

Due Date: March 5, 2009 (in class)

**CENG 465
Spring 2008-2009**

Written Assignment #1

Problem 1 (40 Points):

- (a) Find the amino acid sequence of the human myoglobin protein.
Write down the amino acid sequence. What is the length of the sequence? Which database did you use to find the information?
- (b) Find the amino acid sequence of the mouse myoglobin protein.
Write down the amino acid sequence. What is the length of the sequence? Which database did you use to find the information?
- (c) What is the difference between human and mouse myoglobins? Describe the differences in your own words.

Problem 2 (30 Points):

- (a) Find which chromosome the gene KRT18 is located in the human genome.
- (b) List three organisms other than human which also have the KRT18 gene.
- (c) What is the length of the protein that is encoded by human KRT18 gene?

Problem 3 (30 Points):

- (a) Find the experimentally determined structure of the protein encoded by the human glycophorin A gene (GYPA). What is the PDB id of the protein?
- (b) Which experimental technique was used to find the structure of this protein?
- (c) Find the secondary structure information for this protein structure. What secondary structure types does this protein contain? How many helices are there? How many beta strands are there? Describe the three dimensional shape of this protein in your own words.