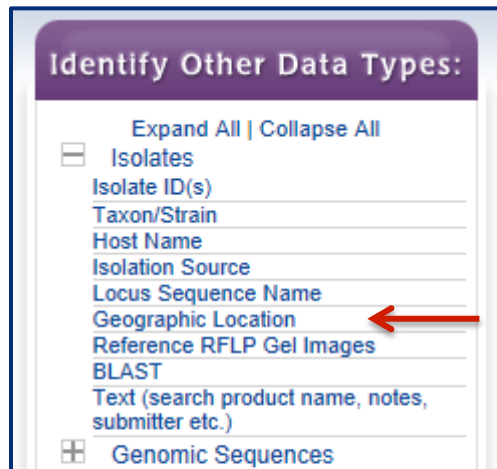


Exploring Isolate Data Exercise 8

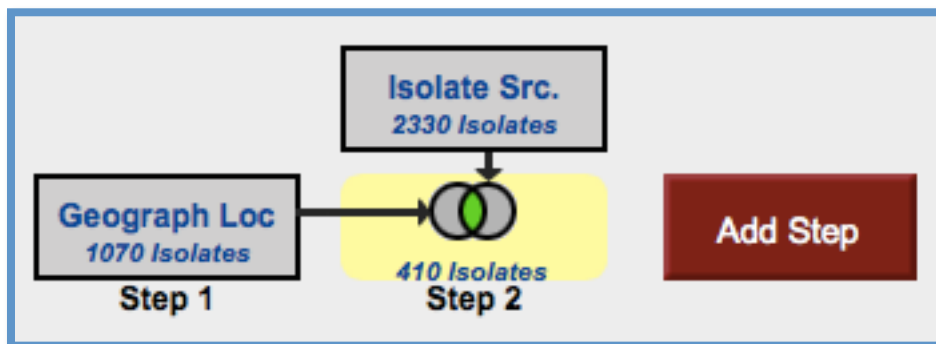
8.1 Exploring isolates in *Cryptosporidium* and using the alignment tool.

Note: For this exercise use <http://www.cryptodb.org>

- a. Identify all *Cryptosporidium* isolates from Europe.
Hint: search for isolates by geographic location in the “Identify Other Data Types” section.



- b. How many of the *Cryptosporidium* isolates collected in Europe were isolated from feces?
Hint: add another isolate search step.



- c. What is the general distribution of these isolates in Europe? (hint: you can do this quickly in two ways: sort the geographic location column by clicking on the sort arrows, then look at the represented countries; or use the “Isolate Geographical Location” tab to view a map and results summary table).

Sort by clicking on the arrows

Isolate ID	Geographic Location	Organism	Strain/Isolate Name	Host	Isolation Date
AB242224	Serbia	Cryptosporidium parvum	#6	Unknown	fecal sample
AB242225	Serbia	Cryptosporidium parvum	#24	Unknown	fecal sample
AB242226	Serbia	Cryptosporidium parvum	#42	Unknown	fecal sample
AB242227	Serbia				

Country	Number of Isolates	Isolate Type	Latitude	Longitude
Belgium	1	Sequencing Typed	50.503887	4.469936
Czech Republic	73	Sequencing Typed	49.817492	15.472962
Germany	90	Sequencing Typed	51.165691	10.451526
Ireland	4	Sequencing Typed	53.41291	-8.24389
Italy	11	Sequencing Typed	41.87194	12.56738
Lithuania	1	Sequencing Typed	55.169438	23.881275
Netherlands	41	Sequencing Typed	52.132633	5.291266

- d. Out of those in step ‘b’, how many are unclassified *Cryptosporidium* species?
Hint: add another isolate search step.
- e. How many of step ‘b’ isolates originated from humans? (hint: you can insert a step within a strategy. Click on the name of the step you want to insert a step before, then click on “Insert step before”).

8.2 Typing an unclassified isolate.

Note: For this exercise use <http://www.cryptodb.org>

- Run a search to find all unclassified *Cryptosporidium* isolates and find one that was typed using 18S small subunit ribosomal RNA. (Hint: Identify Isolates based on Taxon/Strain and choose 'unclassified' under *Cryptosporidium*. Add a column for Gene Product and sort the column).

Select Columns

Update Columns

clear all | expand all | collapse all
reset to current | reset to default

- Organism
- Strain/Isolate Name
- Host
- Isolation Source
- Geographic Location
- EuPathDB Annotated Host
- EuPathDB Annotated Isolation Source
- EuPathDB Annotated Geographic Location
- Gene Product (Sequence Typed Only)
- Description
- Is Reference
- Isolate Type
- Weight

clear all | expand all | collapse all
reset to current | reset to default

Update Columns

Gene Product (Sequence Typed Only)
18S rRNA
COWP
COWP

- Go to the isolate record page and copy the DNA sequence.
- Go to search for isolates based on BLAST, select isolates and make sure only the reference isolates are selected in the target organism window.
- Paste the DNA sequence in the input window and select the Blastn program. Click on "Get Answer".
- Explore your results. Based on the similarity which reference isolate is this one closest to?

Target Data Type ?

- Transcripts
- Proteins
- Genome
- EST
- ORF
- Isolates

BLAST Program ?

- blastn
- blastp
- blastx
- tblastn
- tblastx

Target Organism ?

select all | clear all | expand all | collapse all | reset to default

- Cryptosporidium Isolates minus Reference
- Cryptosporidium Reference Isolates

select all | clear all | expand all | collapse all | reset to default

Input Sequence ?

```
AATTAGAGTGCCTTAAGCAGGC
ATTGCGCTGAATACTCCAGCATGGAATAATATTTAAG
ATTTTATCTTTCTTATGGTT
CTAAGATAAAAATAATGATTAATAGGGACAGTTGGGG
CATTGTAATTA
```

Note: only one input sequence allowed.
maximum allowed sequence length is 31K bases.

Expectation value ? 10

Maximum descriptions (V) ? 50

Maximum alignments (B) ? 50

Low complexity filter ? yes

Give this search a weight

Give this search a name

Get Answer