Chapter 5 – Protein Function

5.1 Reversible Binding of a Protein to a Ligand: Oxygen-Binding Proteins

The following sub-sections are important:

* The Introduction
* Oxygen Can Bind to a Heme Prosthetic Group
* Globins Are a Family of Oxygen-Binding Proteins
* Protein-Ligand Interactions Can be Described Quantitatively
* Protein Structure Affects How Ligands Bind
* Hemoglobin Transports Oxygen in Blood
* Hemoglobin Subunits are Structurally Similar to Myoglobin
* Hemoglobin Undergoes a Structural Change on Binding Oxygen
* Hemoglobin Binds Oxygen Cooperatively
* Cooperative Ligand Binding Can be Describes Quantitatively
* Two Models Suggest Mechanisms for Cooperative Binding
* Hemoglobin Also Transports H+ and CO2
* Sickle Cell Anemia is a Molecular Disease of Hemoglobin

5.2 Complementary Interactions between Proteins and Ligands: The Immune System and Immunoglobins

The following sub-sections are important:

* The Introduction
* The Immune Response Includes a Specialized Array of Cells and Proteins
* Antibodies Have Two Identical Antigen-Binding Sites
* Antibodies Bind Tightly and Specifically to Antigen
* The Antibody-Antigen Interaction is the Basis for a Variety of Important Analytical Procedures