

Jmol Assignment Overview

Part 1

1. Read the paper.
2. Prepare a document containing the following information:
 - a. Name of protein
 - b. Brief (half-page) description of the function of the protein and what role it plays in the cell. If known, possibly including:
 - i. What is the specific activity of the protein (kinase, esterase etc.)?
 - ii. What process is it involved in (transcription, recombination, etc.)?
 - iii. What other proteins does it interact with?
 - iv. Are there any mutants in the protein or its homologs?
 - v. What is the effect of these mutants on the cell or organism?
 - c. The PDB number accession number for the structure of the homologous protein.
 - d. A BLAST2seq alignment between your protein sequence and the protein sequence of the protein from the PDB file.

Part 2

Create 8 Jmol scripts showing the following information:

1. Overall structure showing all chains (cartoon)
2. Dimer or monomer (cartoon)
3. Secondary structure (backbone)
4. Conservation - identity and similarity (backbone)
5. Conservation - identity and similarity (spacefill)
6. Active sites with ligand - (backbone and side chains)
7. Active sites with ligand - (spacefill)
8. Structure model - (This is the final product and what we would show on a poster!)
 - a. The structure and how it relates to function
 - b. Description of what you displayed in the model and why.