TEST-PREP

Unit 3

(11/24)

- What is a post translational modification?

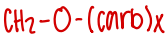
Any covalent modification of an amino acid after translation into a polypeptide

- Define glycosylation. Where does this occur?

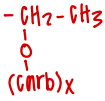
When a sugar is added to a protein and increases the specificity of the protein. This occurs in the Golgi apparatus

- What amino acids can be glycosylated—added where? Draw them!

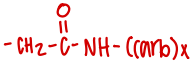
1) Serine – OH group



2) Threonine -OH group



3) Asparagine -NH_2 group



- What is a glycosylated atom at the -OH group referred to as? And -NH_2?

O-linked and N-linked

- What are glycoproteins?

Proteins with sugar are attached via covalent bond. (proteins that have been glycosylated)

- Define phosphorylation

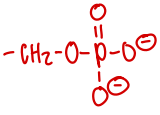
  Addition of a phosphate group to a protein—negative charges change confirmation

- What are the possible sources of phosphates that were discussed in class?

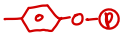
  ATP, GTP, and inorganic phosphate

- Which amino acids be phosphorylated?

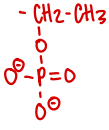
  1) Serine



  2) Tyrosine



  3) Threonine



- What enzymes add phosphates to a protein?

  Kinases

- Define prosthetic groups

  Groups added to a protein in order to activate it

- Do prosthetic groups have to be organic?

  No, they can also be inorganic

- Define apoprotein

  Inactive form of a protein that must bind to its prosthetic group to become active (occurs after translation)

- Define holoprotein

  Active form of an apoprotein, now has a prosthetic group bound to it

- Differentiate between cofactors and coenzymes

  Cofactor: generally small, inorganic molecules

  Coenzymes: generally organic molecular groups or organic molecules

- Define metalloprotein

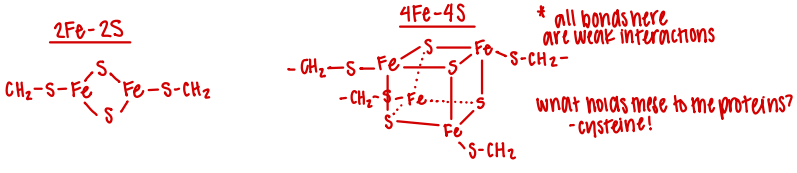
  Protein with a metallic ion

- What are non-heme iron proteins?

  Any protein that doesn't contain a heme group but still contains iron (Fe)

- Draw a version of iron-sulfide clusters. What kind of reactions are these clusters involved in?

  Common in redox reactions



- Define Hemoprotein

  A protein containing at least one heme group