

Record of 3D Macromolecular Structure Observations for Protein Explorer (Basic Level)

www.umass.edu/microbio/chime/explorer

by Eric Martz, May 2000

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Your Name _____ PDB ID Code _____

Name of Molecule _____

A. How many chains are there?

Chain Name*	Protein, DNA, or RNA?	Number of Residues? **	Disulfides?	Alpha helices? ***	Beta strands? Parallel or antiparallel? ***

Hint: click on the chain and look for the one-letter "name" in the message window.

**Hint: use the Sequence display (click the red/yellow icon, then Sequences).

***Hint: in QuickViews, DISPLAY Cartoon, COLOR Structure.

B. Is water present?

- C. Are bound ligands present (non-solvent "hetero" atoms)? If so, are they held by covalent or noncovalent bonds? To what types of residues? (Hint: SELECT Ligand, DISPLAY Contacts. Click on bonded atoms to identify their residues.)
- D. In soluble proteins, hydrophobic residues are buried in the cores of domains. Large hydrophobic patches on the surface may be sites of protein-protein interaction. Where do you see concentrations of hydrophobic residues? (Hint: DISPLAY Spacefill, COLOR Polarity3.)
- E. If there is protein bound to nucleic acid, which nucleotides are recognized in a sequence-specific manner? Which are bound nonspecifically to the backbone? (Hint: SELECT Protein, DISPLAY Contacts, click on bound atoms to identify residues.)
- F. Comments/special features?