

Energy, thermodynamics, and kinetics: a molecular perspective

ChE 170, F10

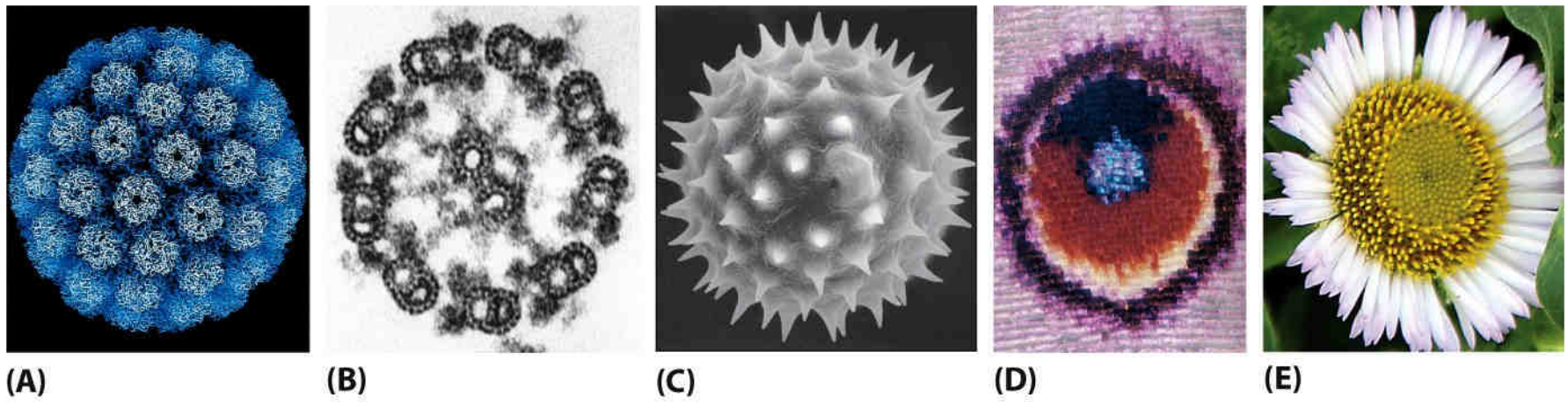


Figure 3-3 *Essential Cell Biology* (© Garland Science 2010)

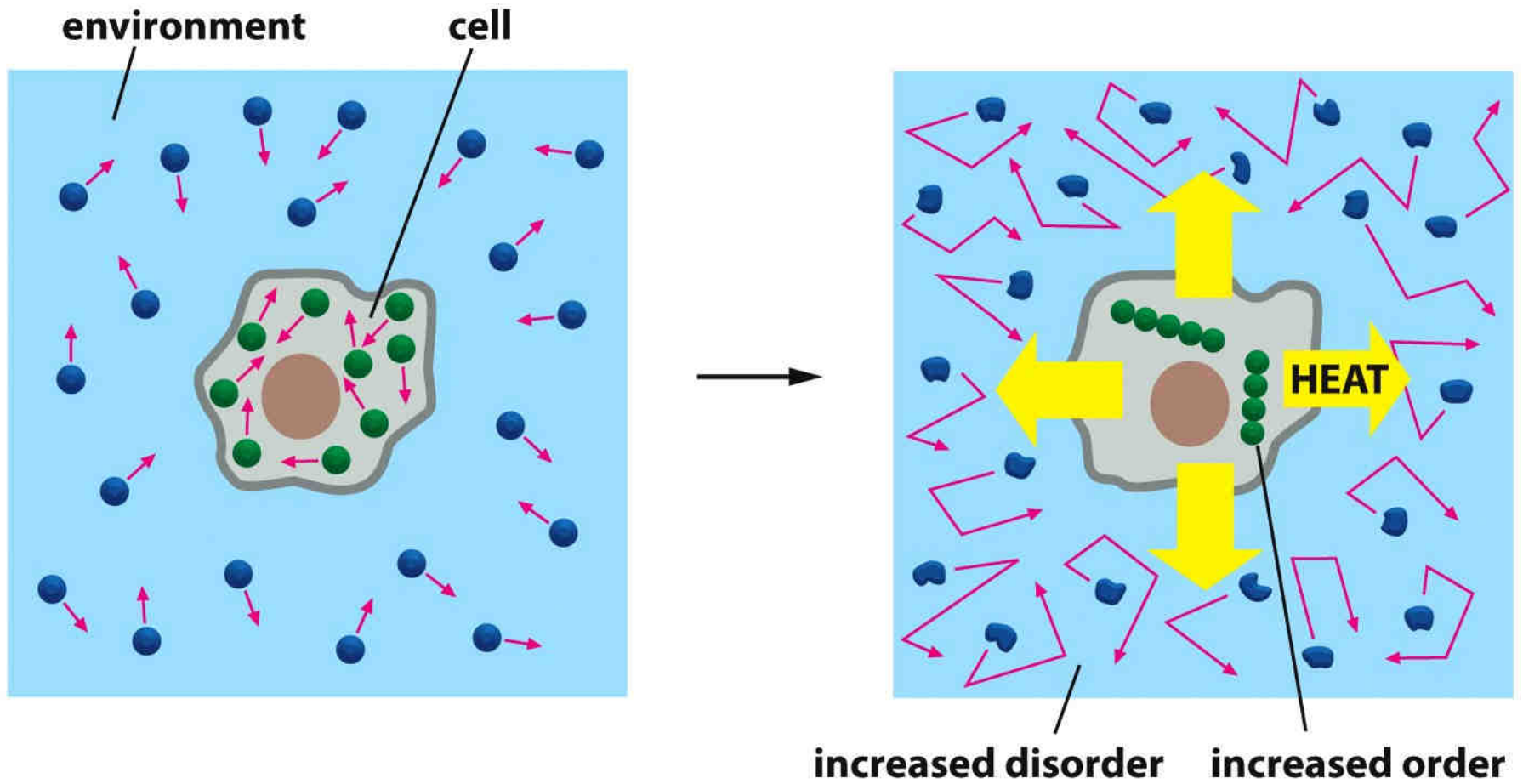
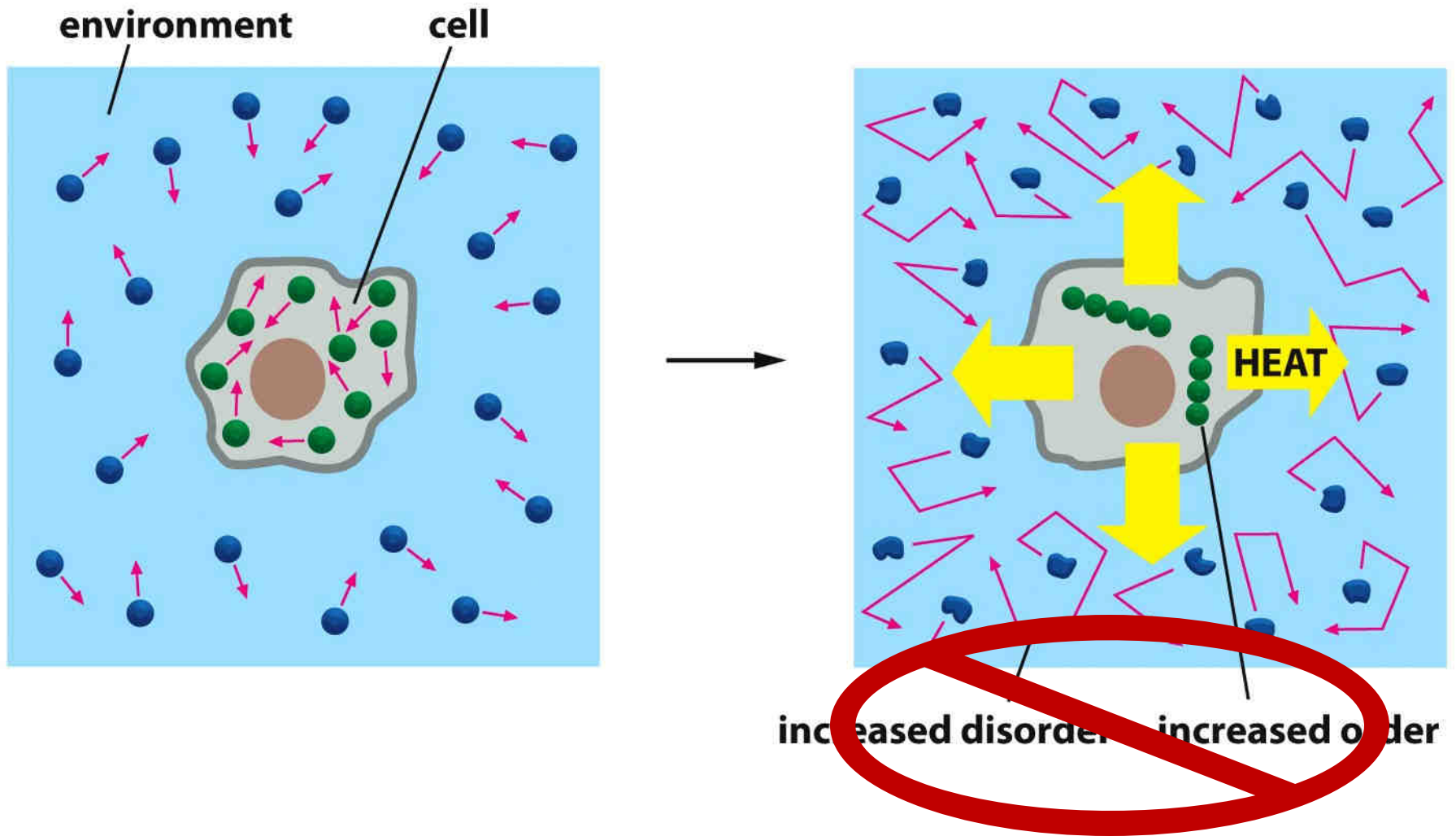
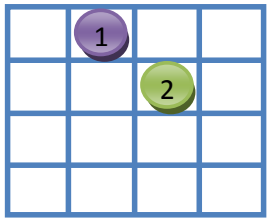


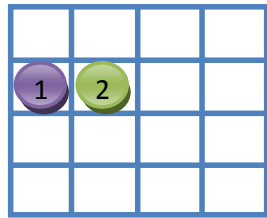
Figure 3-5 *Essential Cell Biology* (© Garland Science 2010)



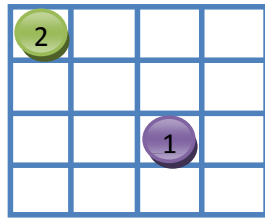
As chemical engineers, you know better than that!



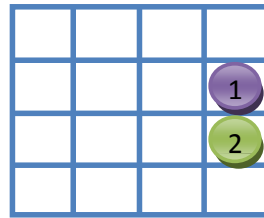
$$U = 0$$



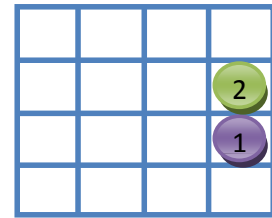
$$U = -\epsilon$$



$$U = 0$$



$$U = -\epsilon$$



$$U = -\epsilon$$

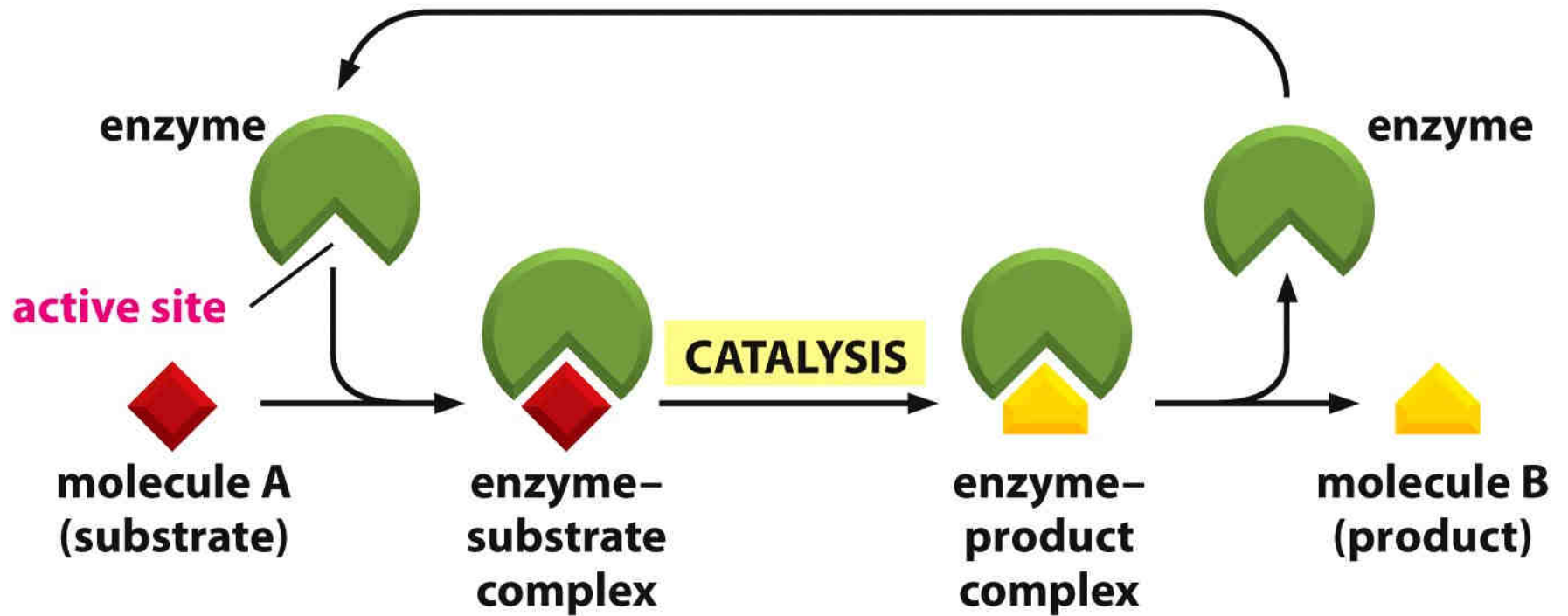


Figure 3-15 *Essential Cell Biology* (© Garland Science 2010)

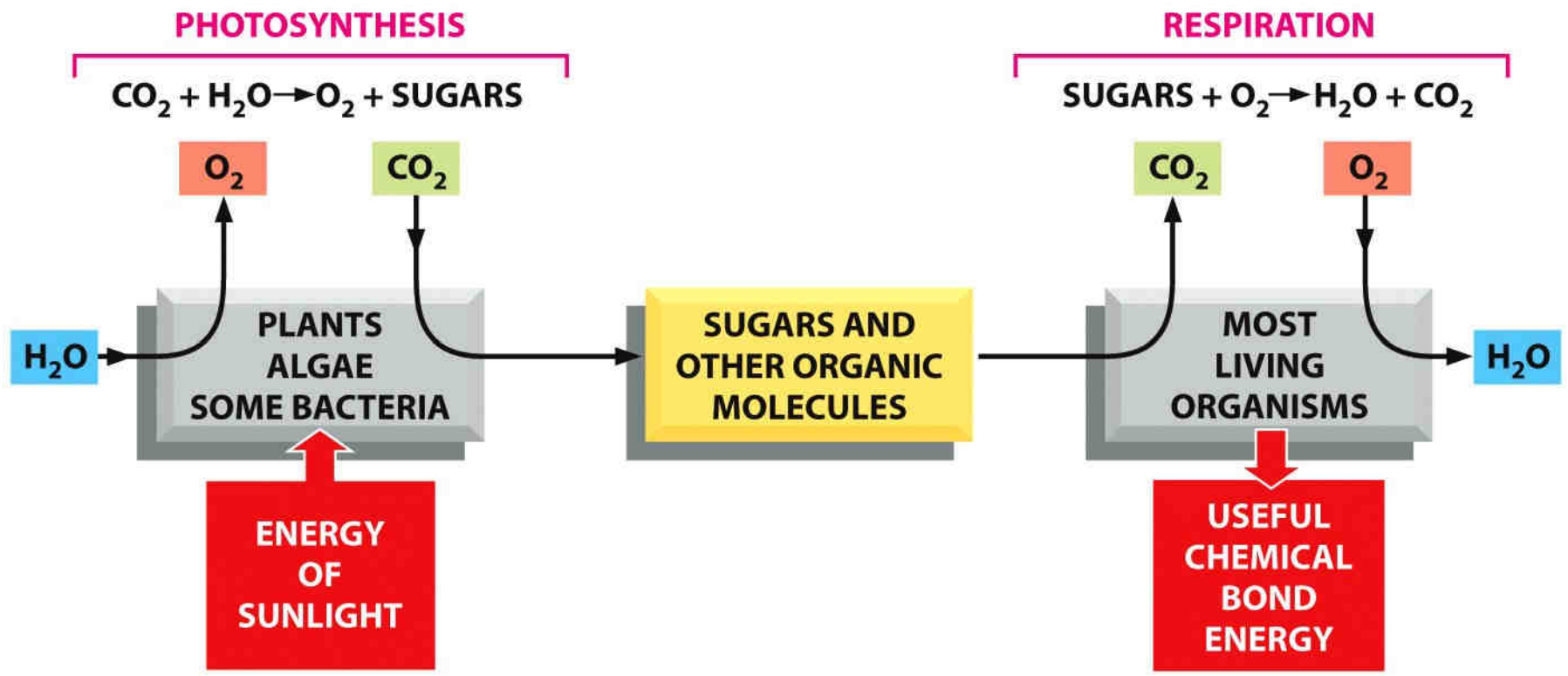


Figure 3-9 *Essential Cell Biology* (© Garland Science 2010)

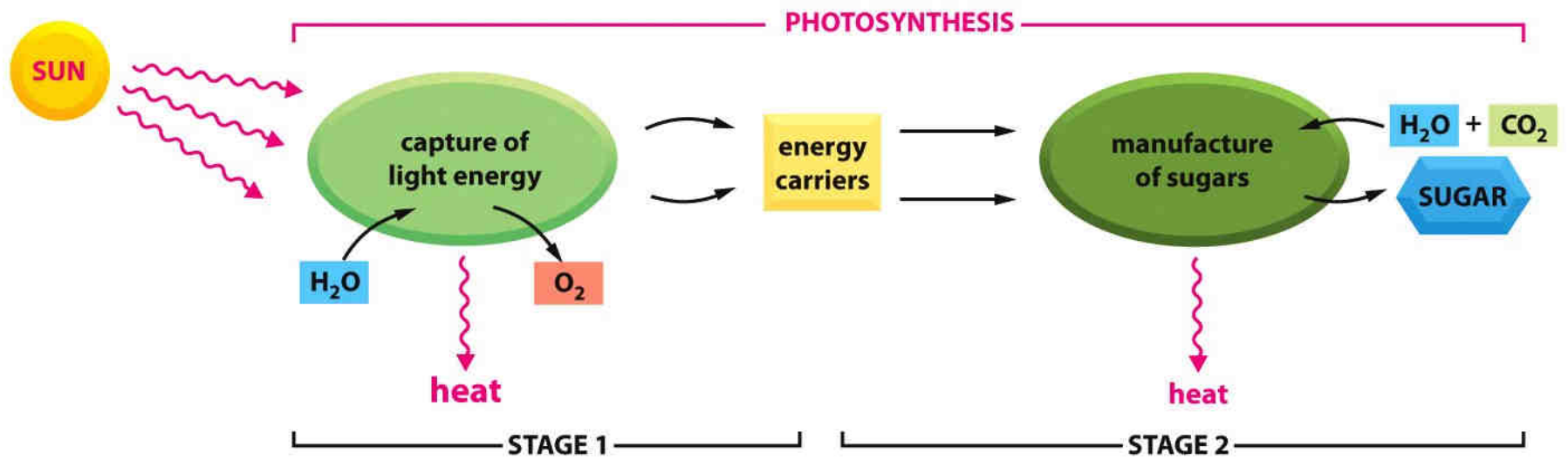


Figure 3-8 *Essential Cell Biology* (© Garland Science 2010)

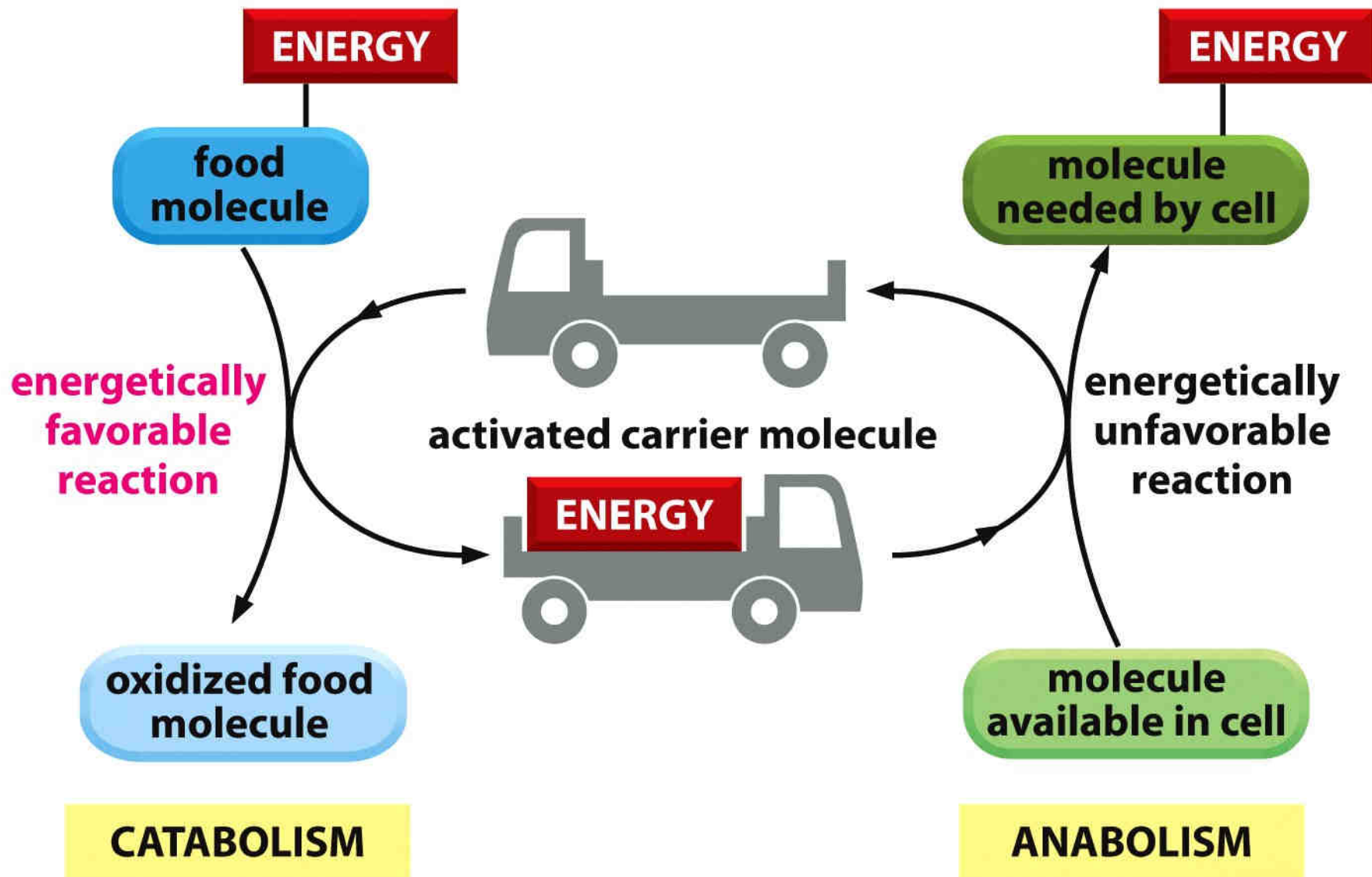


Figure 3-29 *Essential Cell Biology* (© Garland Science 2010)

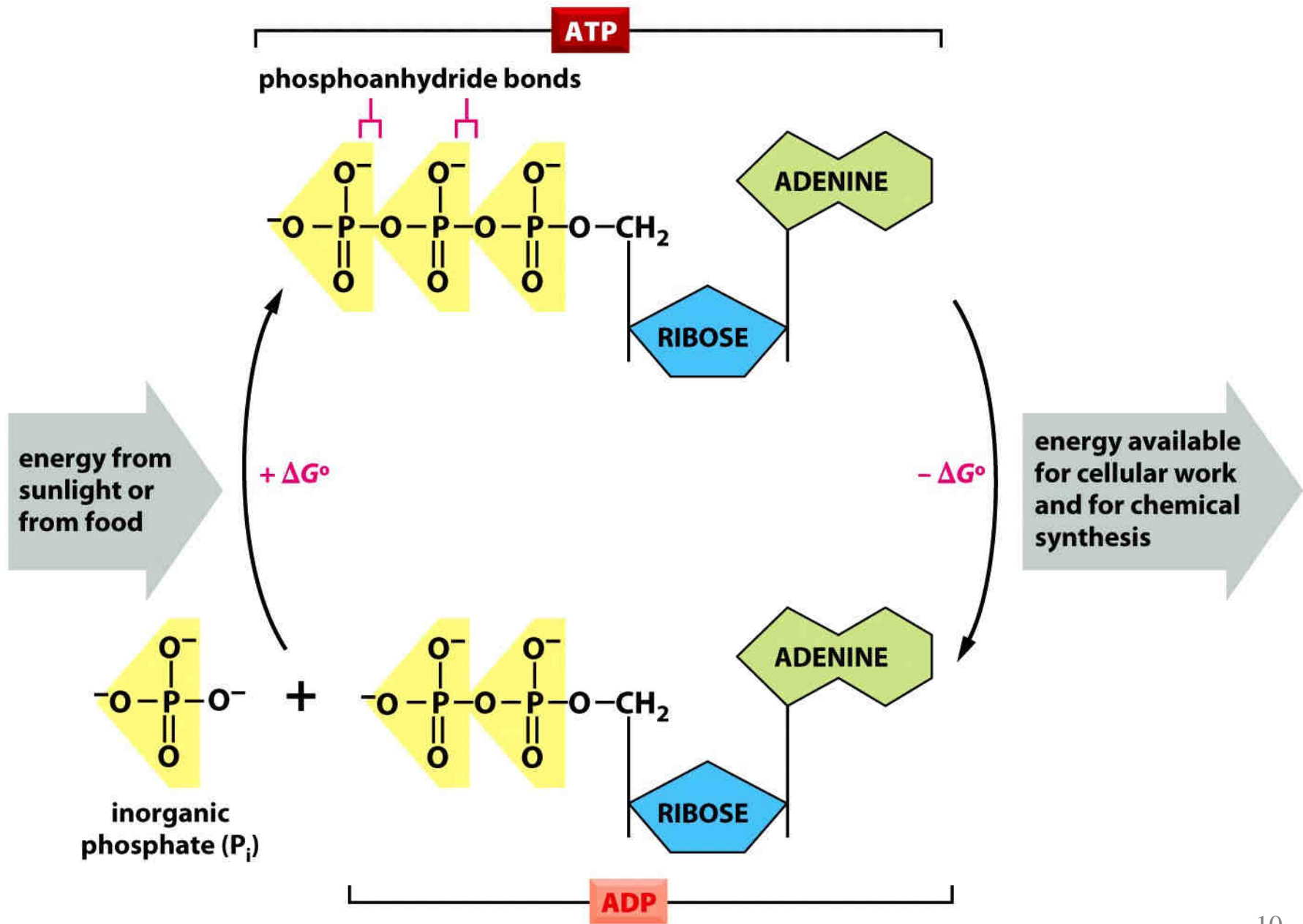


Figure 3-31 *Essential Cell Biology* (© Garland Science 2010)

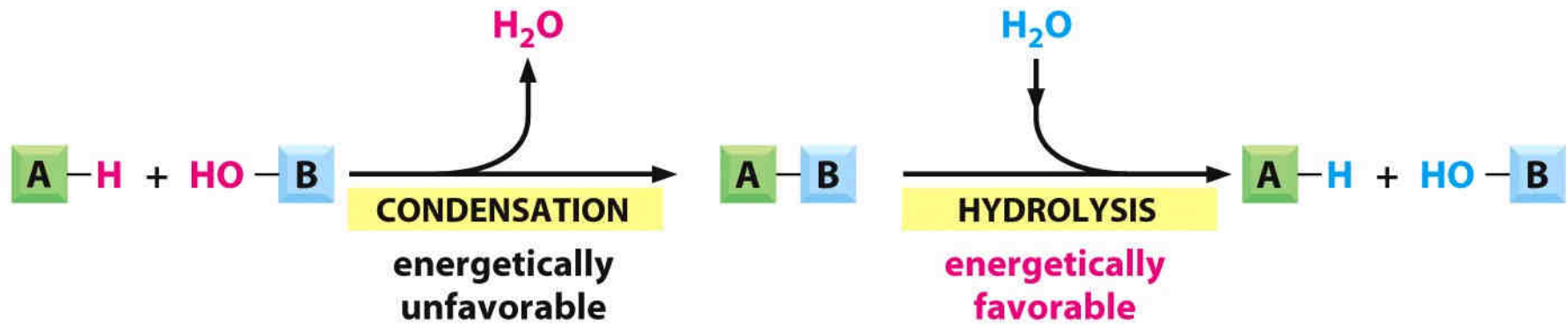


Figure 3-38 *Essential Cell Biology* (© Garland Science 2010)

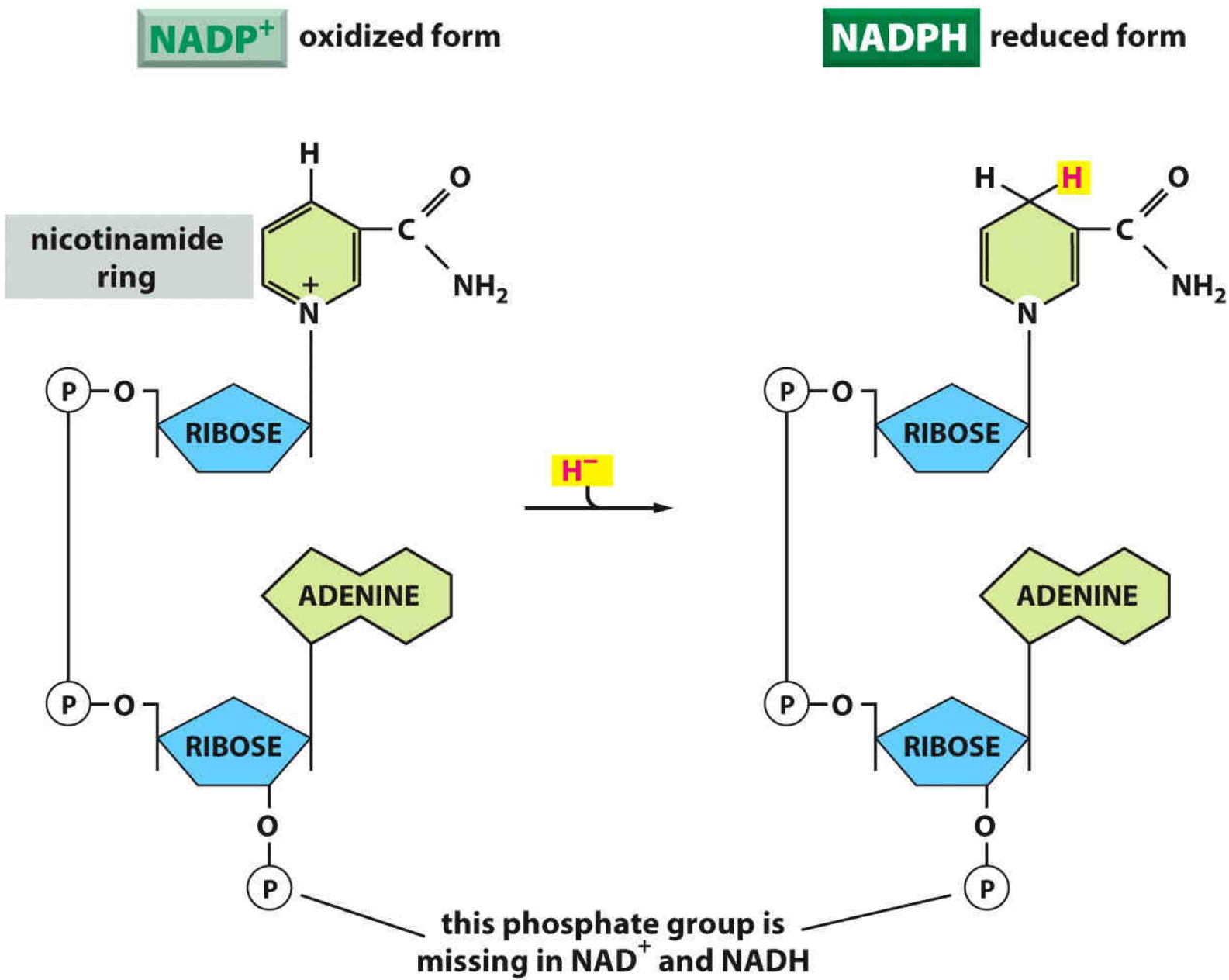


Figure 3-34b *Essential Cell Biology* (© Garland Science 2010)

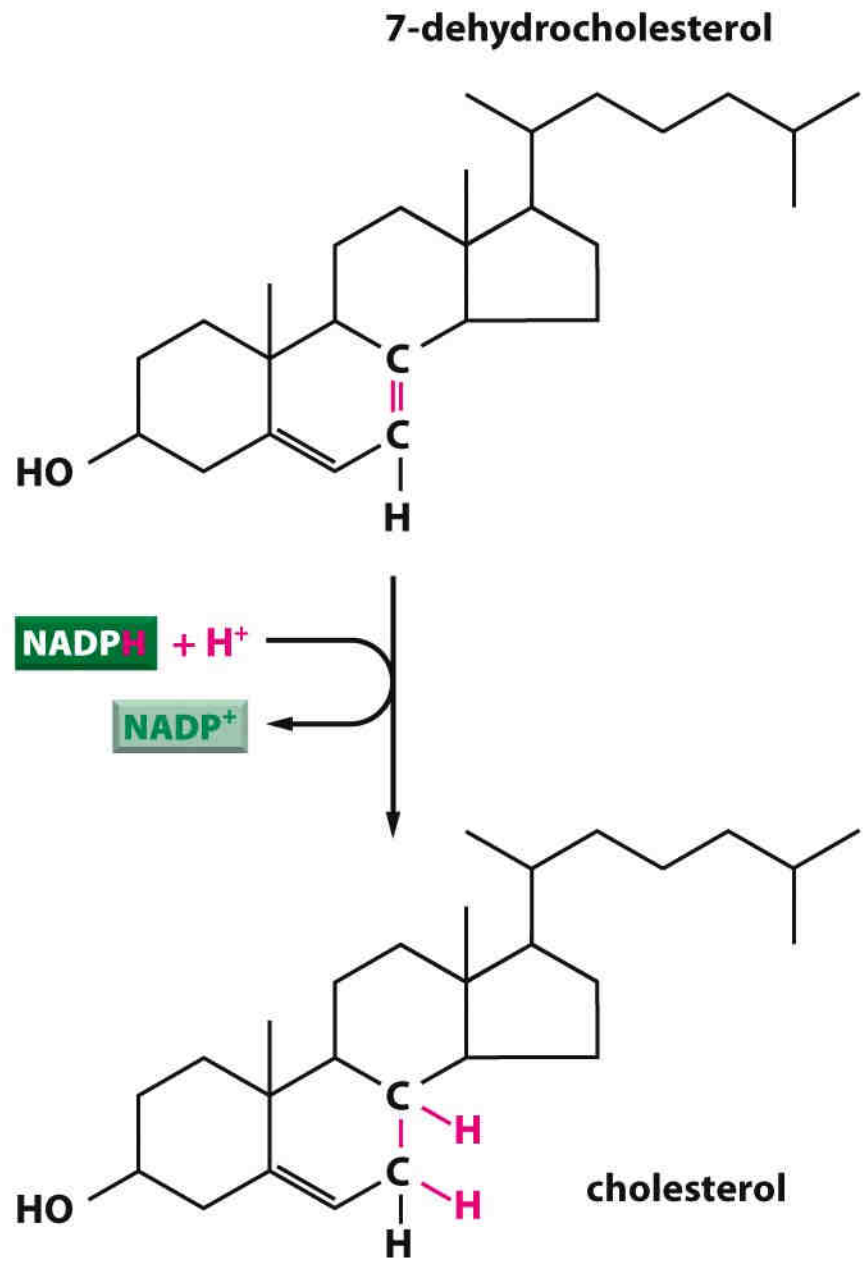
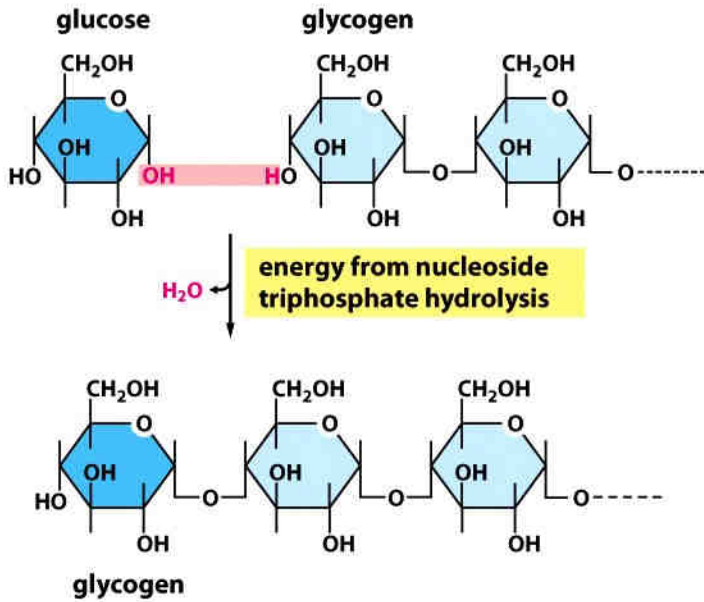


Figure 3-35 *Essential Cell Biology* (© Garland Science 2010)

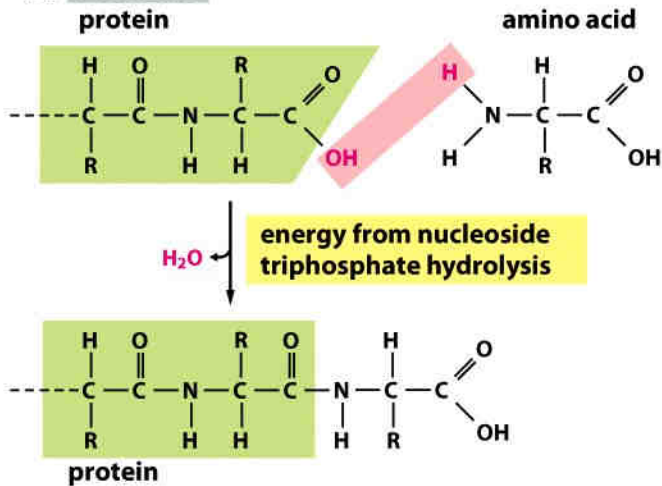
TABLE 3-2 SOME ACTIVATED CARRIER MOLECULES WIDELY USED IN METABOLISM

ACTIVATED CARRIER	GROUP CARRIED IN HIGH-ENERGY LINKAGE
ATP	phosphate
NADH, NADPH, FADH₂	electrons and hydrogens
Acetyl CoA	acetyl group
Carboxylated biotin	carboxyl group
S-adenosylmethionine	methyl group
Uridine diphosphate glucose	glucose

(A) POLYSACCHARIDES



(C) PROTEINS



(B) NUCLEIC ACIDS

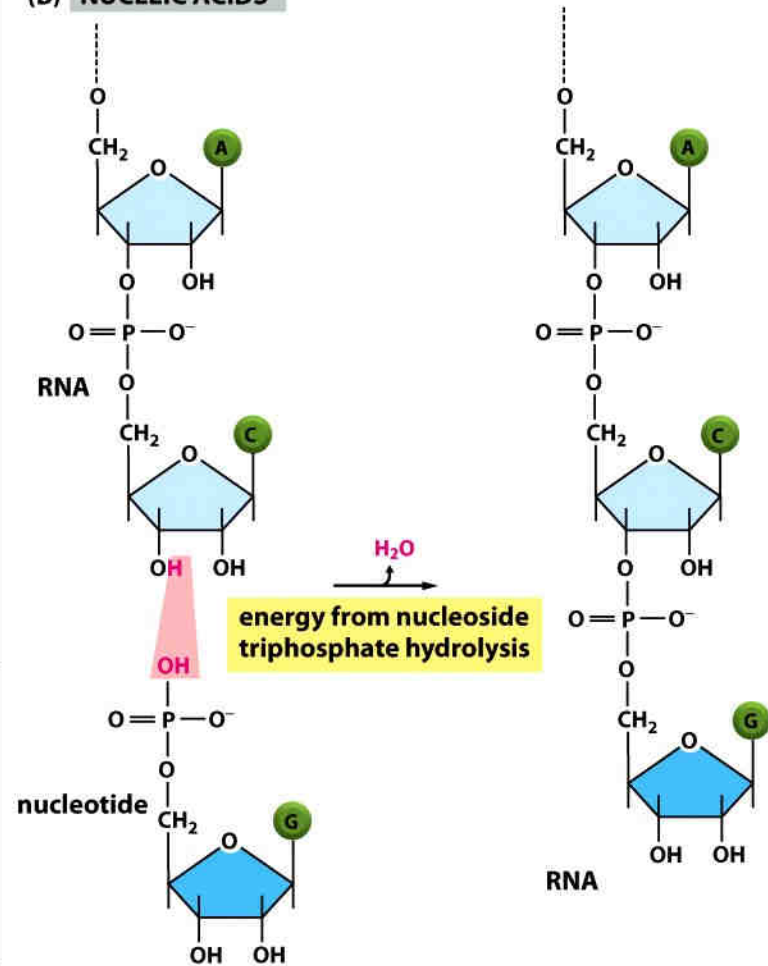


Figure 3-39 *Essential Cell Biology* (© Garland Science 2010)