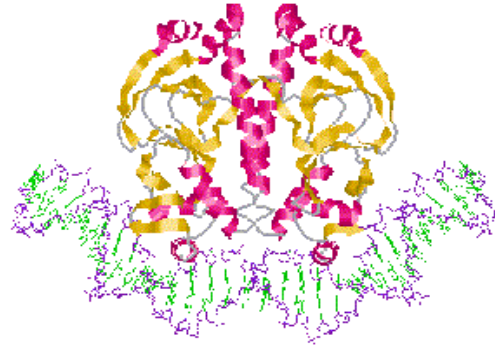


Diverse role of proteins



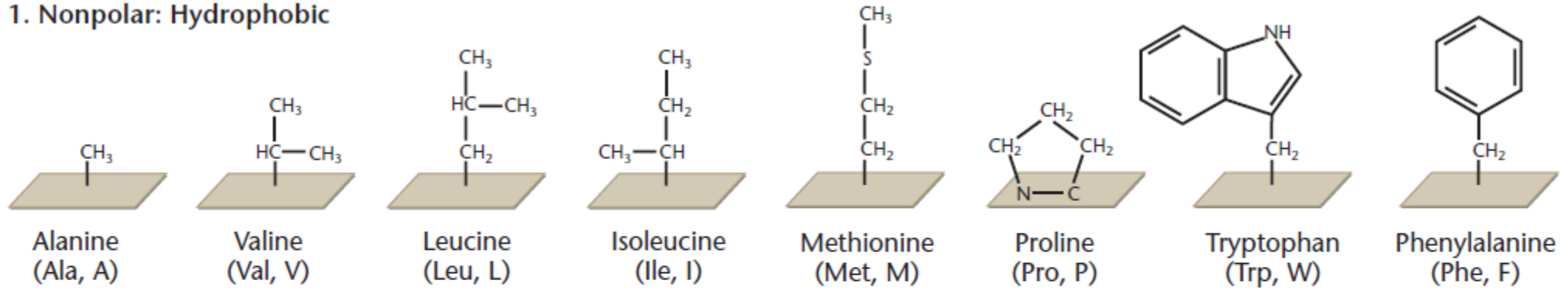
Prof. Dr. İsmail AKYOL
Prof. Dr. M. Ali YILDIZ
Prof. Dr. M. Muhip ÖZKAN
Ankara Üniversitesi



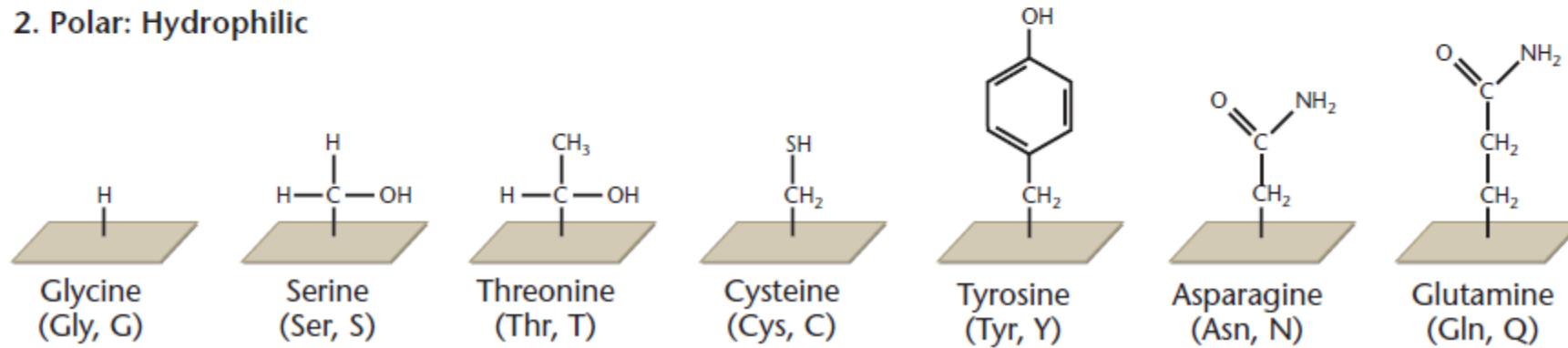
Sunu Programı

Chemical structures of amino acids

1. Nonpolar: Hydrophobic

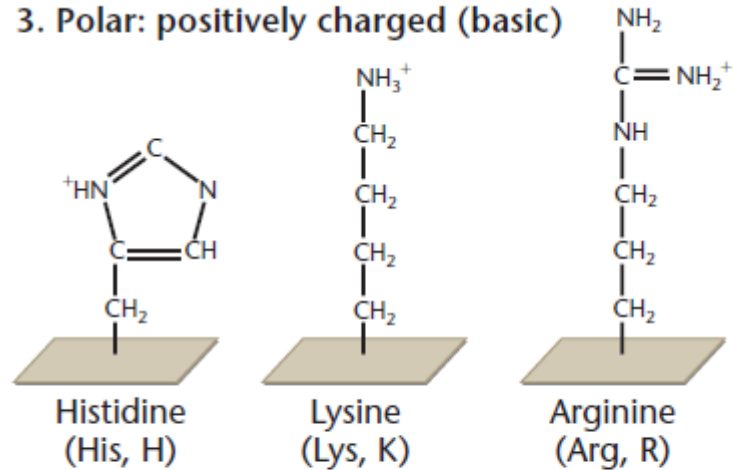


2. Polar: Hydrophilic



Chemical structures of amino acids

3. Polar: positively charged (basic)



4. Polar: negatively charged (acidic)

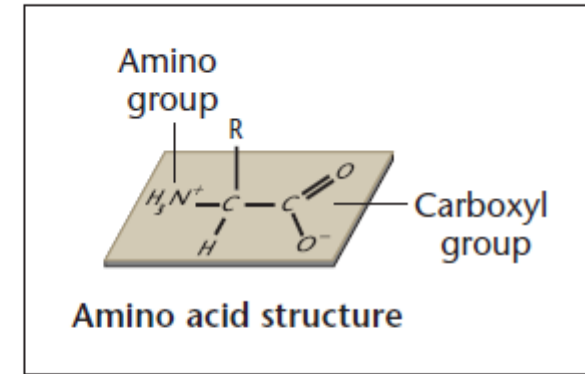
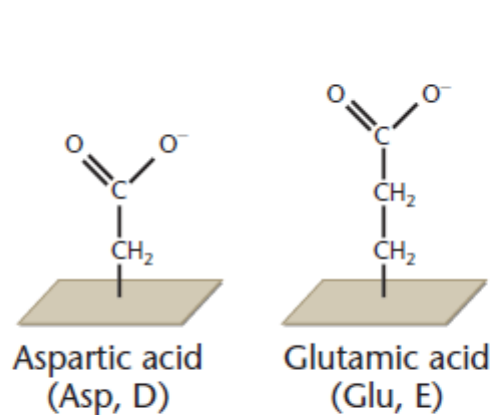


FIGURE 14.16 Chemical structures and designations of the 20 amino acids encoded by living organisms, divided into four major categories. Each amino acid has two abbreviations in universal use; for example, alanine is designated either Ala or A.

Peptide Bond

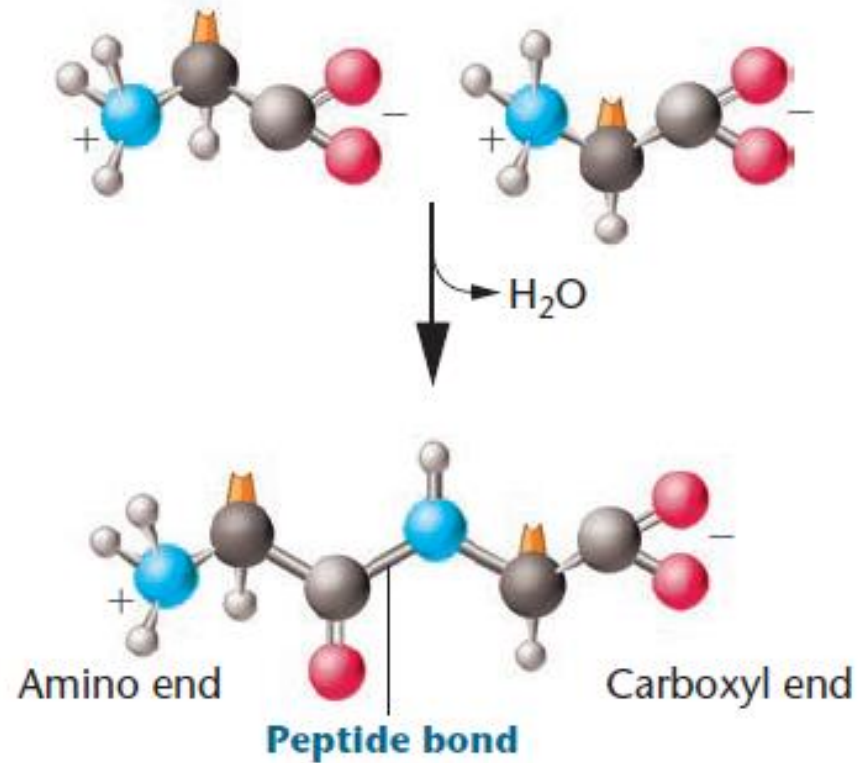


FIGURE 14.17 Peptide bond formation between two amino acids, resulting from a dehydration reaction.

α -hHelix and β -pleated sheet

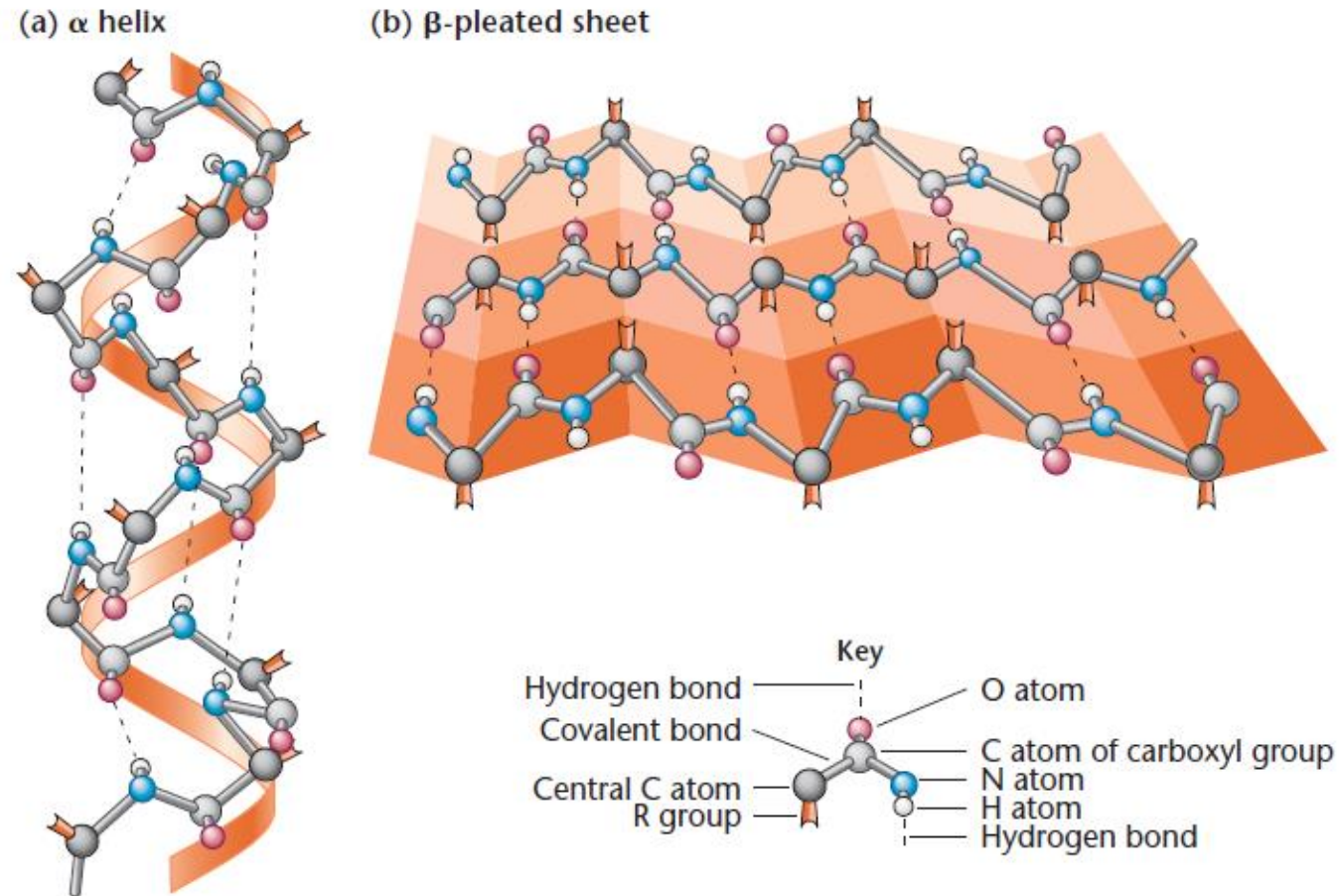


FIGURE 14.18 (a) The right-handed α helix, which represents one form of secondary structure of a polypeptide chain. (b) The β -pleated sheet, an alternative form of secondary structure of polypeptide chains. To maintain clarity, not all atoms are shown.

Tertiary and quaternary level

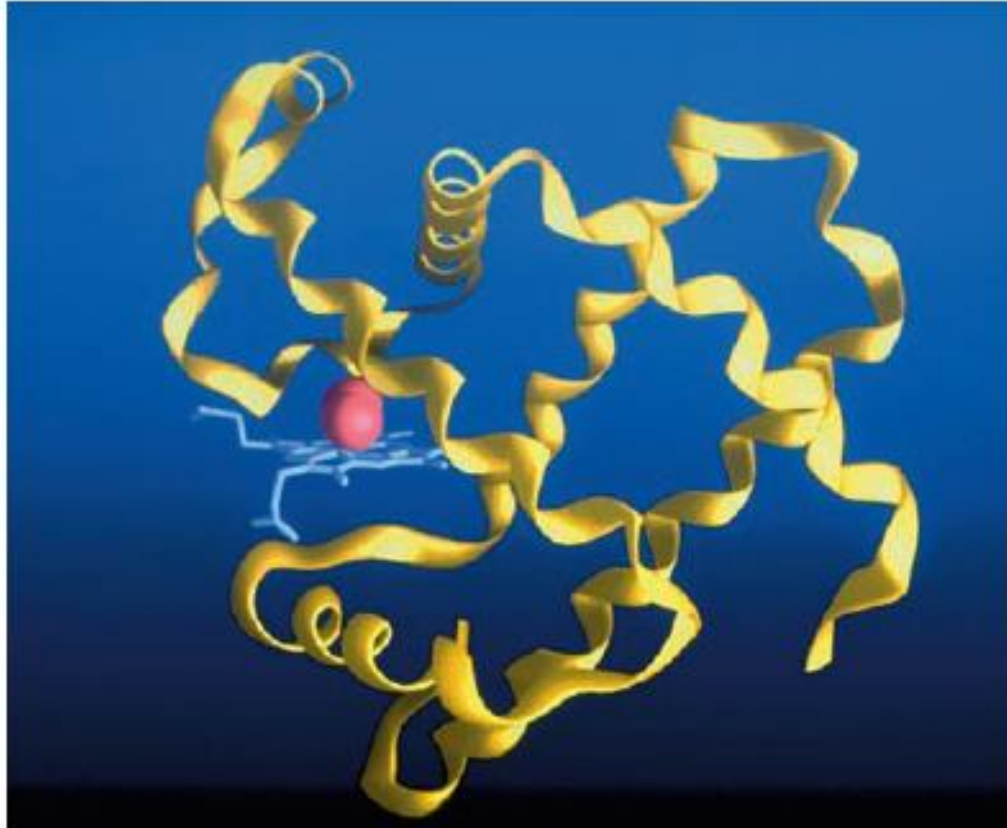


FIGURE 14.19 The tertiary level of protein structure for the respiratory pigment myoglobin. The bound oxygen atom is shown in red.

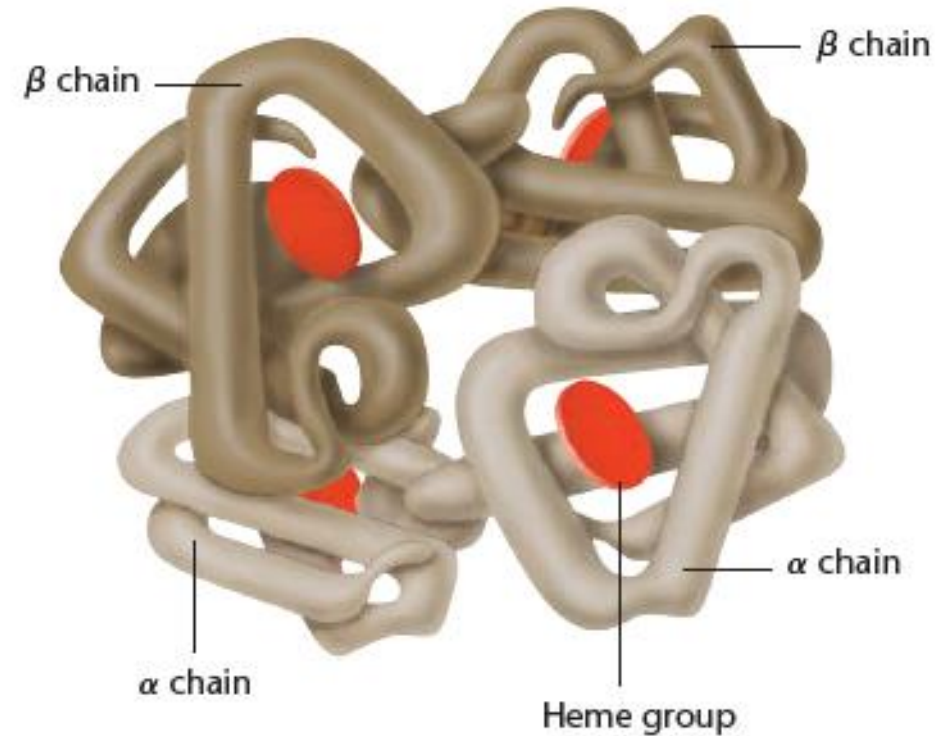


FIGURE 14.20 The quaternary level of protein structure as seen in hemoglobin. Four chains (two α and two β) interact with four heme groups to form the functional molecule.

Exon Shuffling

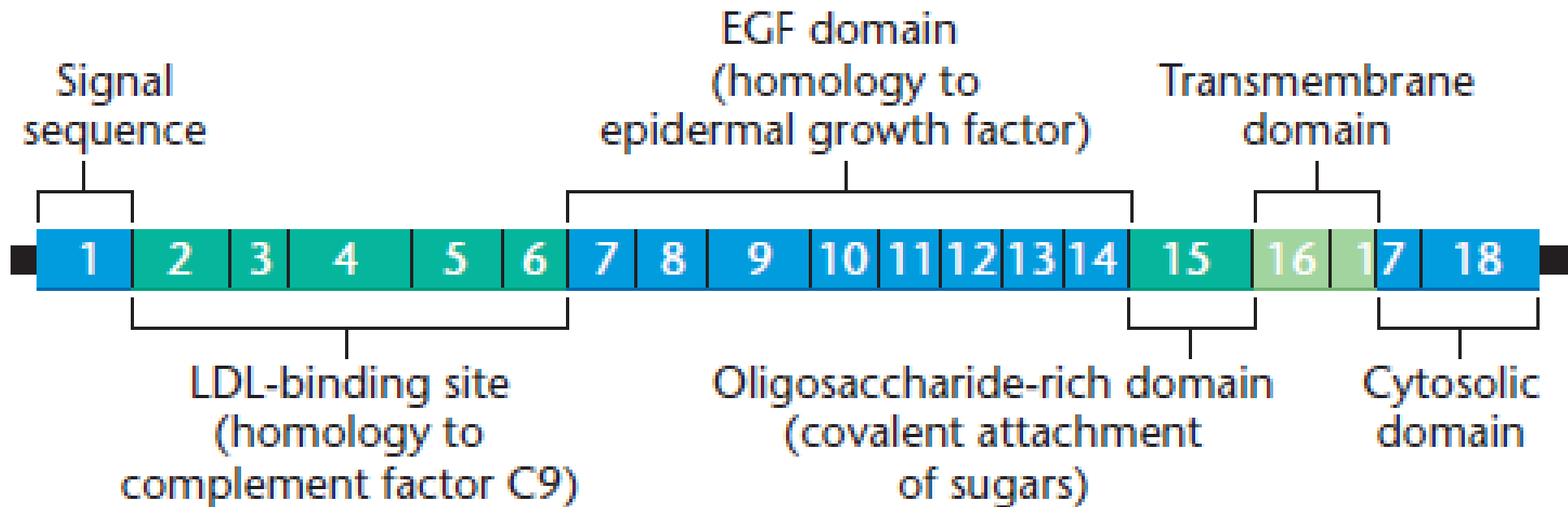


FIGURE 14.21 The 18 exons encoding the LDL receptor protein are organized into five functional domains and one signal sequence.