## Honey Bee Viral Sequence Tutorial w/ Chromatograms



https://dnasubway.cyverse.org/





## **Download sequences** grownextgen.org/go/honeybee



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### **3 Stops**



## **Stop #1 Assemble Sequences**

#### 1. Click 'Sequence Viewer'









- 1. Click 'Sequence Trimmer' to Run Trimmer Tool (blinks)
- 2. Click 'Sequence Trimmer' again to view trimmed sequences



-299-F 🖂 🦊	C1 EC2 3 ECC3 3 ECEE COCE3 ECC3 EC3 COCO			
	GATGAATGCAATGTTGCGTATGGATGAGCCCCI	FTGGAAGGCGATAATATTTTAAATAAGTA	ATGTTGAAGTTAATCAGCGCTTAGT	т
-299-R 🖂 🖊	GGGTCGCTCTTTAAGCTTTCATTTCCTCAACT	FAAGCGCTGATTAACTTCAACATACTTAT	TTAAAATATTATCGCCTTCCAAGG	G
-300-F 🖂	GATGAATGCAATGTTGCGTATGGATGAGCCCT	FTGGAAGGCGATAATATTTTAAATAAGTA	ATGTTGAAGTTAATCAGCGCTTAGT	T
-300-R 🖂 🖊	AGGGTTCGCTCTTTAAAGCTTTCATTTCCTCA	AACTAAGCGCTGATTAACTTCAACATACT	TATTTAAAATATTATCGCCTTCCAA	A
	4		*	1
ograr	is and sequence	s have heen t	rimmed	
	-300-F	-300-F AGGTTCGCTCTTTAAAGCTTTCATTTCCTCA		

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Statue

#### **Click 'Pair Builder'**







#### Click 'Consensus Builder'



The R will turn to a flashing R (running) for 1-2 seconds while program is running. Click again to open once V shows.



## **Stop #2 Add Sequences**

#### Click 'BLASTN' (Basic Local Alignment Tool – for Nucleotides) to run









## **Stop #3 Analyze Sequences**

### Click 'Select Data'





# Click 'MUSCLE' (<u>Multiple Sequence Comparison by Log-Expectation</u>) to run algorithm, then click again to view.



#### **MUSCLE Results Window**

Home Home DN SUB Alignment Viewer SEQUENCE SIMILARITY %	<b>)</b>
Home DN Alignment Viewer SEQUENCE SIMILARITY %	Y
Alignment Viewer  SUBWA SUBWA SEQUENCE SIMILARITY %	Y
Alignment Viewer	
SEQUENCE SIMILARITY %	
	sfer
Sequence Conservation	
Sequence Variation	
Consensus	
1. Colony-299	
2. Colony-300	5
3. NC_006494.1 varroa_destructor	$\mathcal{D}$
4. NC_004830.2 deformed_wing	
Example a lignment     DNASubway Alignment Viewer     Launch in Jalview	
Glossary Status :  Private O Public Parameters :	1949-01
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Table shows the pairwise comparisons between the different sequences in the alignment. The top diagonal and bottom diagonal give the same pairwise results (mirrored).

2. Colony-299 sequence is only 86.5% similar to NC\_004830.2 Deformed Wing [Virus]

