

Essential Cell Biology Third Edition

Chapter 2 Chemical Components of Cells

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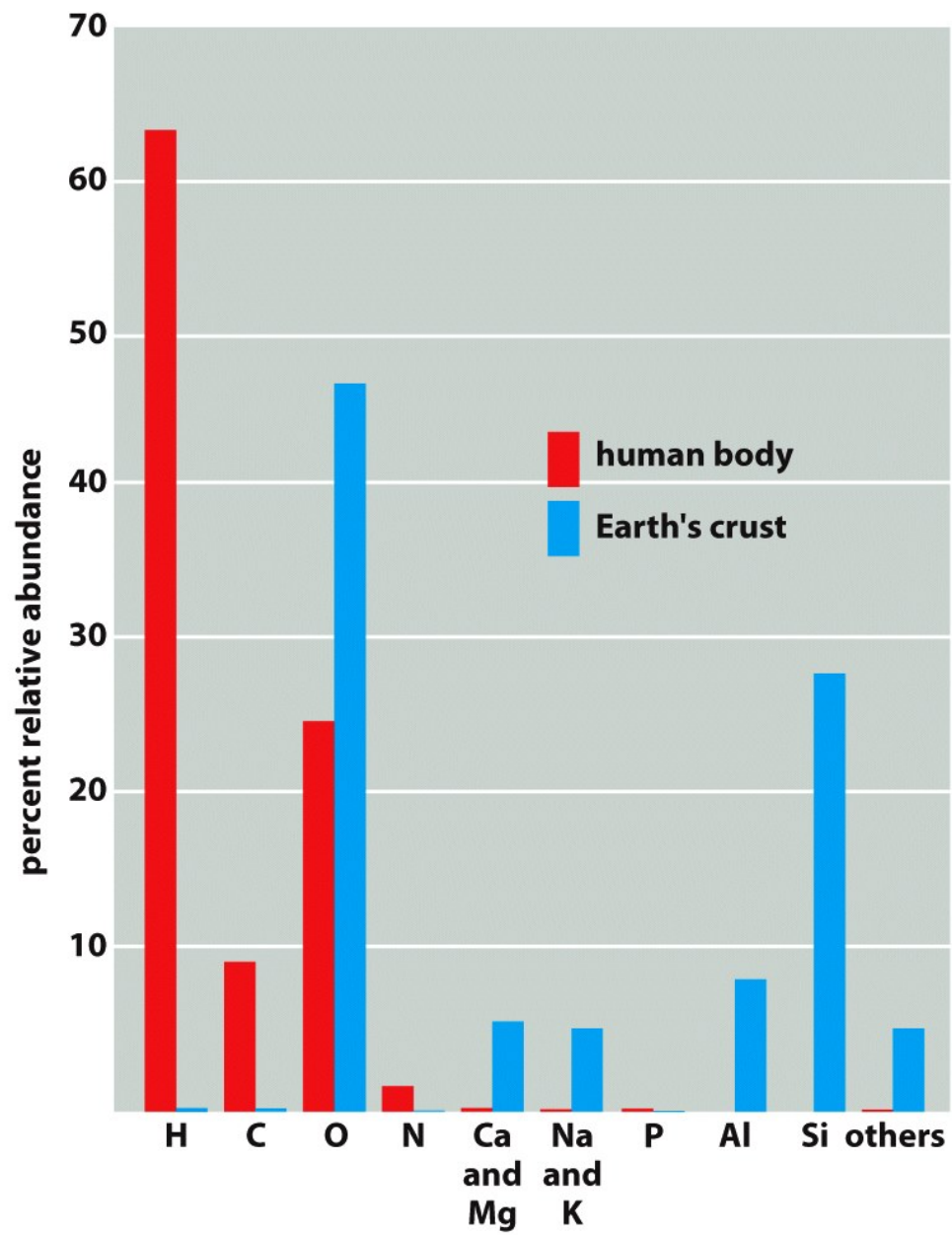


Figure 2-4 *Essential Cell Biology* (© Garland Science 2010)

TABLE 2-2 THE APPROXIMATE CHEMICAL COMPOSITION OF A BACTERIAL CELL

	PERCENTAGE OF TOTAL CELL WEIGHT	NUMBER OF TYPES OF EACH MOLECULE
Water	70	1
Inorganic ions	1	20
Sugars and precursors	1	250
Amino acids and precursors	0.4	100
Nucleotides and precursors	0.4	100
Fatty acids and precursors	1	50
Other small molecules	0.2	~300
Macromolecules (proteins, nucleic acids, polysaccharides, and phospholipids)	26	~3000

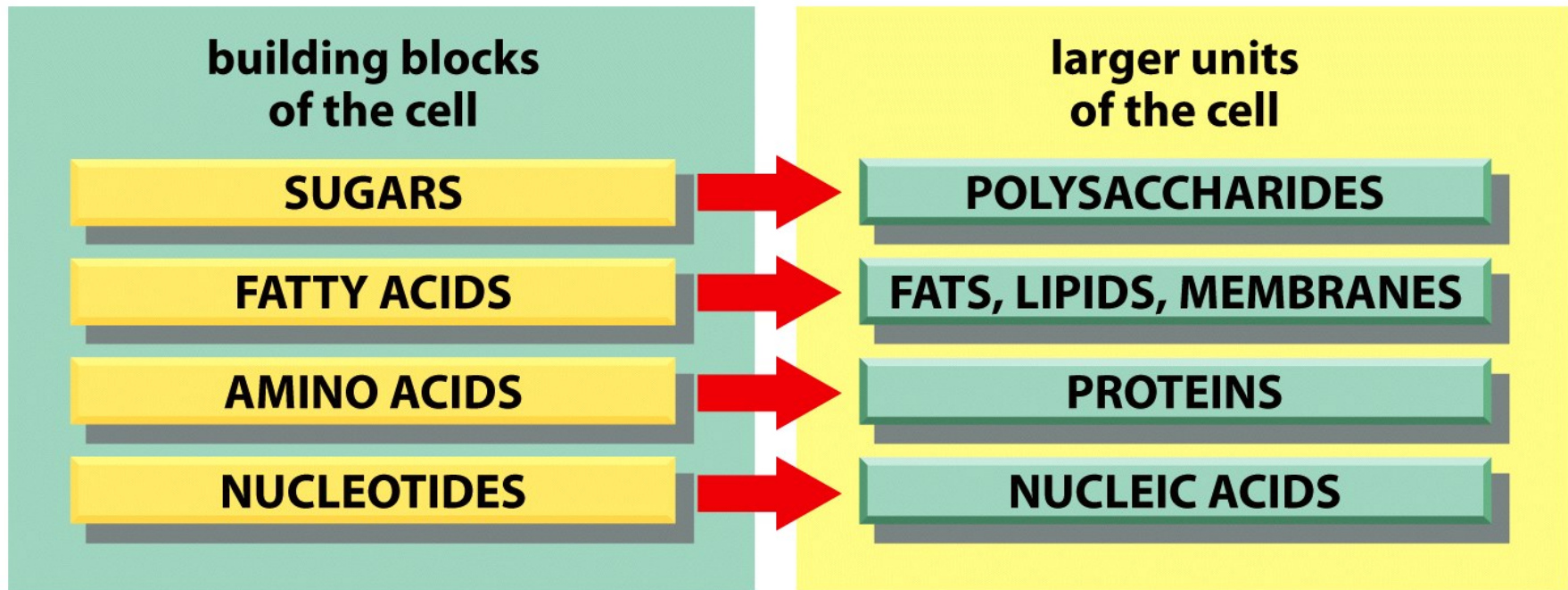


Figure 2-15 *Essential Cell Biology* (© Garland Science 2010)

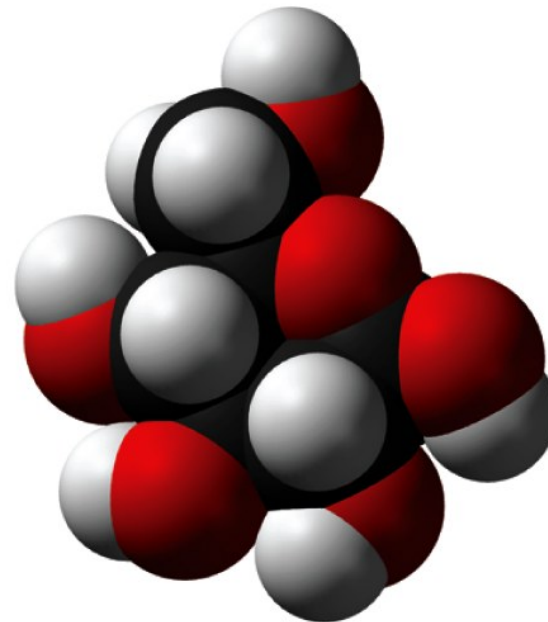
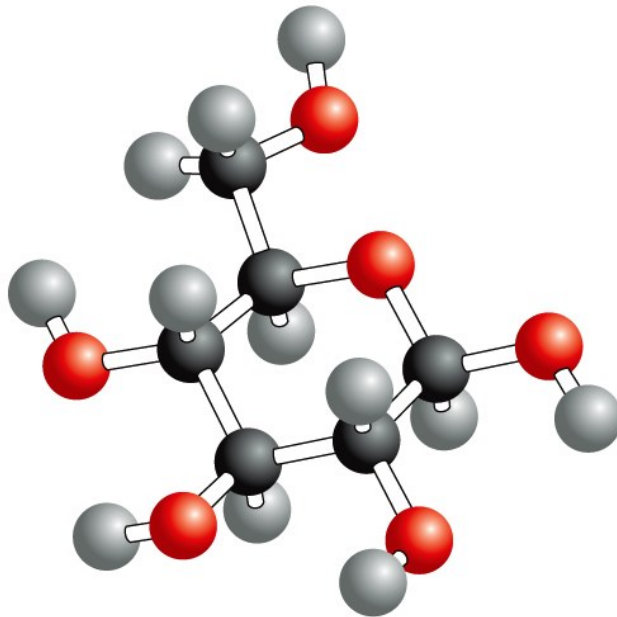
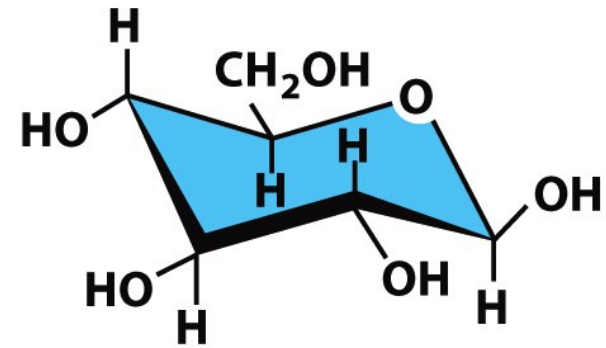
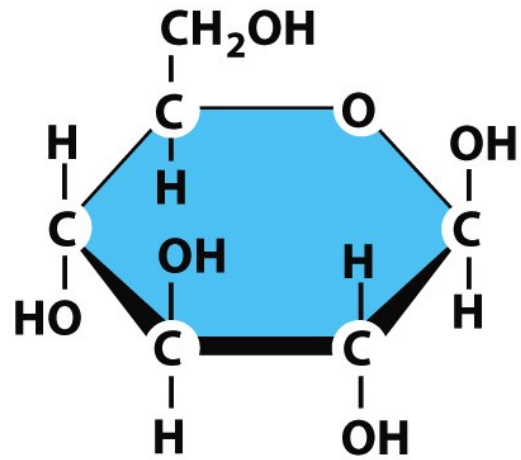


Figure 2-16 *Essential Cell Biology* (© Garland Science 2010)

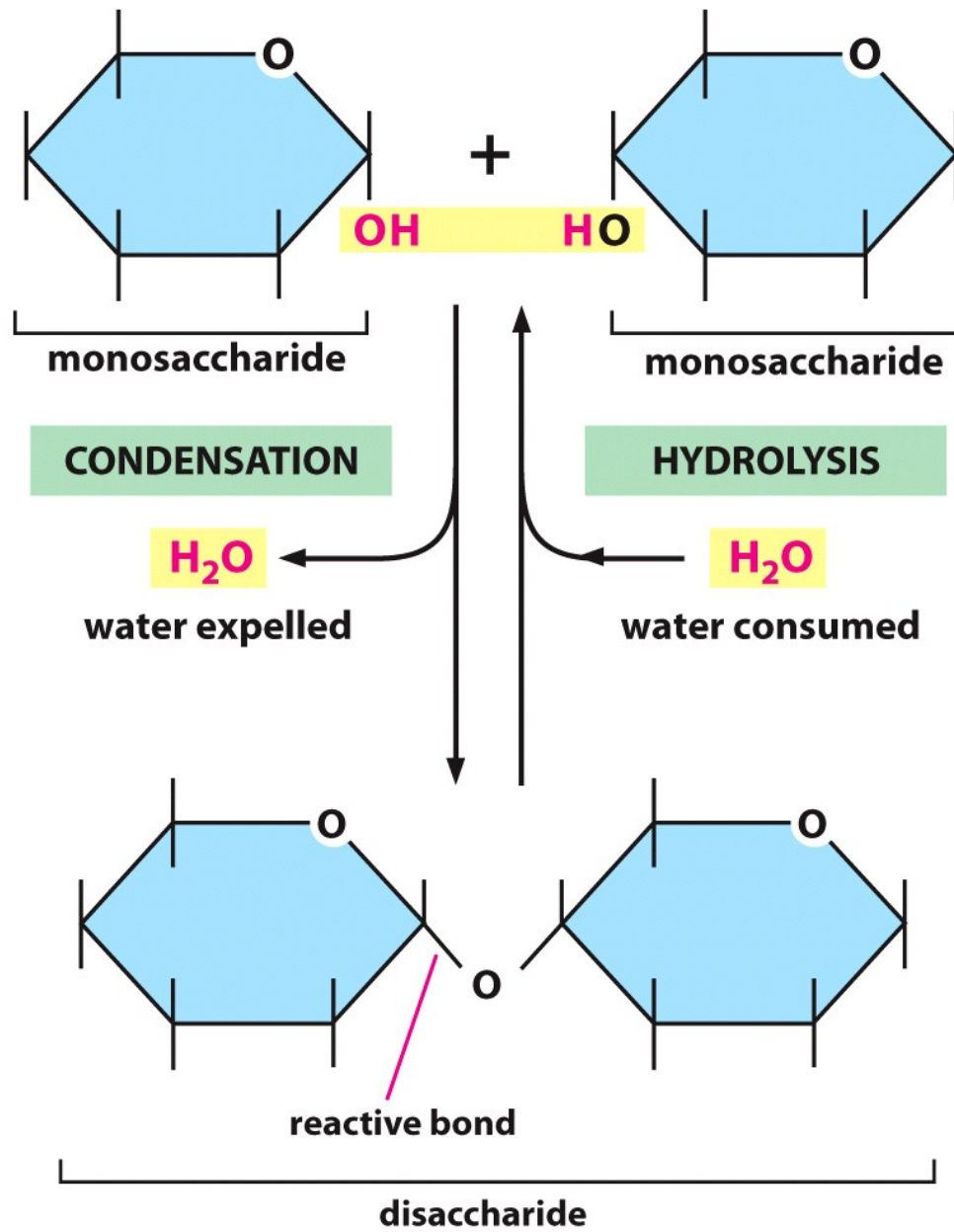


Figure 2-17 *Essential Cell Biology* (© Garland Science 2010)

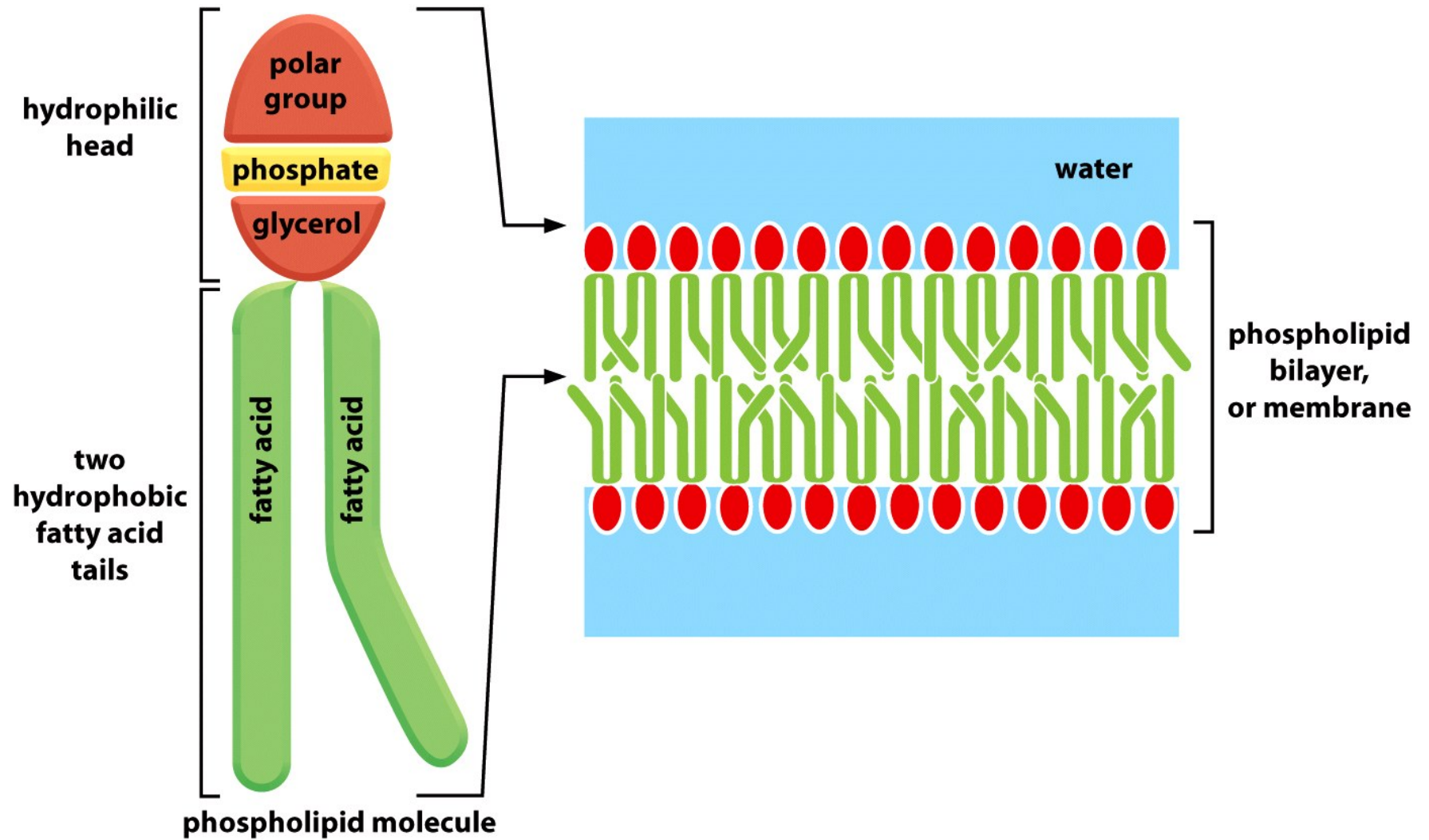


Figure 2-20 *Essential Cell Biology* (© Garland Science 2010)

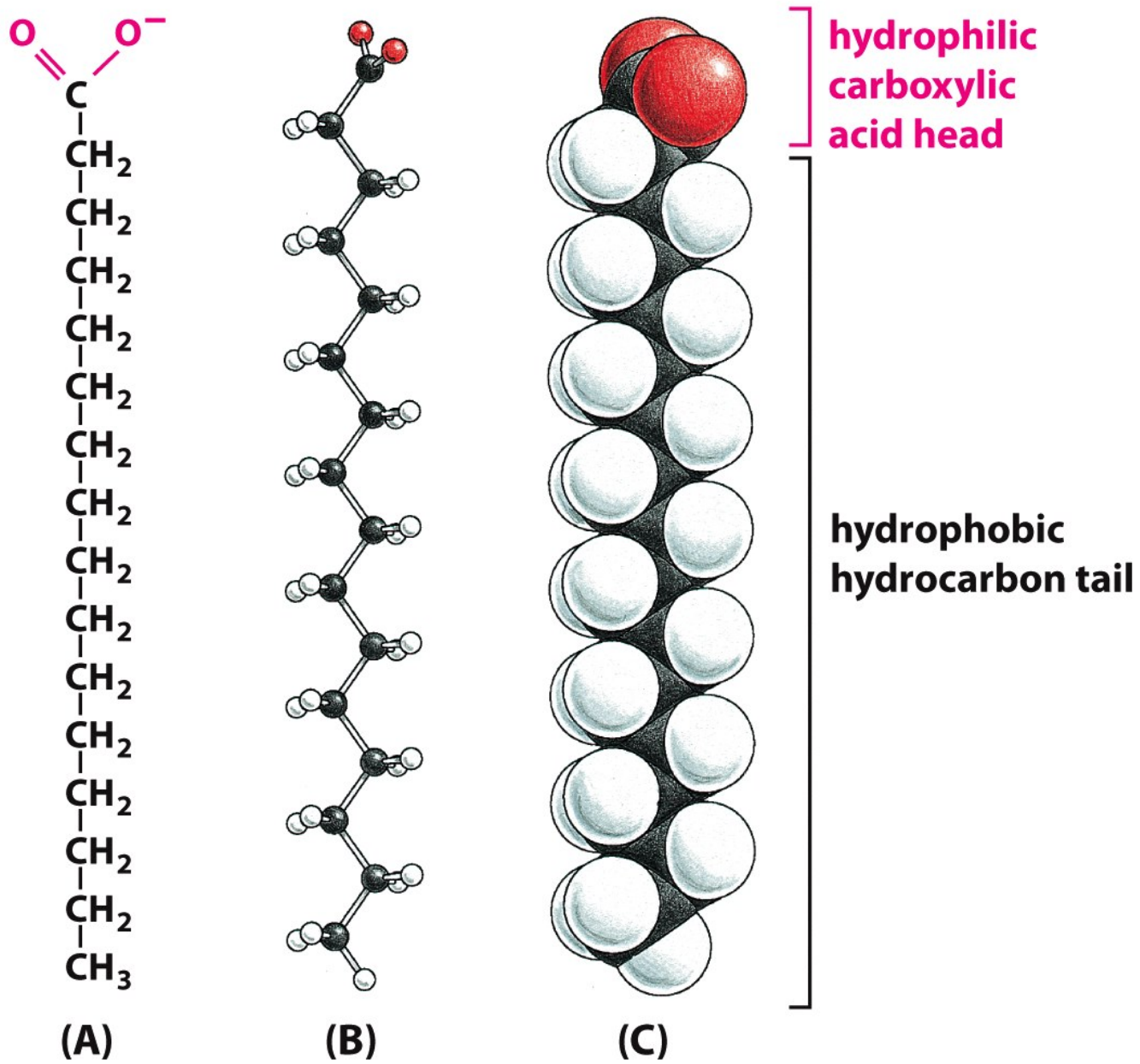


Figure 2-18 *Essential Cell Biology* (© Garland Science 2010)

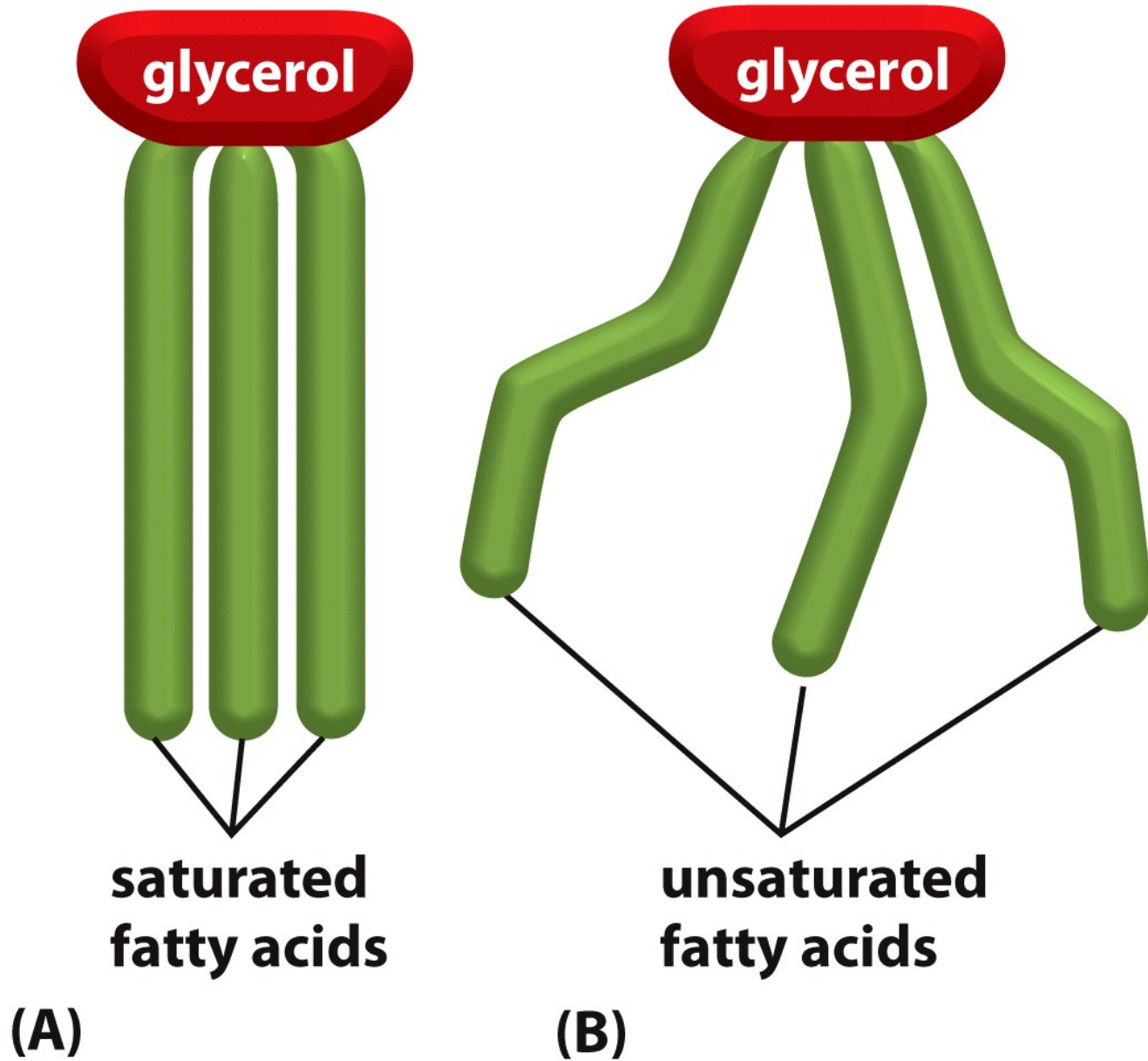
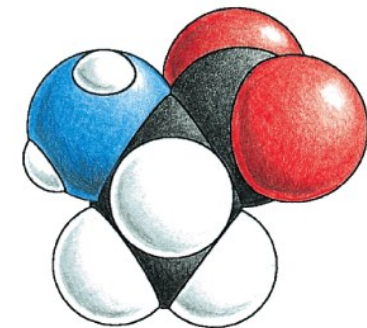
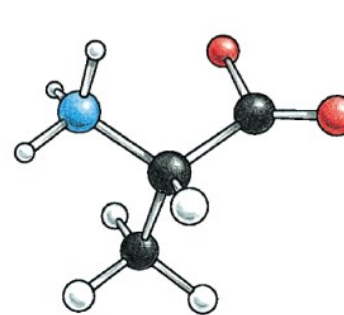
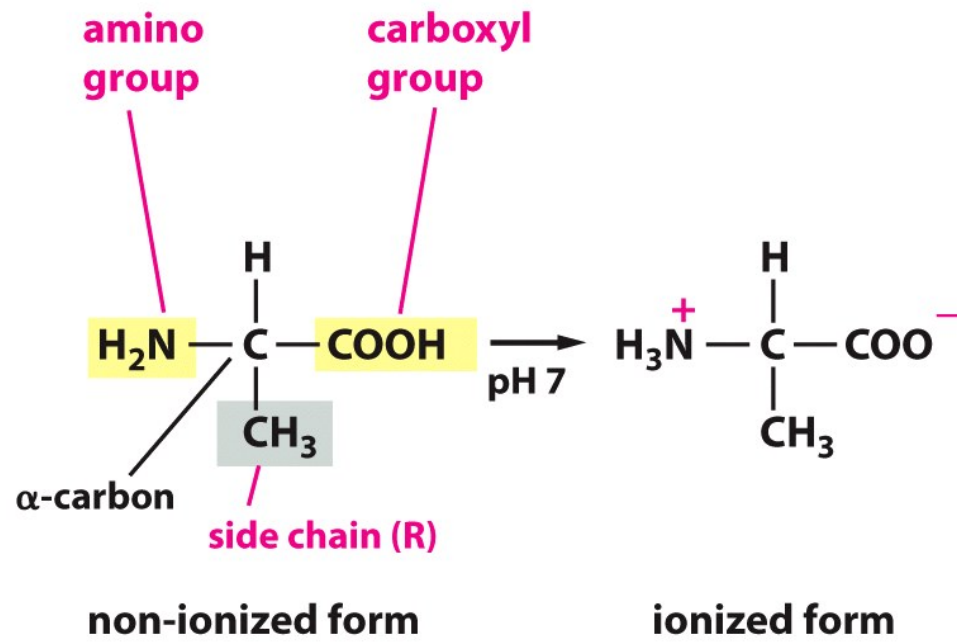


Figure 2-19 *Essential Cell Biology* (© Garland Science 2010)



(A)

(B)

(C)

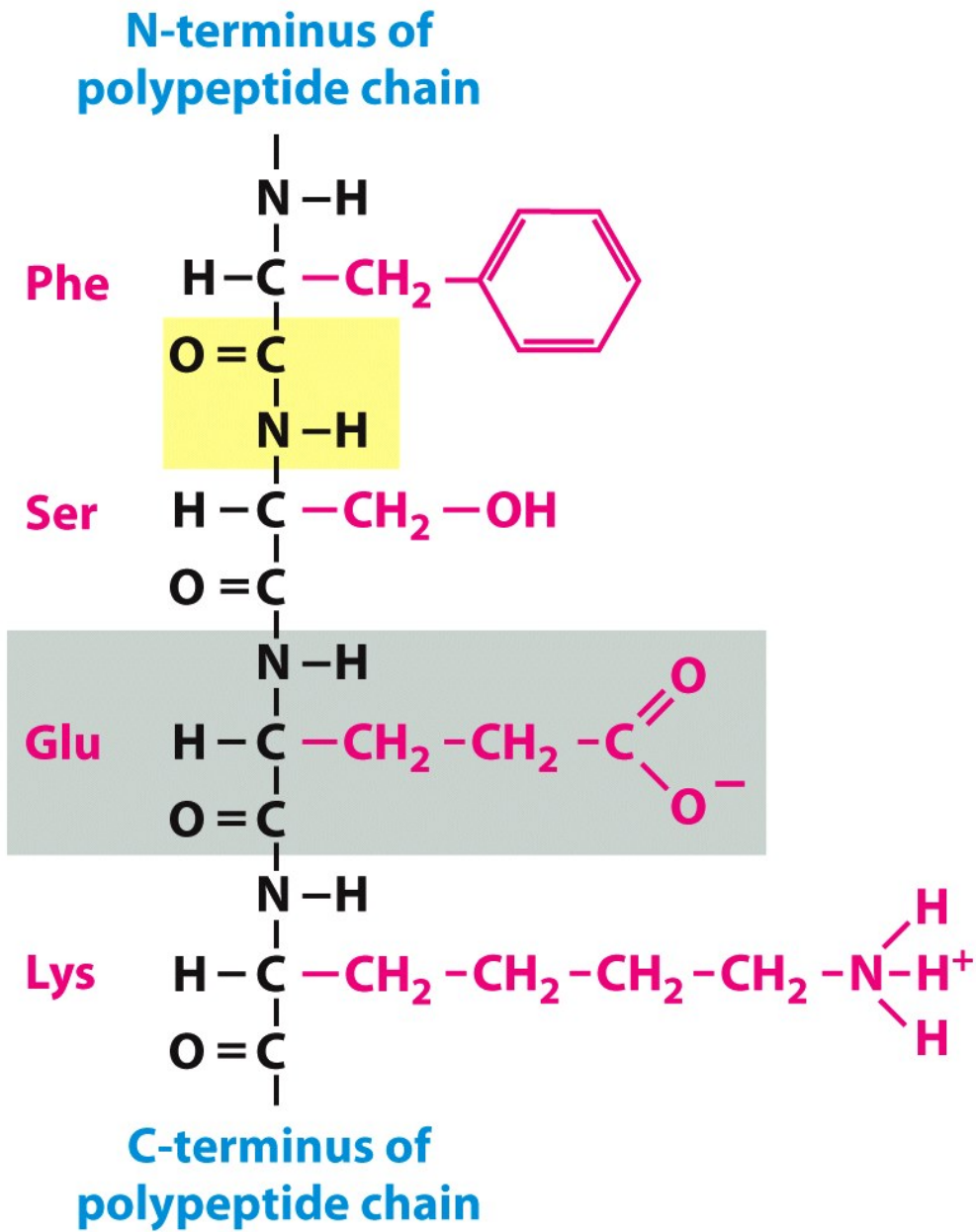
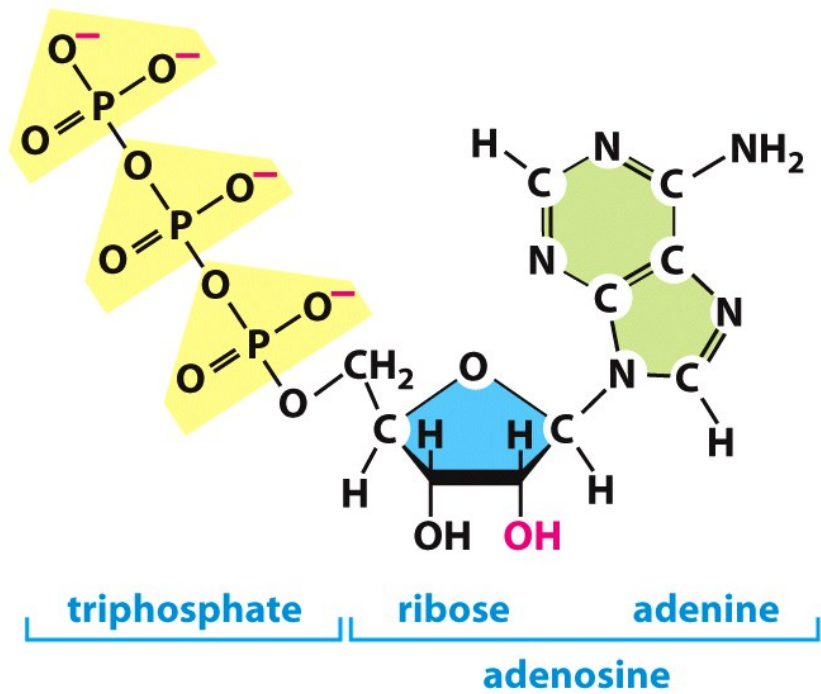
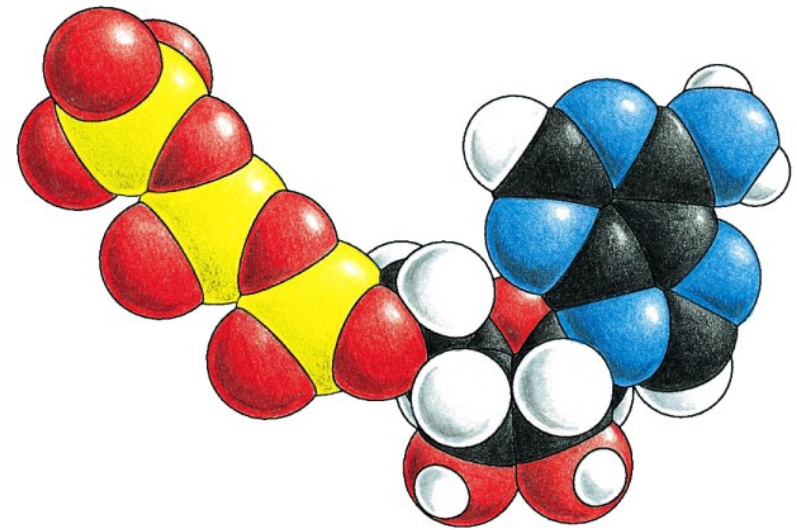


Figure 2-22 *Essential Cell Biology* (© Garland Science 2010)



(A)



(B)

Figure 2-23 *Essential Cell Biology* (© Garland Science 2010)

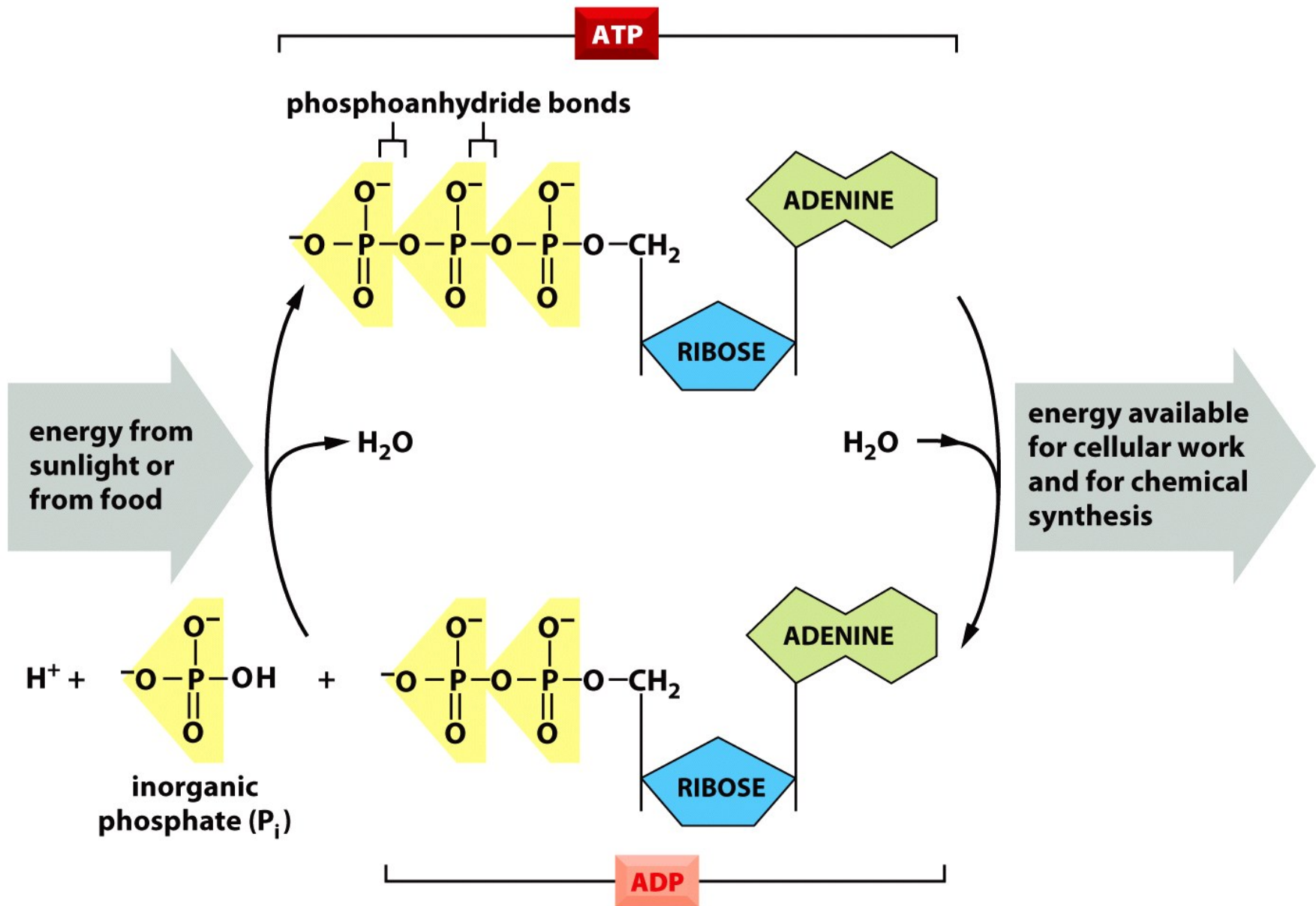


Figure 2-24 *Essential Cell Biology* (© Garland Science 2010)

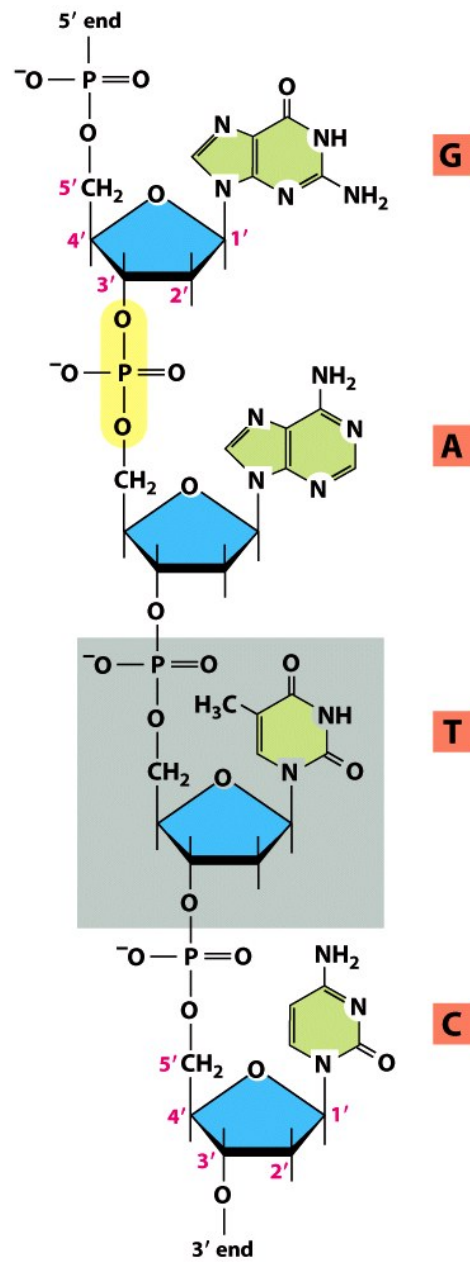


Figure 2-25 *Essential Cell Biology* (© Garland Science 2010)

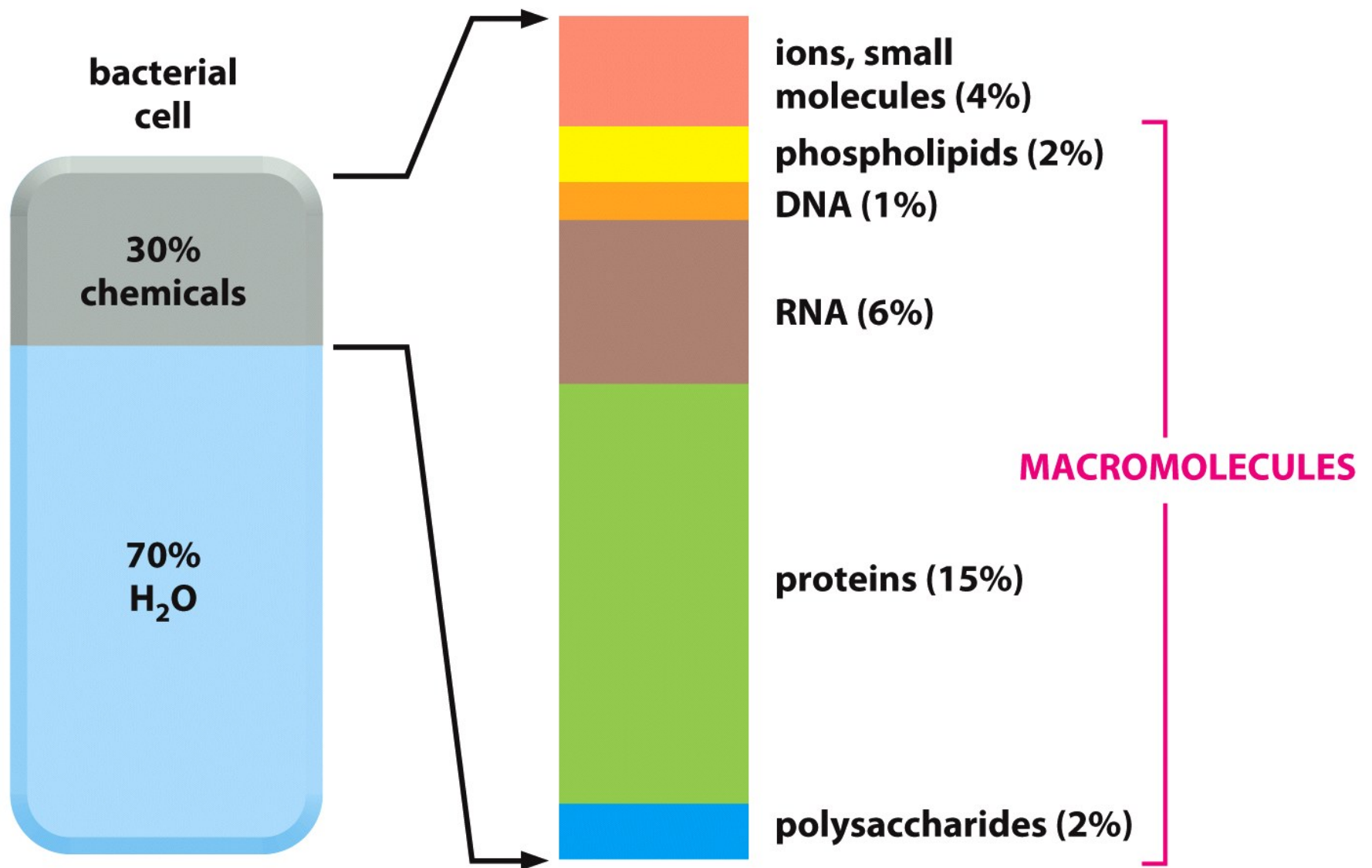


Figure 2-26 *Essential Cell Biology* (© Garland Science 2010)

SUBUNIT



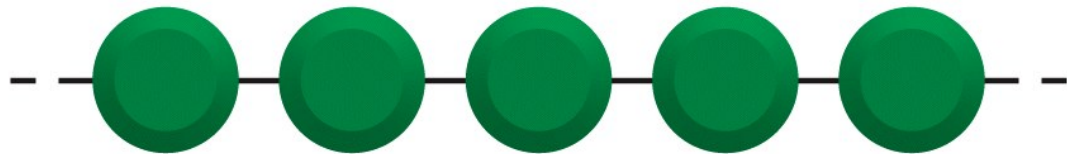
sugar



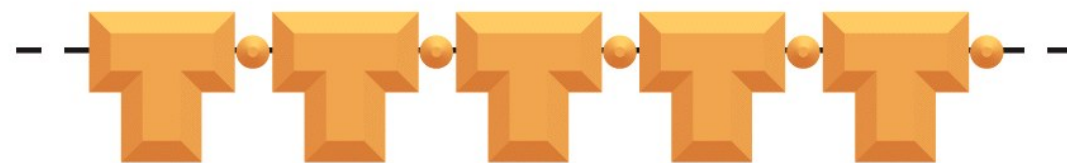
MACROMOLECULE



polysaccharide



protein



nucleic acid

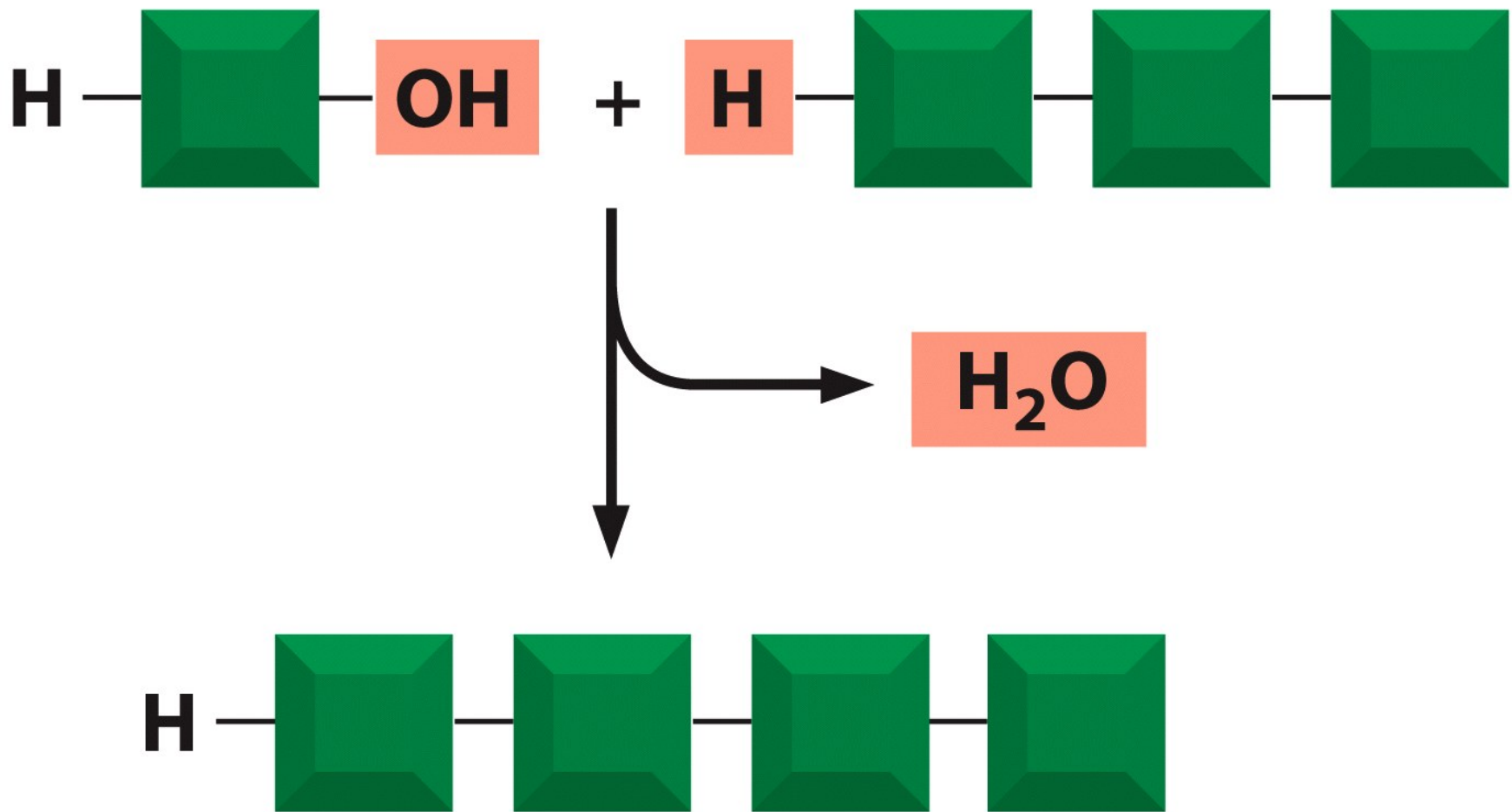
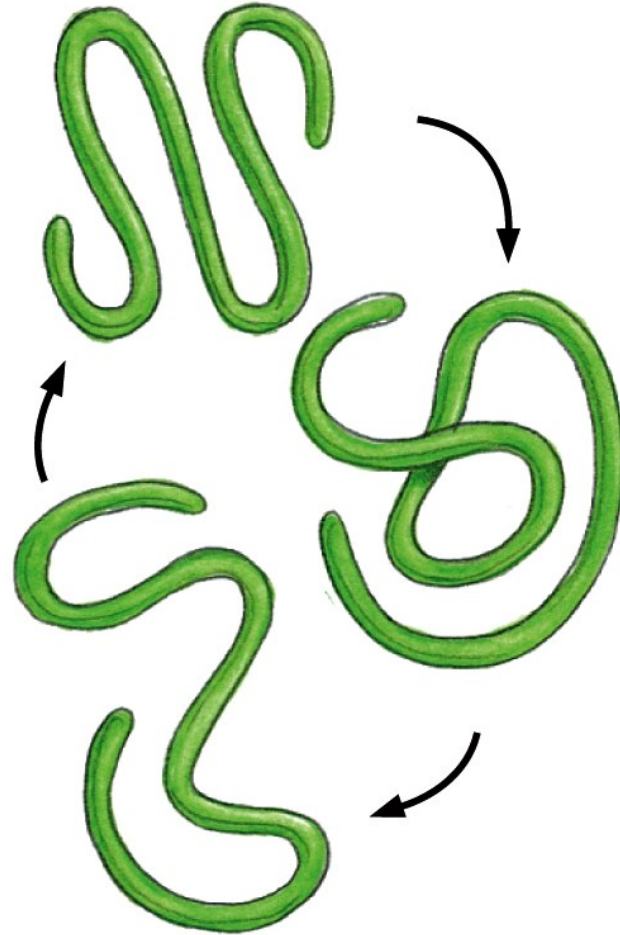


Figure 2-28 *Essential Cell Biology* (© Garland Science 2010)



**one stable folded
conformation**



**many unstable
conformations**

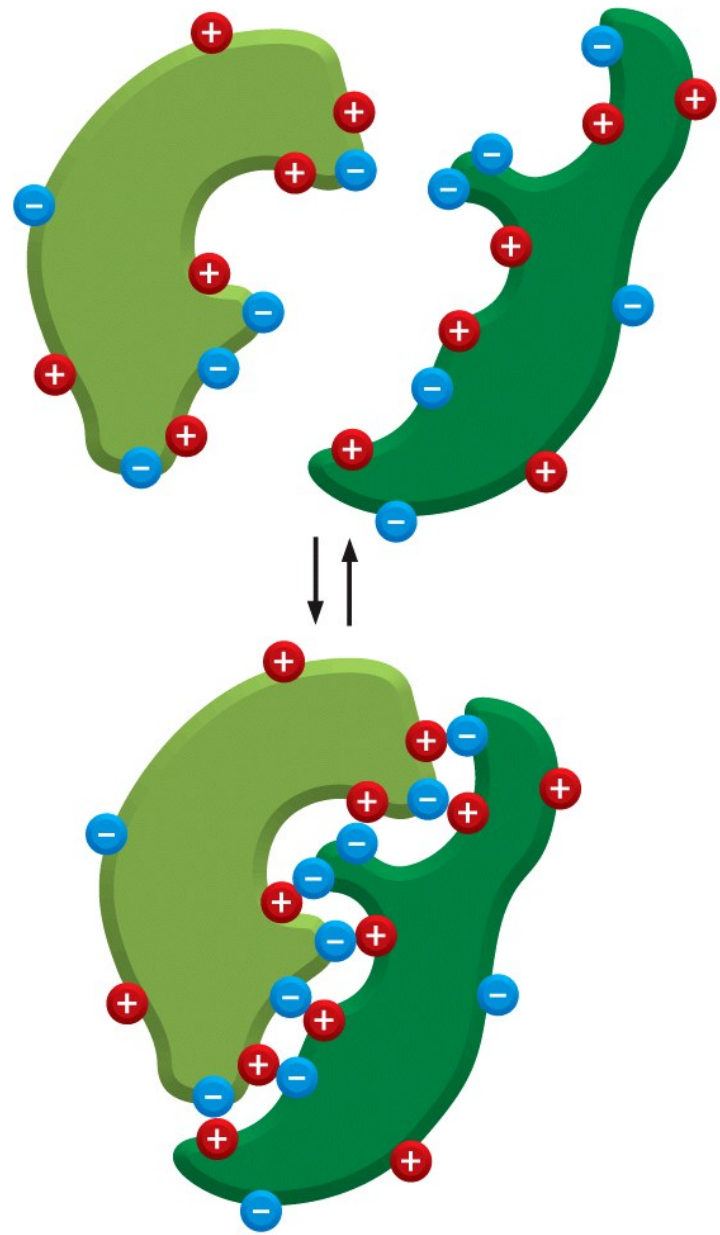


Figure 2-13 *Essential Cell Biology* (© Garland Science 2010)

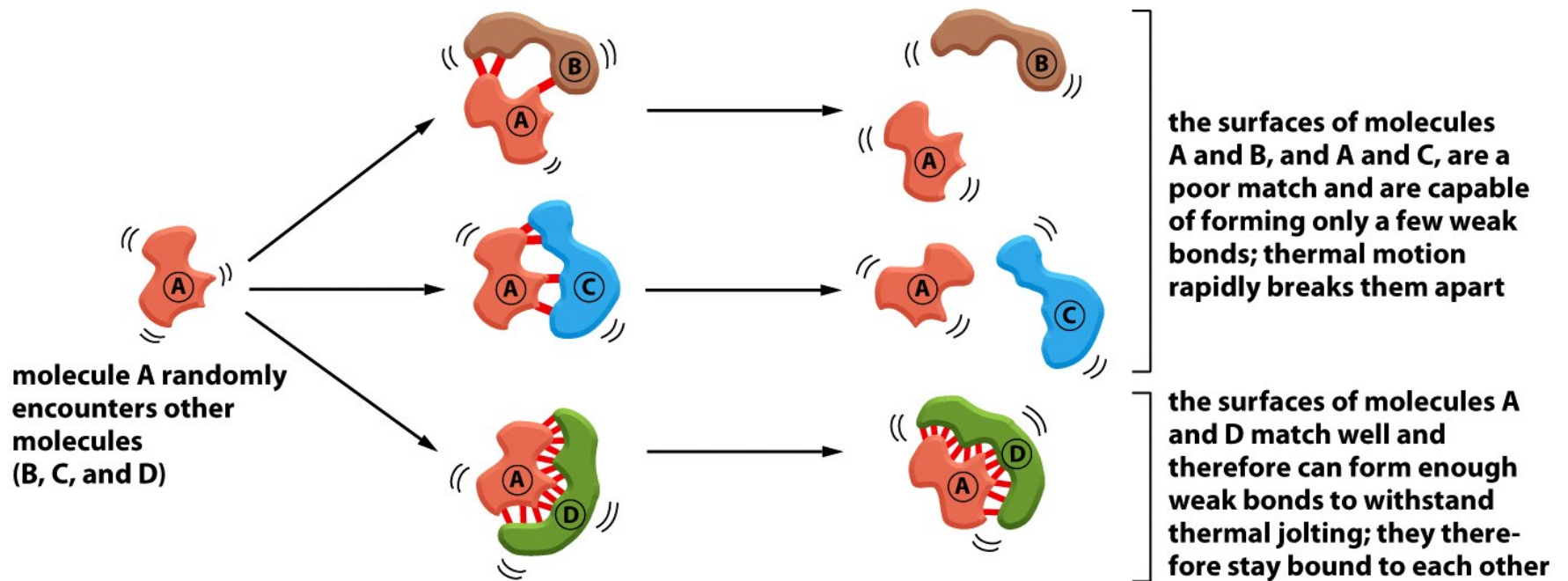


Figure 2-32 *Essential Cell Biology* (© Garland Science 2010)

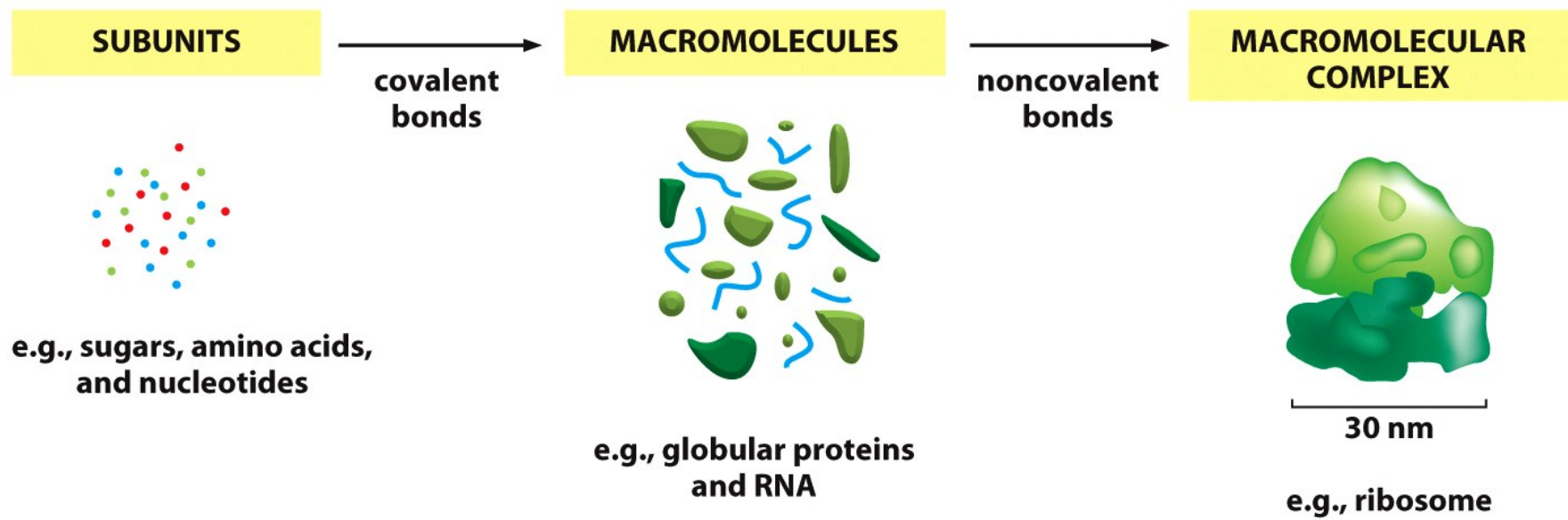


Figure 2-33 *Essential Cell Biology* (© Garland Science 2010)