Name:_____

CMB BCH 258 SBB MCB UPC MWI

Worksheet 5: -- Structural Classes *(== 2007)*

Refer to chapters 2--5 in Branden & Tooze.

c5Beta.kin - Protein Folds

At the end of B&T file c5Beta.kin, do the exercise in identifying protein folds:

Kinemage 10 contains a series of 8 C-α backbone structures (plus perhaps ligands or SS) of an unfamiliar protein or a domain-sized piece of a protein. Animate to switch among them, on KiNG also select the View that matches the protein.

Protein 1: To which major tertiary-structure category (α, α/β, or β) does it belong? _____
What is its specific "fold" called? _____

What is the simple rule that makes the site of ligand binding predictable for this fold?
_____ _ _ _

Protein 2: To which major tertiary-structure category does it belong? _____
What is its specific "fold" called? _____
What is the main topological feature diagnostic of this fold? _____

Protein 3: To which major tertiary-structure category does it belong? _____
What is its specific "fold" called? _____
What binds to this protein? _____
Is that usual for this fold? _____

Protein 4: To which major tertiary-structure category does it belong? _____
What is its specific "fold" called? _____
Make a simple diagram of the major secondary-structure topology in one of the internal repeats.

Protein 5: This example does not belong to one of the 3 major categories covered in the textbook. It is a small irregular protein with very little secondary structure, and its stability depends on a high percentage of SS bridges. It is an extracellular toxin.

Protein 6: To which major tertiary-structure category does it belong? _____
What is its specific "fold" called? _____
Draw a simple diagram of the secondary-structure topology.

Protein 7: To which major tertiary-structure category does it belong? _____
Ignoring the part at the bottom (which makes contact with a second subunit), which protein in the textbook does this seem most similar to? _____

Protein 8: To which major tertiary-structure category does it belong? _____
What is its specific "fold" called? _____
Is the Zn near the N-terminal or the C-terminal end of the beta strands?_____