

Bio121
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Review Questions
Lecture 10

1. Protein _____ determines structure, and structure determines _____.
2. How are functional amino acids often distributed throughout a protein? How do they end up in close proximity?
3. What would happen if you changed the position of functional or reactive amino acids?
4. How amino acids are positioned determines _____.
5. What proteins bind to other molecules?
6. Protein binding interactions are always _____ (strong, weak, highly specific, or weakly specific).
7. What does a protein's physical interaction with other molecules tell us about that protein?
8. What happens when a protein binds another molecule? (ie., what changes?)
9. What are some common types of covalent modification that occurs on proteins?
10. What is phosphorylation? What is the difference between a kinase and a phosphatase?
11. What is glycosylation? Which amino acid becomes glycosylated? What enzyme initiates glycosylation in the ER?

12. What is lipid modification? What does lipid modification often allow a protein to do?
13. Can proteins be modified more than once? With different types of modifications? Support your answer with a specific example.
14. Explain what is meant by the following statement: “Each protein’s set of covalent modifications makes up an important combinatorial regulatory code”
15. What is proteolysis? Give two examples of proteins that require proteolysis in order to be functional.
16. What is allostery?
17. What is the difference between positive allosteric regulation and negative allosteric regulation?
18. How can binding partners be used to regulate protein activity?
19. Describe the allosteric regulation of hemoglobin.
20. Discuss the different ways muscle cells control actin and myosin (proteins required for muscle contraction)?
20. What is a scaffold? Why does manipulation of one protein within a scaffold complex affect the others?
21. What are two examples of scaffold complexes?

