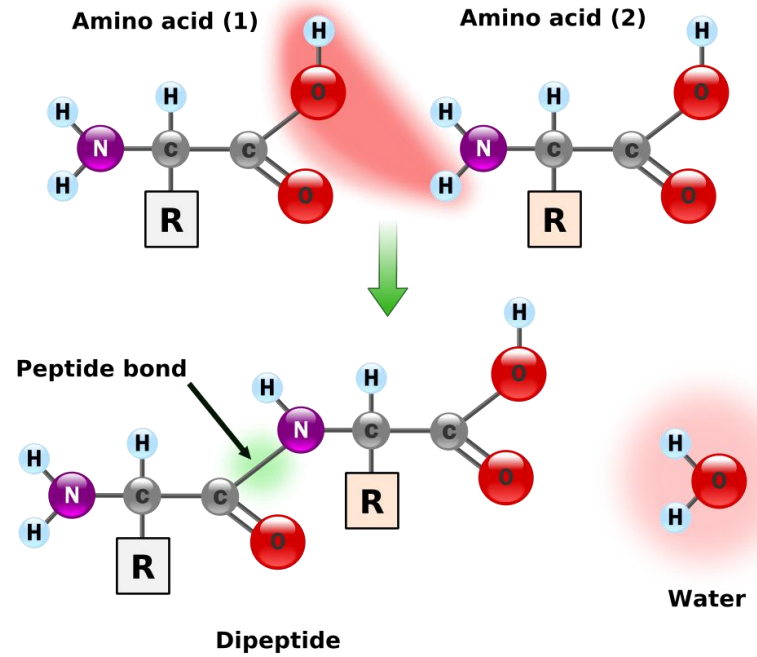
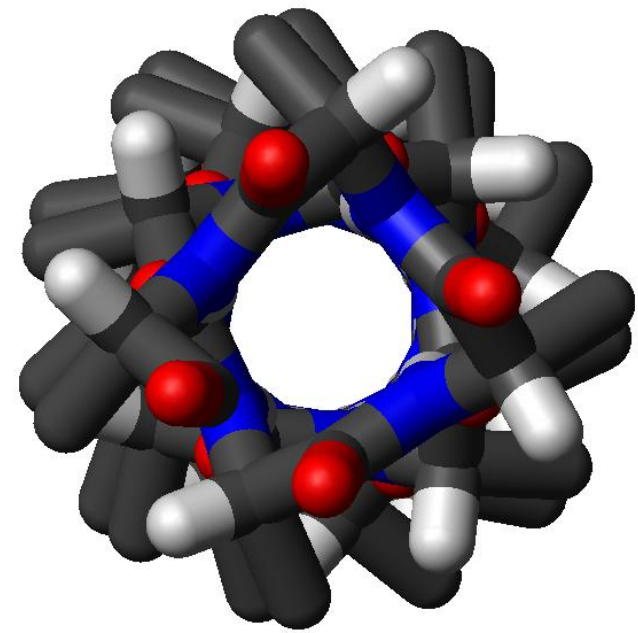
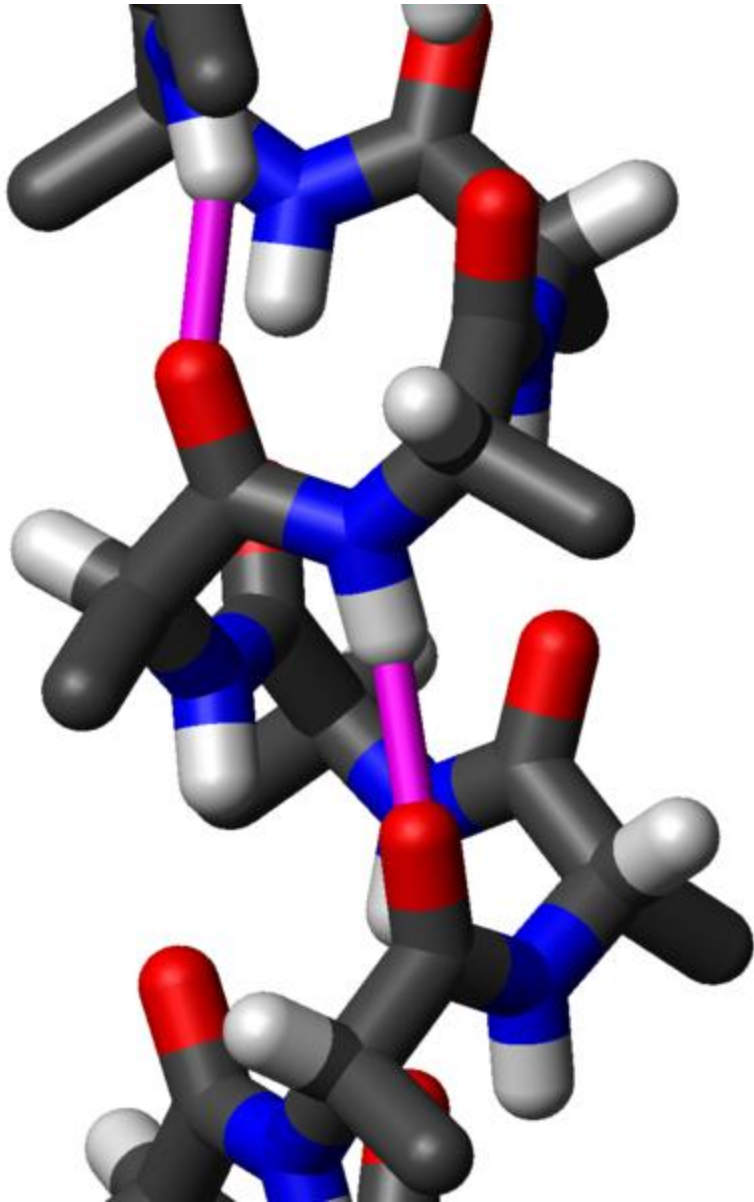
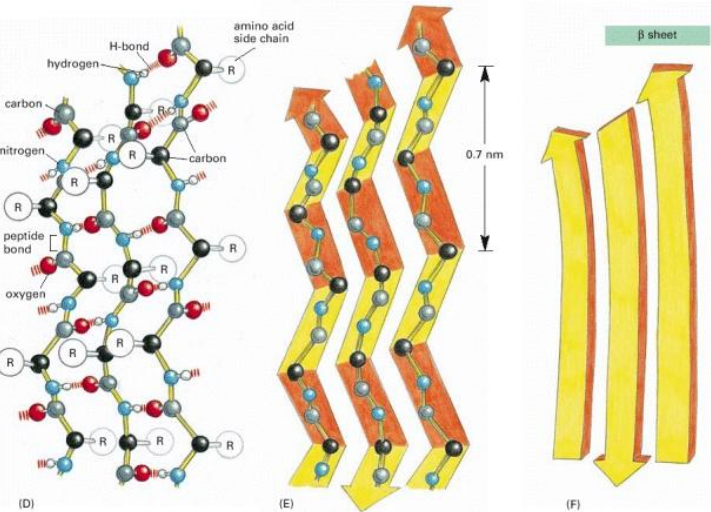
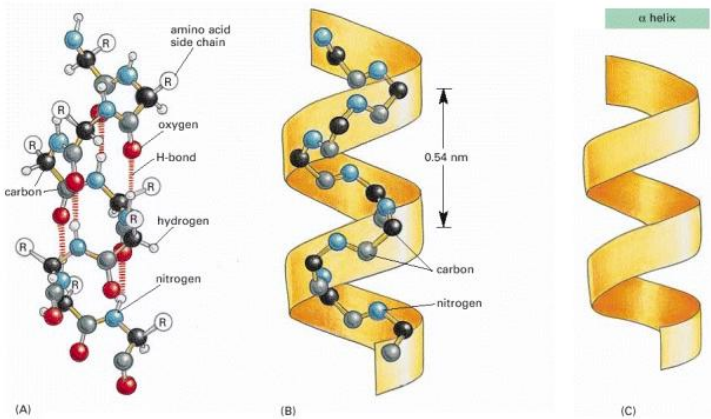
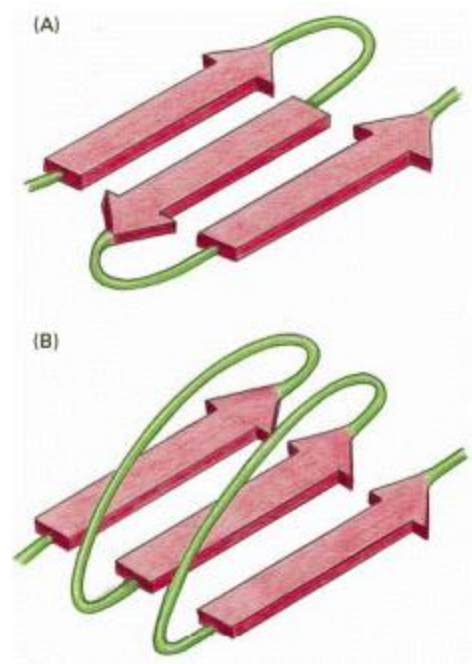


# Secondary Structure (Alpha-Helix)



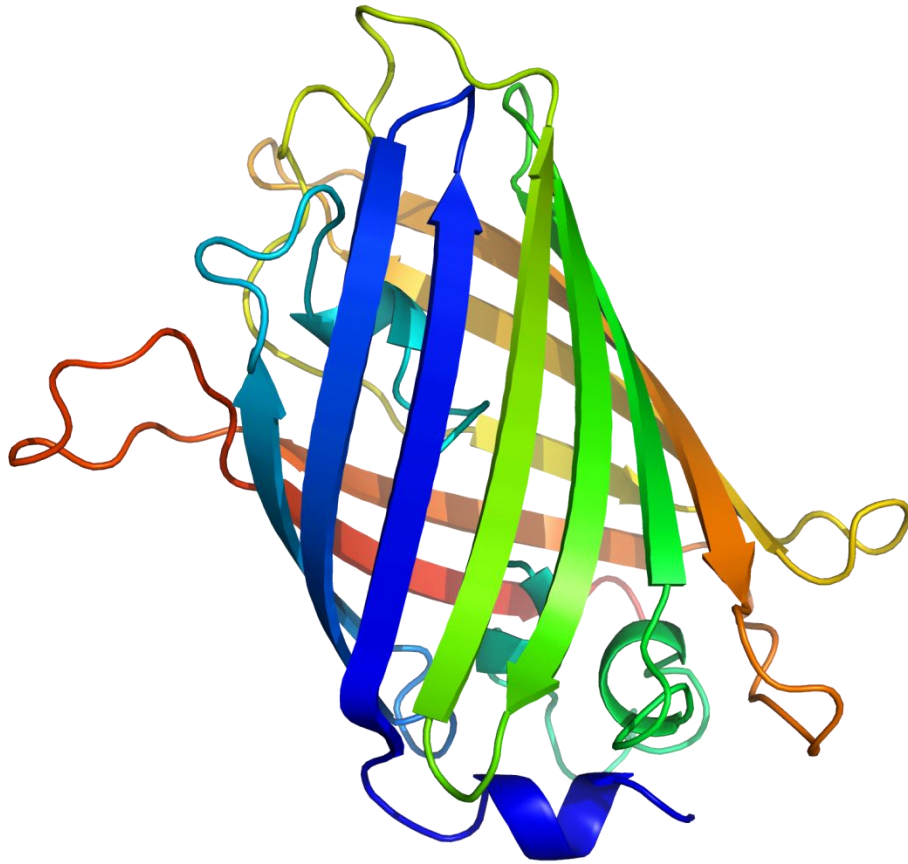


**Figure 3-10** Two types of  $\beta$  sheet structures  
 (A) An antiparallel  $\beta$  sheet (see [Figure 3-9D](#)). (B) A parallel  $\beta$  sheet. Both of these structures are common in proteins.



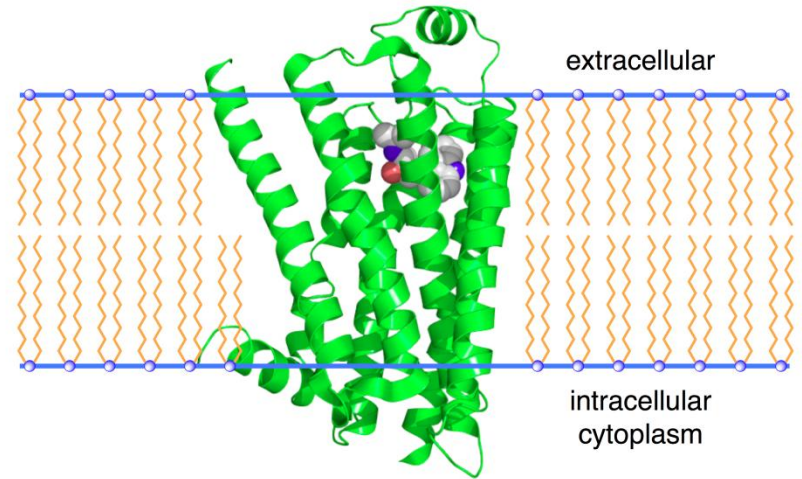
**Figure 3-9** The regular conformation of the polypeptide backbone observed in the  $\alpha$  helix and the  $\beta$  sheet  
 (A, B, and C) The  $\alpha$  helix. The N–H of every peptide bond is hydrogen-bonded to the C=O of a neighboring peptide bond located four peptide bonds away in the same chain. (D, E, and F) The  $\beta$  sheet. In this example, adjacent peptide chains run in opposite (antiparallel) directions. The individual polypeptide chains (strands) in a  $\beta$  sheet are held together by hydrogen-bonding between peptide bonds in different strands, and the amino acid side chains in each strand alternately project above and below the plane of the sheet. (A) and (D) show all the atoms in the polypeptide backbone, but the amino acid side chains are truncated and denoted by R. In contrast, (B) and (E) show the backbone atoms only, while (C) and (F) display the shorthand symbols that are used to represent the  $\alpha$  helix and the  $\beta$  sheet in ribbon drawings of proteins (see [Panel 3-2B](#)).

# Tertiary Structure



[http://en.wikipedia.org/wiki/File:GFP\\_structure.png](http://en.wikipedia.org/wiki/File:GFP_structure.png)

Crystallographic structure of the  $\beta_2$ -adrenergic receptor depicted as a green cartoon and the bound partial inverse agonist [carazolol](#) ligand as spheres (carbon atom = grey, oxygen = red, nitrogen = blue). The [phospholipid bilayer](#) is depicted as blue spheres (phosphate head groups) and yellow lines (lipid sidechains)



<http://en.wikipedia.org/wiki/File:2RH1.png>

# Quaternary Structure

