

SELF-TEST

Do You Know the Terms?

ACROSS

4. _____ occurs when the binding of one ligand increases or decreases the binding of additional ligands.
7. The _____ immune system protects against bacterial infections.
9. This protein can exist in a globular or filamentous form; hydrolysis of ATP is necessary to convert one to the other.
10. Composed of many sarcomeres, many of these make up a muscle fiber.
13. The covalent binding of CO₂ to the amino termini of hemoglobin subunits favors the _____ form.
14. This protein has a hyperbolic O₂ binding curve and no quaternary structure; it serves as an O₂ "reservoir" in muscle cells.
15. The metabolic intermediate 2,3- _____ binds to hemoglobin molecules with a stoichiometry of 1:1 and promotes the release of O₂.
16. Red blood cell.
19. A prosthetic group containing iron.
21. Immunoglobulin.
22. Types of white blood cells; T and B cells.
23. A helper T cell can signal nearby lymphocytes by secretion of a signal protein called a(n) _____.

DOWN

1. The production of lactic acid in muscle tissue contributes to the _____ effect, which explains the link between lactate production and an increased release of O₂ from hemoglobin.
2. The iron in this prosthetic group can bind either CO or O₂ at its sixth coordination position.
3. A molecule reversibly bound by a protein.
5. Antibodies are produced by the immune system as part of a defense against invasion by a foreign particle known as a(n) _____.
6. Red blood cells transport CO₂ produced by respiring tissues in two forms: as bicarbonate ions and as _____.
7. Oxygen transport protein that binds O₂ with a stoichiometry of 4 O₂:1 molecule transport protein.
8. Individual molecules of _____ aggregate to form thick filaments.
11. All vertebrates have an immune system capable of distinguishing _____ from invader.
12. Cleavage of an IgG with the protease papain separates the basal fragment from the "branches," called _____.
17. Small molecules covalently attached to large proteins in the laboratory in order to elicit an immune response.
18. A particular molecular structure within an antigen that binds an individual antibody.
19. Heme groups are covalently bound to globin through the _____ histidine residue.
20. Allosteric proteins such as hemoglobin and IgG exhibit changes in their 3-D structure, a process known as _____ fit.

