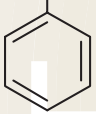

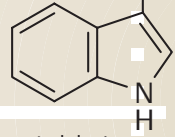
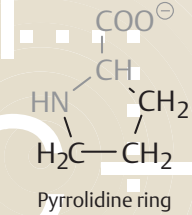
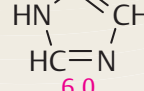

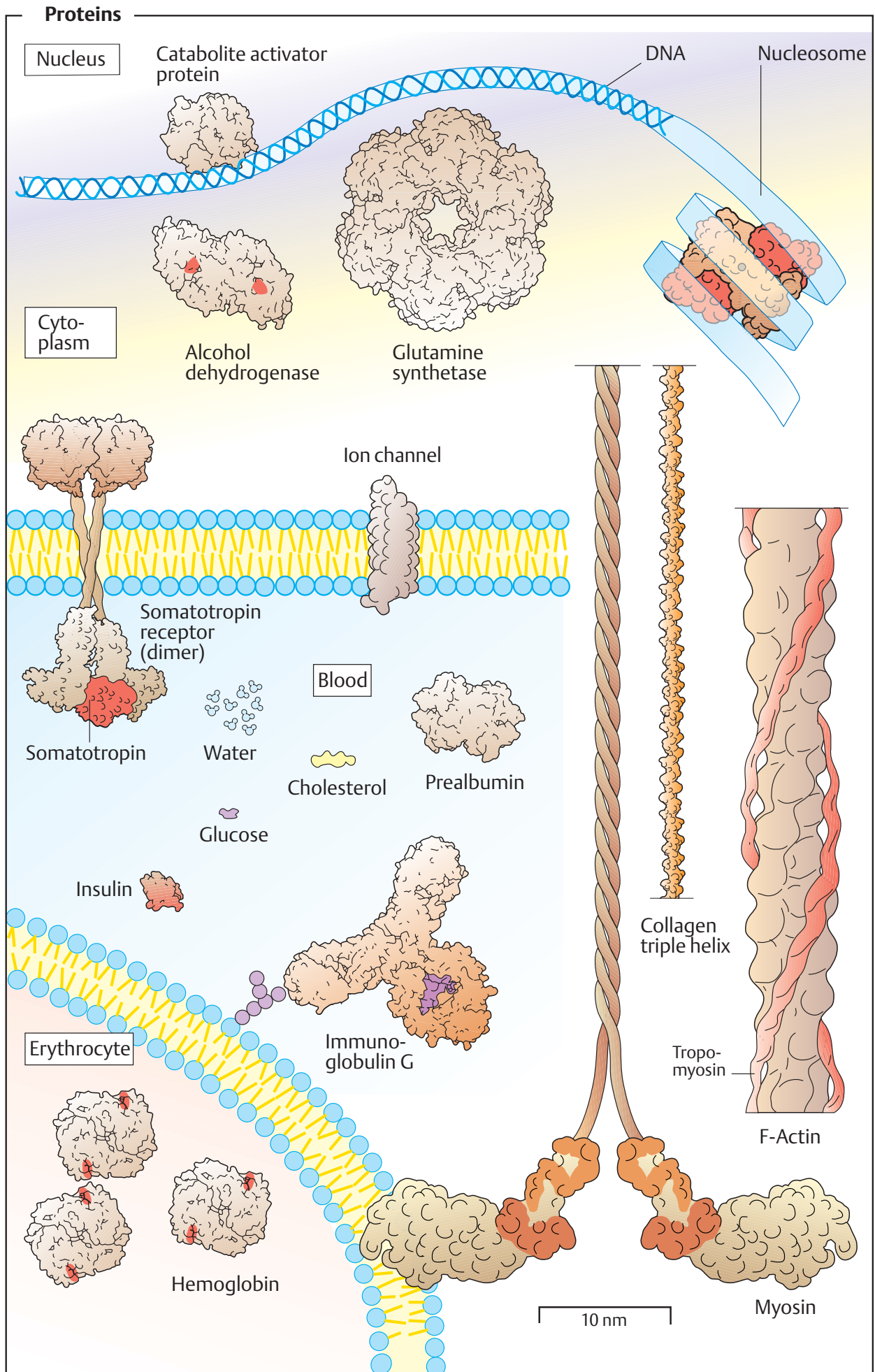
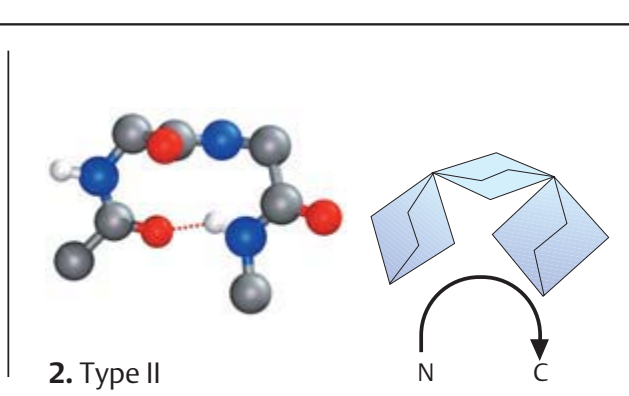
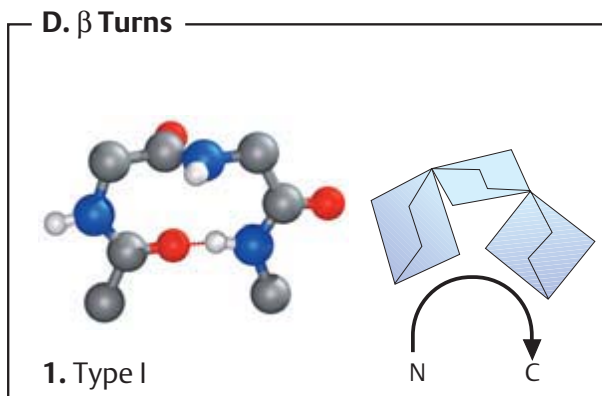
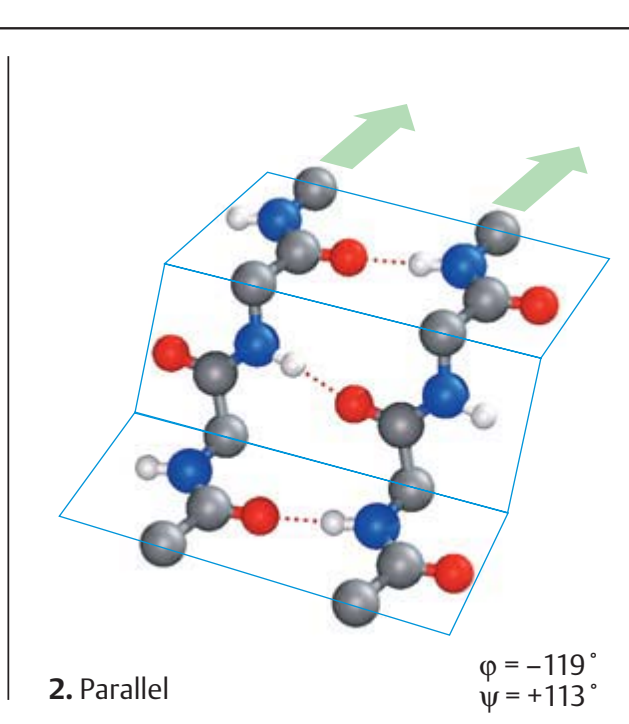
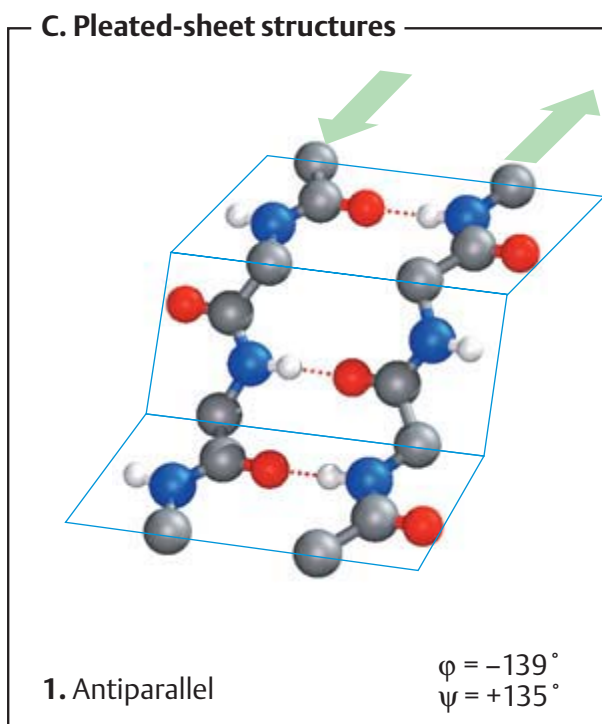
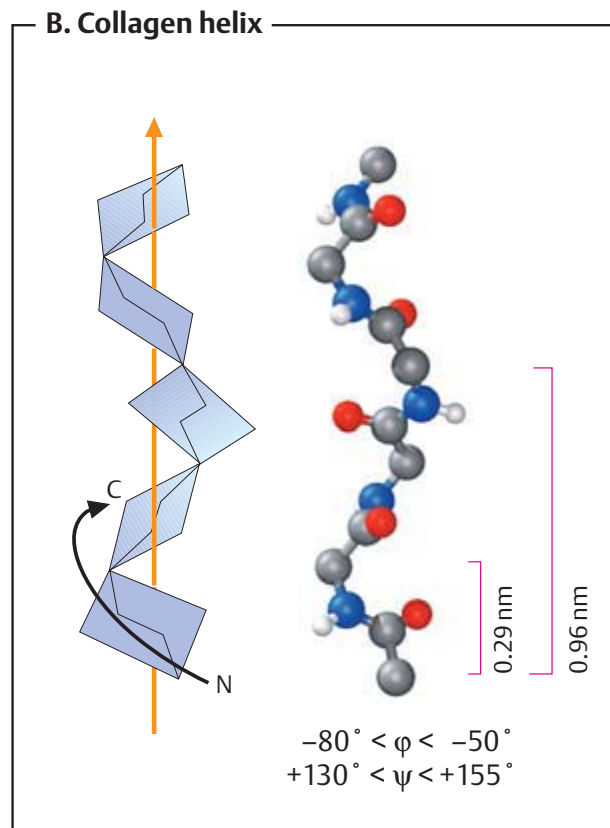
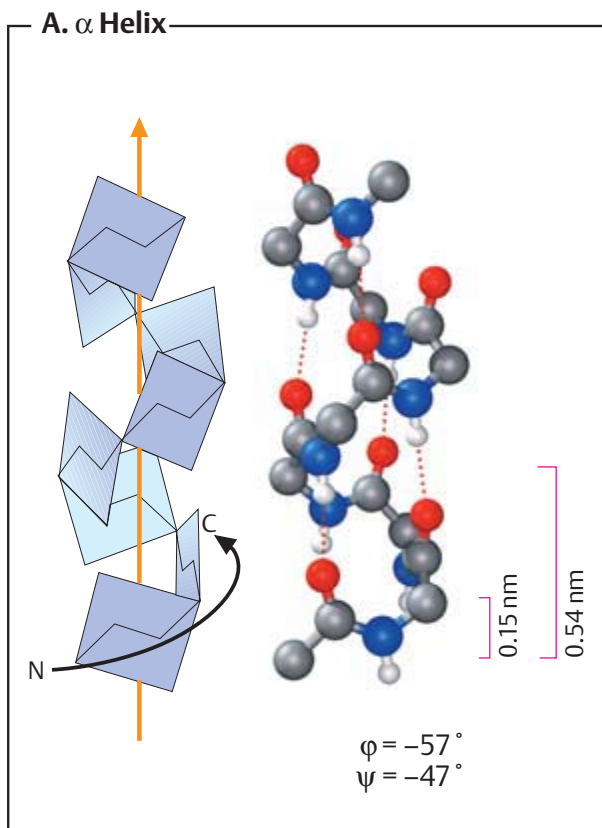
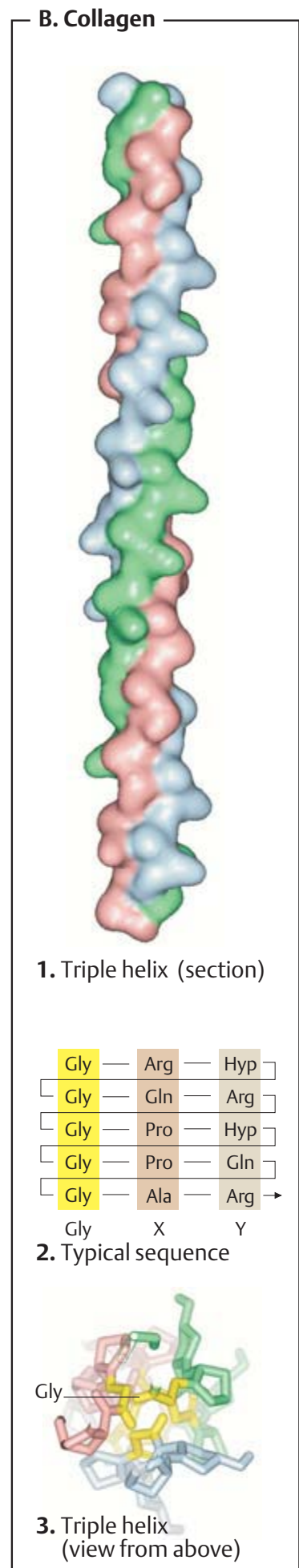
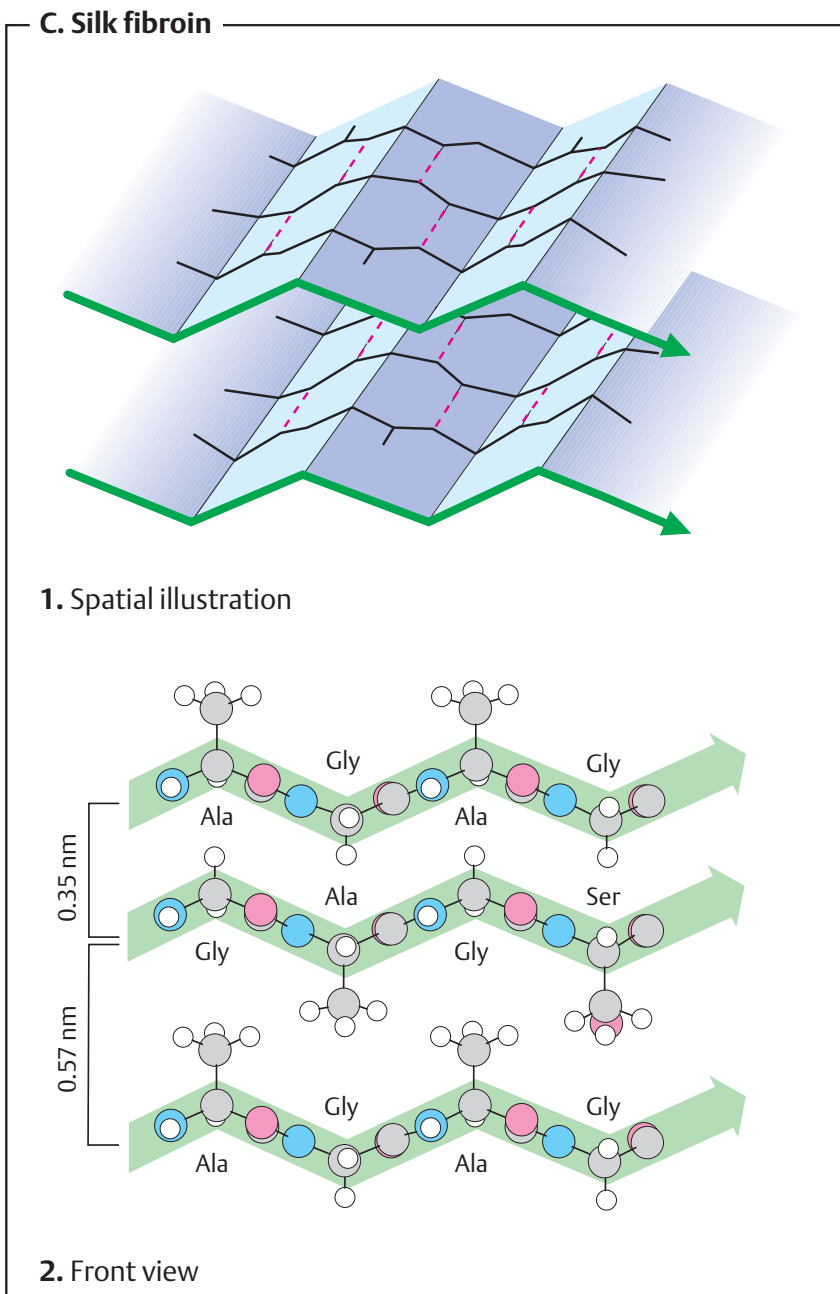
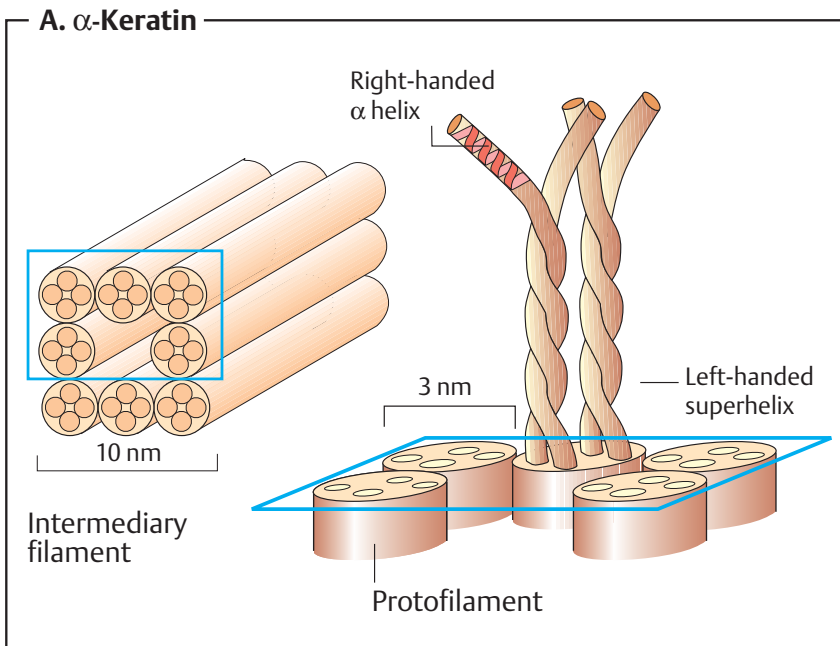


The proteino-genic amino acids

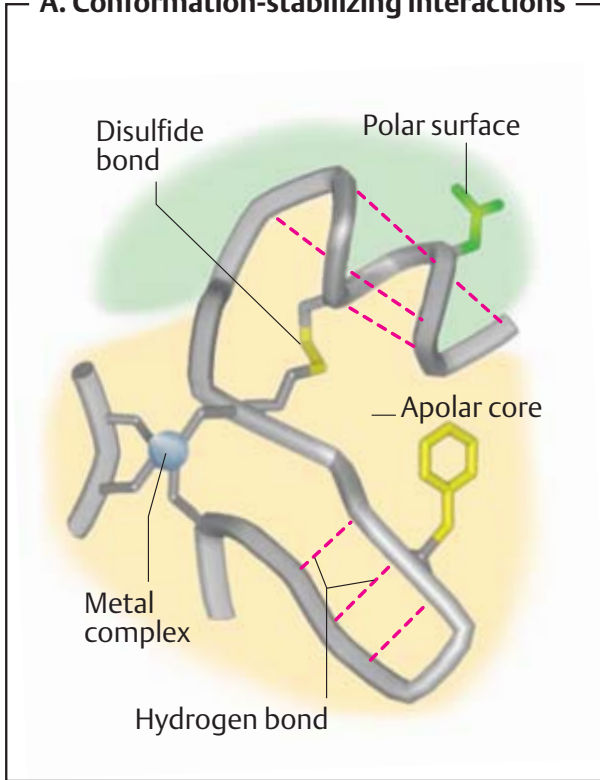
Aliphatic					Sulfur-containing	
Glycine (Gly, G)	Alanine (Ala, A)	Valine [☆] (Val, V)	Leucine [☆] (Leu, L)	Isoleucine [☆] (Ile, I)	Cysteine (Cys, C)	Methionine [☆] (Met, M)
H	CH ₃	H ₃ C-CH CH ₃	CH ₂ H ₃ C-CH CH ₃	H ₃ C- C -H CH ₂ CH ₃	CH ₂ SH 8.3 pK _a value	CH ₂ CH ₂ S CH ₃
-2.4	-1.9	-2.0	-2.3	-2.2	-1.2	-1.5
Aromatic			Cyclic	Neutral		
Phenylalanine [☆] (Phe, F)	Tyrosine (Tyr, Y)	Tryptophan [☆] (Trp, W)	Proline (Pro, P)	Serine (Ser, S)	Threonine [☆] (Thr, T)	
CH ₂ 	CH ₂  OH 10.1	CH ₂  Indole ring	 Pyrrolidine ring	CH ₂ OH	H ₃ C- C -H OH	
+0.8	+6.1	+5.9	+6.0	+5.1	+4.9	
☆ Essential amino acids					□ Chiral center	
Neutral		Acidic		Basic		
Asparagine (Asn, N)	Glutamine (Gln, Q)	Aspartic acid (Asp, D)	Glutamic acid (Glu, E)	Histidine (His, H)	Lysine [☆] (Lys, K)	Arginine (Arg, R)
CH ₂ CONH ₂	CH ₂ CH ₂ CONH ₂	CH ₂ COO ⁻ 4.0	CH ₂ CH ₂ COO ⁻ 4.3	CH ₂  Imidazole ring 6.0	CH ₂ CH ₂ CH ₂ CH ₂ NH ₃ ⁺ 10.8	CH ₂ CH ₂ CH ₂ NH  12.5
+9.7	+9.4	+11.0	+10.2	+10.3	+15.0	+20.0



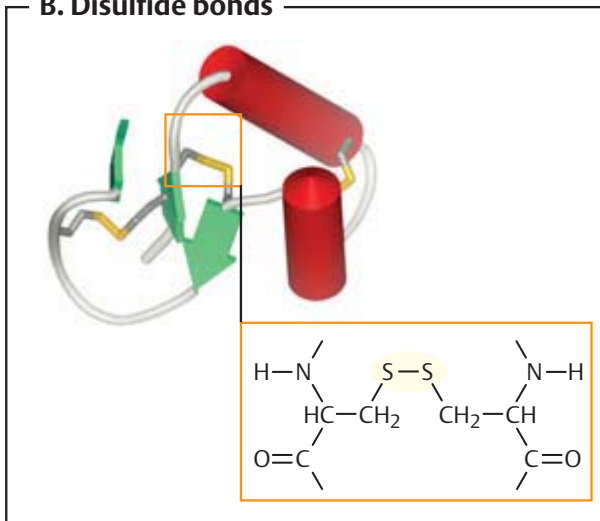




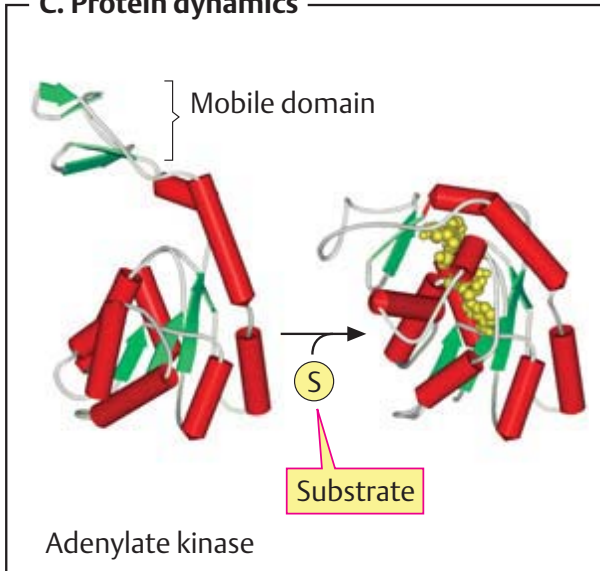
A. Conformation-stabilizing interactions



B. Disulfide bonds



C. Protein dynamics



D. Folding patterns

