



## Molecular Forensics Bioinformatics Exercise <sup>1</sup> Actual Epidemiological Research on HIV used in a Court of Law

Data and Background Material provided by:  
Microbes Count! Problem Posing, Problem Solving, and Peer Persuasion in Microbiology  
John R. Jungck, Marion Field Fass, and Ethel D. Stanley, Editors  
BioQUEST Curriculum Consortium

Read through the SDSC<sup>2</sup> tutorial and informational pages provided. Click on the “How to” link before you continue with this exercise.

After you have completed the tutorial, enter into the site:

<http://workbench.sdsc.edu/>

Sign in or register.

Save your password here: \_\_\_\_\_

Read through the *Molecular Forensics* section by Sam Donovan on pages 129-136 of the Microbes Count! text.

Open the Microbes Count! Site according to the instructions provided in the text and locate the Chapter 4.3 Section. Open the “Data File Read Me” to view the GenBank accession numbers for the sequences used in this exercise.

Now you are ready to import the sequences (provided by the site) and analyze the sequences using the tools provided by the San Diego Super Computer site.

### Session Tools

Click Start New Session → Run → Type in the name of your session. Click Start New Session.

### Nucleic Tools

Add New Nucleic Sequences → Run

Browse to Microbes Count! Site

Chapter 4.3

Exercise Data

Upload File (Select All → Edit Copy → Edit Paste)

Scan the entire page to see that all six sequences are uploaded

Save (found at bottom of page)

### Nucleic Tools

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<sup>1</sup> Jungck, J., Fass, M., Stanley, E. Stanley, ed. Microbes Count! Problem Posing, Problem Solving, and Peer Persuasion in Microbiology. BioQUEST Curriculum Consortium with The Microbial Literacy Collaborative, 2003.

<sup>2</sup> <http://workbench.sdsc.edu/>

Select All Sequences

Run

#### Nucleic Tools

Clustal W Multiple Sequence Alignment (be sure all sequences are selected) → Run → Submit

Check that the sequences are aligned in an unrooted tree.

The results of the analysis can be copied onto a word document.

Also, you can print page 3 of the results to have a copy of the dendrogram.