

Supplemental slides

The next few slides are a brief review of protein structure.

A quick review about protein structure - for some of you this has been covered in courses that you have recently completed

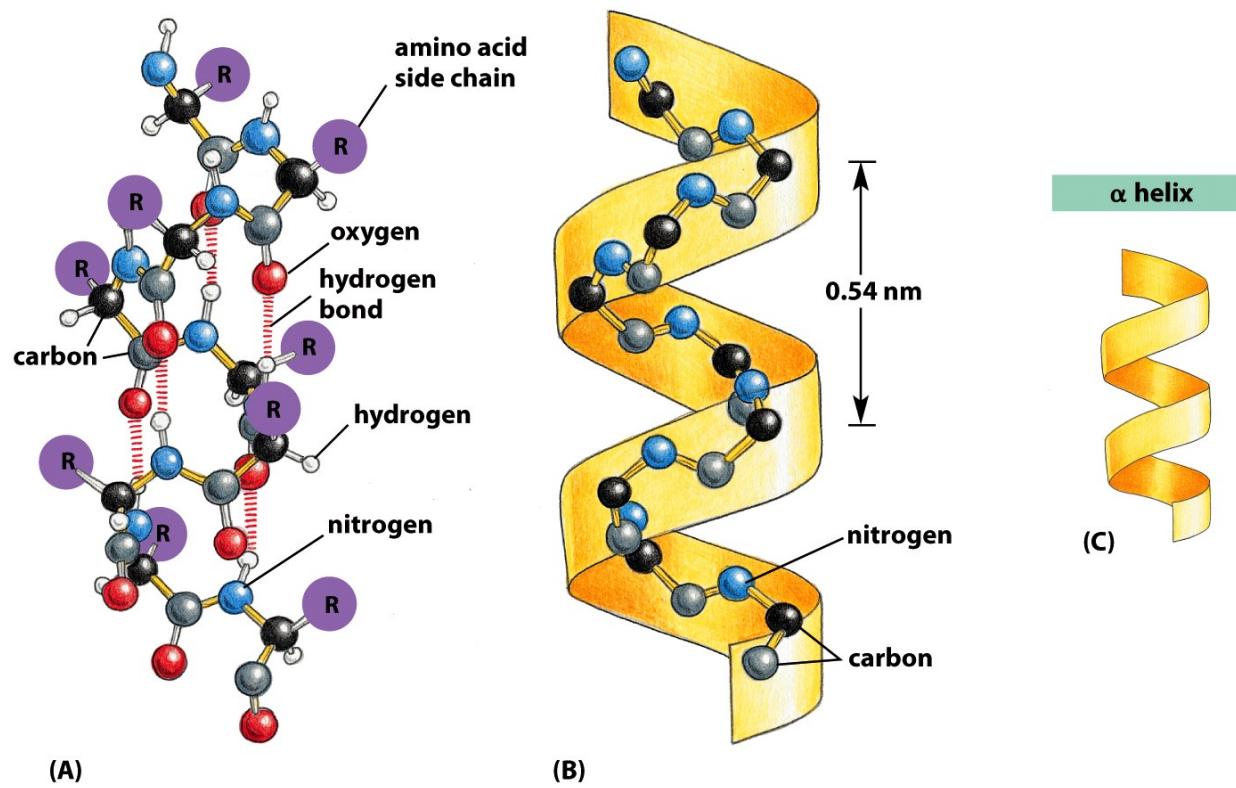


Figure 4-10a-c Essential Cell Biology 3/e (© Garland Science 2010)

α helix structure - the N–H of every peptide bond is hydrogen bonded to the C=O of a neighbouring peptide bond located 4 amino acids away

Figure 4.10 from Essential Cell Biology

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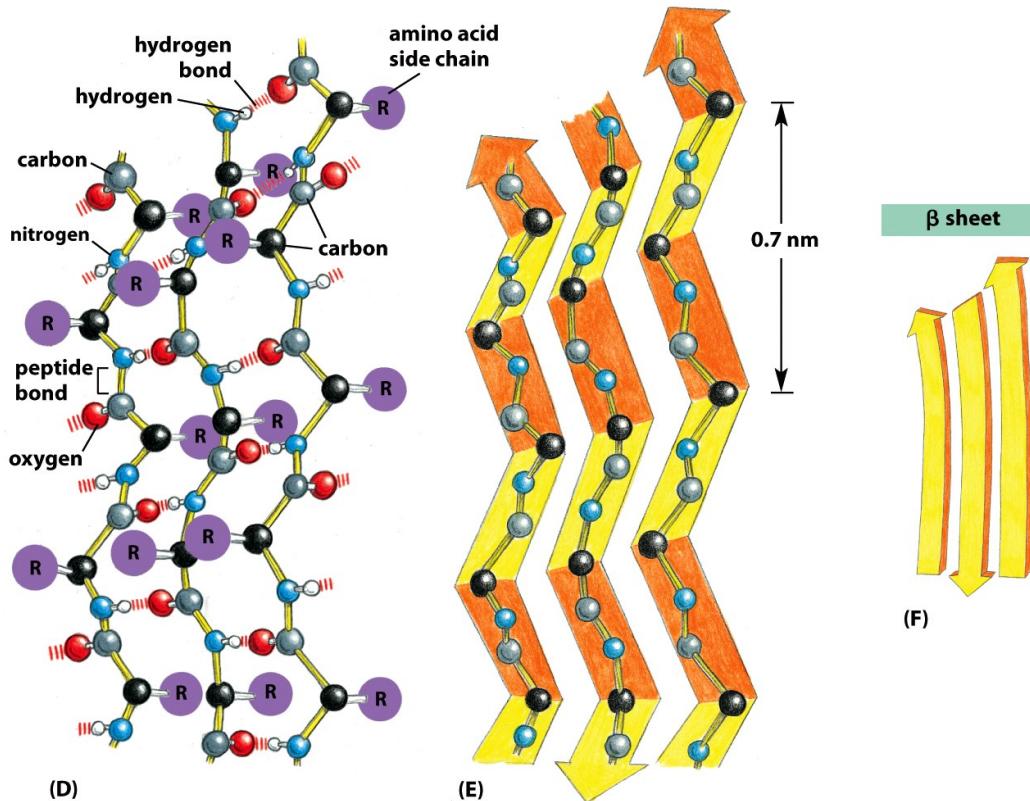


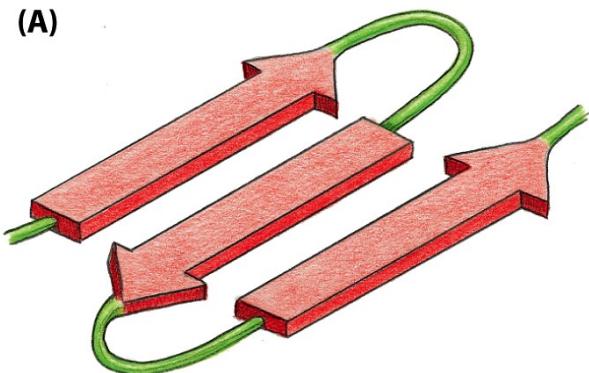
Figure 4-10d-f Essential Cell Biology 3/e (© Garland Science 2010)

In the β sheet, the individual polypeptide chains (strands) in the sheet are held together by H-bonding between peptide bonds in different strands. The amino acid side chains in each strand project alternately above and below the β sheet.

Figure 4.10 from Essential Cell Biology

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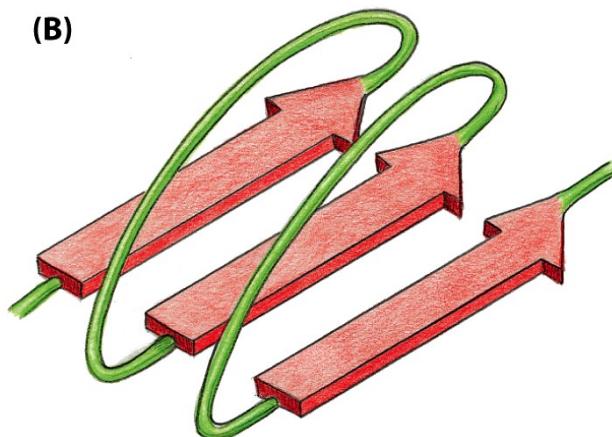
(A)



β sheets come in two varieties.

The top structure shows an anti-parallel β sheet.

(B)



The bottom structure shows a parallel β sheet.

By convention, the arrow is pointing toward the C-terminus of the polypeptide.

Figure 4-14 Essential Cell Biology 3/e (© Garland Science 2010)

Figure 4.10 from Essential Cell Biology

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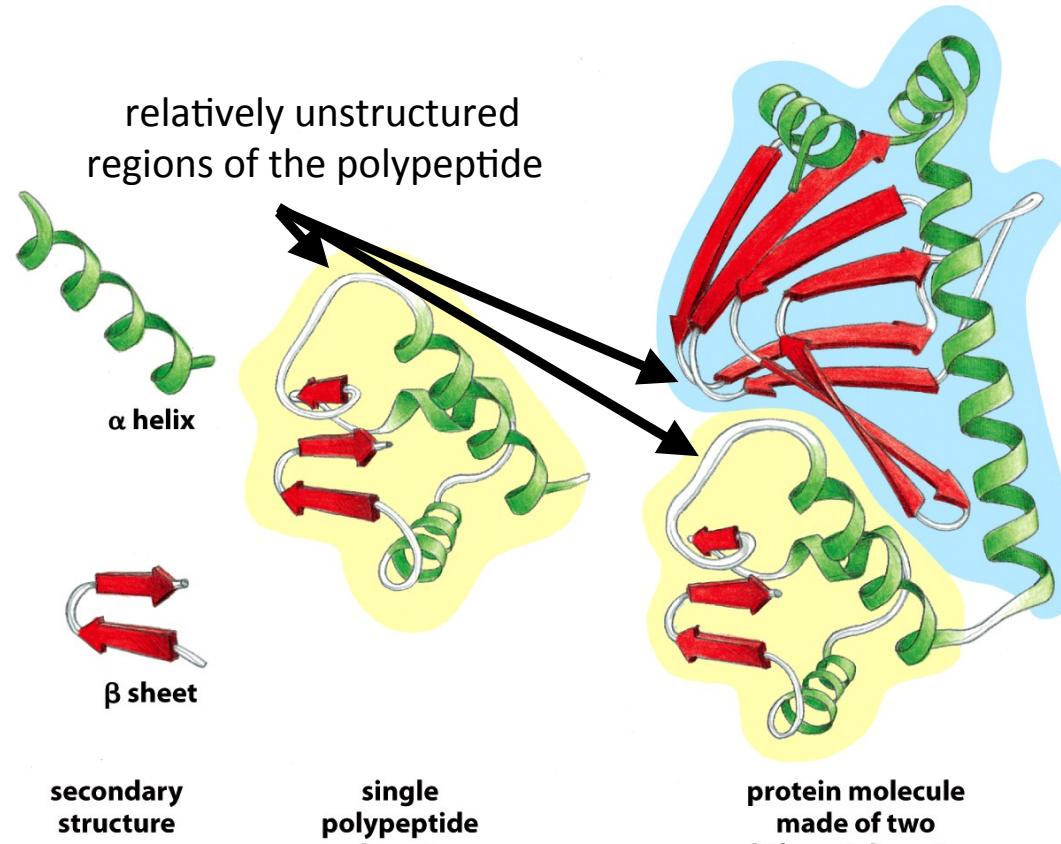
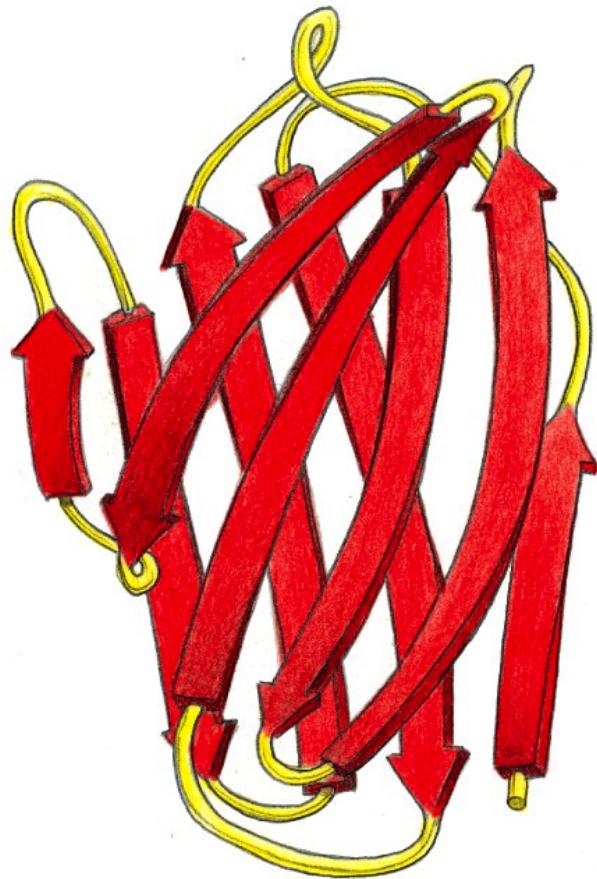


Figure 4-16 Essential Cell Biology 3/e (© Garland Science 2010)

α helices and β sheets pack together in stable, independently folding globular elements called domains. Proteins often have one or more domains linked by a region of the polypeptide chain that is relatively unstructured.

Figure 4.16 from Essential Cell Biology

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The Ig domain - a barrel-shaped structure (called a β barrel) of two anti-parallel β sheets folded over each other and held together by a disulfide bond.

Proteins often have one or more domains linked by a region of the polypeptide chain that is relatively unstructured.

Figure 4.17 from Essential Cell Biology