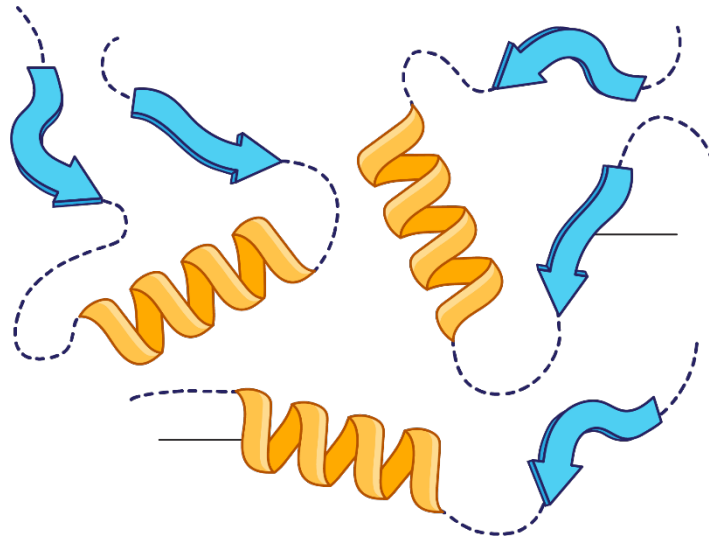
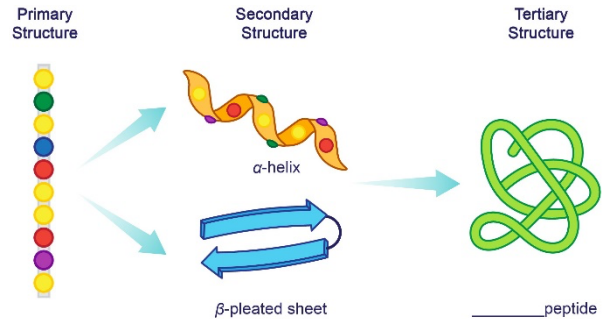


CONCEPT: TERTIARY PROTEIN STRUCTURE

- The tertiary structure of a protein is its overall 3D _____.
 - Results from the _____ and _____ of a peptide chain.
 - Stabilized by interactions between _____ groups.
 - Involves both _____ and _____ R groups.



- Folding of a peptide into tertiary structure _____ _____ change its primary and secondary structures.

EXAMPLE: Which of the following statements about primary, secondary, and tertiary protein structures is incorrect?

- a) The tertiary structure of a protein is stabilized by interactions between R groups of different amino acids.
- b) The folding of a peptide into the tertiary structure destroys its secondary structure.
- c) Due to the folding of the peptide chain, distant R groups come close and interact with each other.
- d) A folded peptide/protein can have α -helices and β -pleated sheets at the same time.

CONCEPT: TERTIARY PROTEIN STRUCTURE

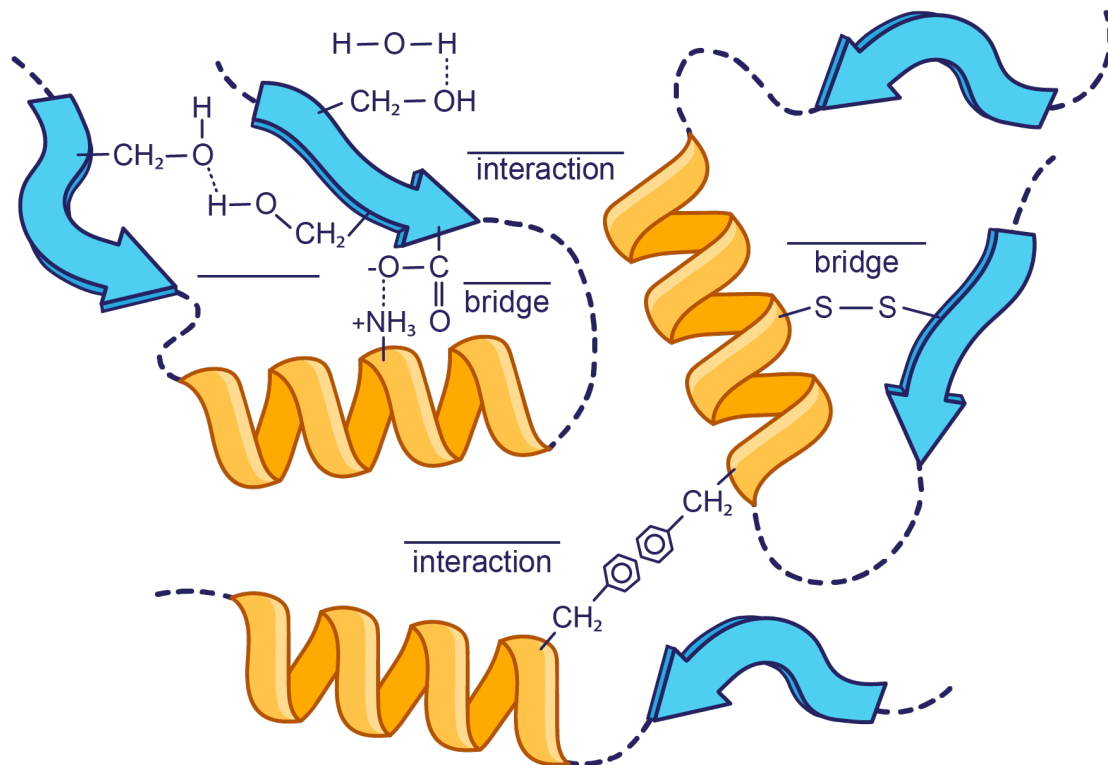
Interactions within the Tertiary Structure

- The tertiary structure mostly consists of non-covalent interactions.

- 1) _____ interaction
- 2) _____ interaction
- 3) _____ bonding
- 4) Salt bridge (_____ bond)

- A covalent bond can help to hold the _____ peptide in place.

- 5) Disulfide bridge: forms when _____ groups from two cysteine residues react to form a _____ bond.



EXAMPLE: Which one of the following interactions is the most likely to be found at the surface of a folded peptide?

- a) Salt bridge
- b) Hydrogen bonding
- c) Hydrophobic interaction
- d) Hydrophilic interaction

CONCEPT: TERTIARY PROTEIN STRUCTURE

PRACTICE: Which of the following amino acid pairs are the most likely to form hydrogen bonds?

- a) Cysteine – cysteine
- b) Lysine – glutamate
- c) Serine – threonine
- d) Leucine – valine

PRACTICE: What type of R group interaction is the most likely between the alanine and isoleucine residues?

- a) Hydrogen bonding
- b) Hydrophobic interaction
- c) Disulfide bridge
- d) Salt bridge

PRACTICE: Which of the following amino acid pairs can form a salt bridge?

- a) Cysteine – methionine
- b) Serine – glutamine
- c) Valine – isoleucine
- d) Lysine – glutamate