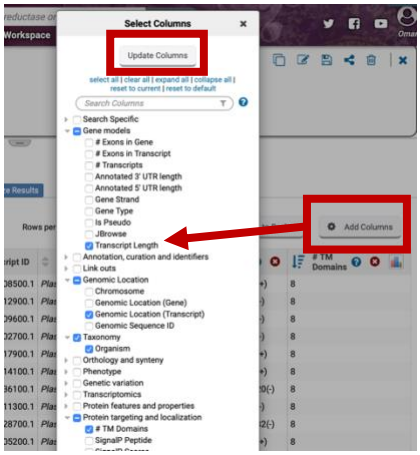


3. How many genes did you obtain? (hint: look at the number results in the strategy step in yellow, or the number right above the results and below the search strategy).

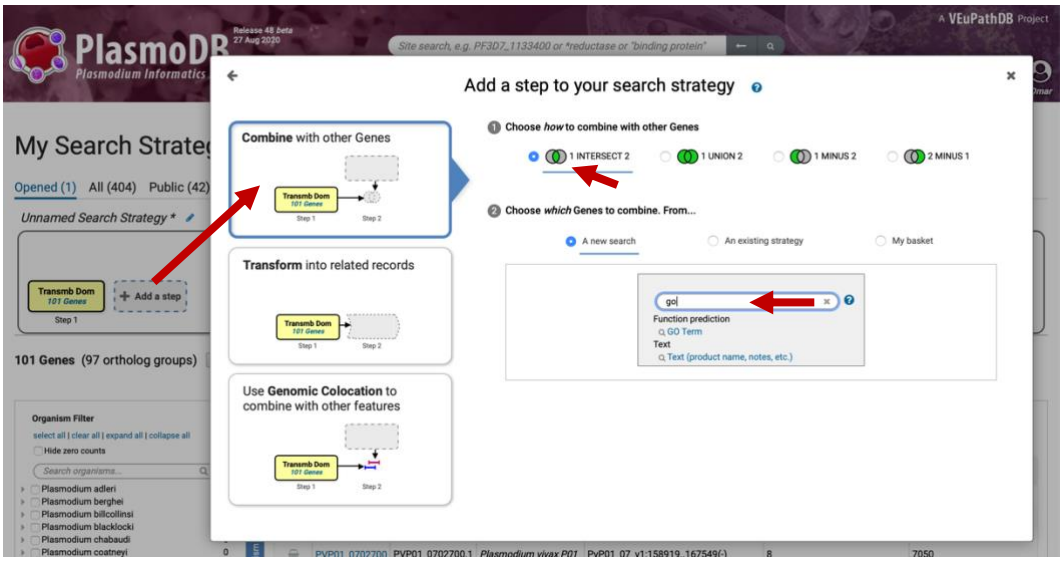


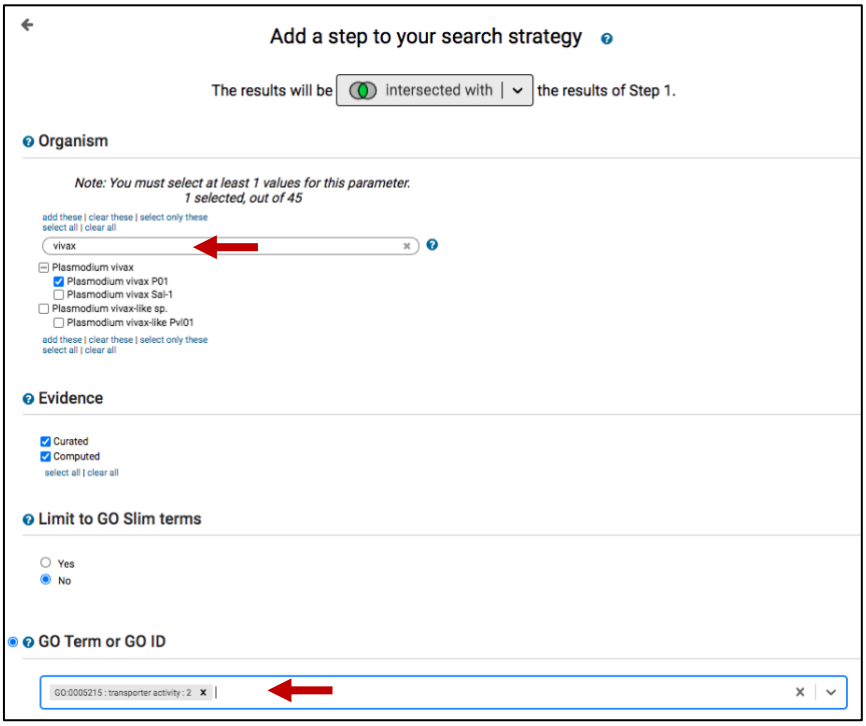
4. Explore the results table. Try the following things:
    a. Sort the #TM domain column to show genes with 8 TM domains first.
    b. Add a column for transcript length (Click on add columns and find the transcript length column, then click on update columns).



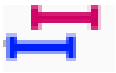


5. Add a step to your strategy. Click on the add step button then find the search for genes with GO Terms. When you find it select it and configure the search to find all genes with the GO term “Transporter activity”. See screen shots below if you need help.

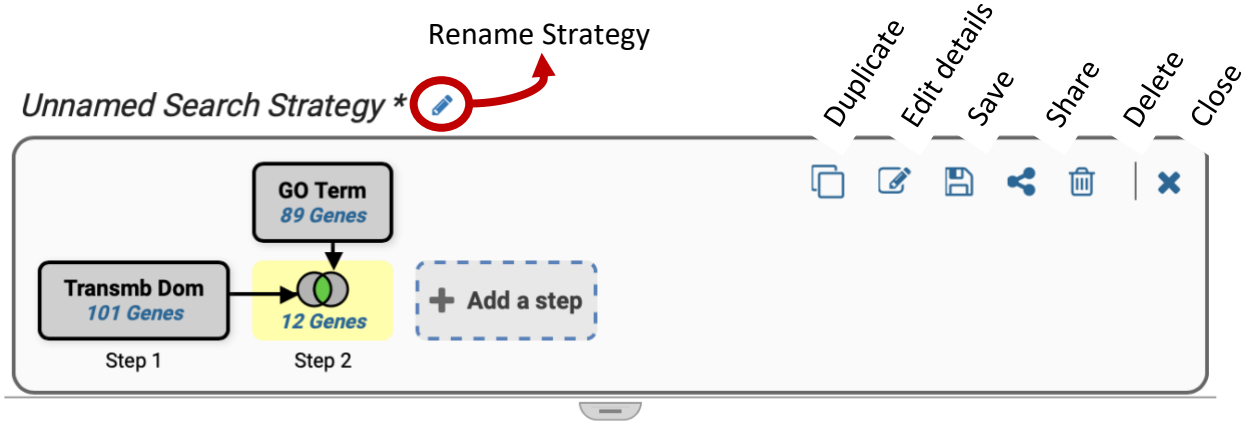




Notice that you have different options on how to combine results from searches in your strategy. What do you each of the operations do?

Operator	Combined Result will contain
2 INTERSECT 3	IDs in common between the two lists
2 UNION 3	IDs from list 2 and list 3
2 MINUS 3	IDs unique to 2
3 MINUS 2	IDs unique to 3
	IDs whose features are near each other (collocated) in the genome

6. You can rename, duplicate, delete, save and share strategies (saving and sharing strategies requires creating and account and logging in). You can also rename each



individual step in a strategy.

7. Revising a step in a strategy. You can revise any step in a strategy by moving your mouse over the step you want to revise until you see the edit button appear on the step.
8. Revise the first step in your strategy and change the TM domain parameter to include genes with a minimum of 5 TMs and a maximum of 12 TMs. How does this change your final results?