

Round: 8B

1. Ocean acidification poses a major threat to ocean wildlife. Briefly describe how one of the ions produced from dissolving carbon dioxide in water can affect marine pteropods. (4 pts)
2. In an attempt to reduce atmospheric carbon dioxide concentrations, iron addition experiments have been carried out in various marine locations. Describe how the addition of iron to the ocean could be used to sequester atmospheric carbon dioxide. (8 pts)
3. Which of the iron-containing metalloproteins pictured below plays the most significant role in the sequestration of atmospheric carbon dioxide? Explain its biochemical function. (4 pts)

Figure 1: Ferredoxin

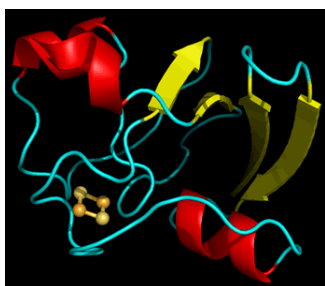


Figure 2: Myoglobin

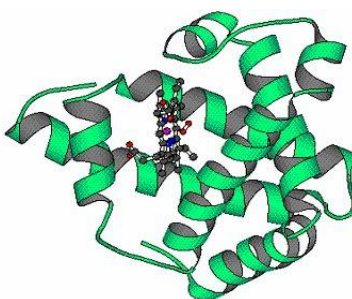
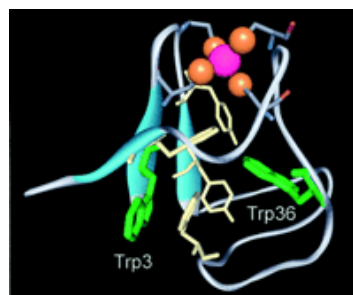


Figure 3: Rubredoxin



4. Give an example of another trace metal that can be found in seawater from the N. Pacific, and briefly describe how its concentration changes with depth. (4 pts)