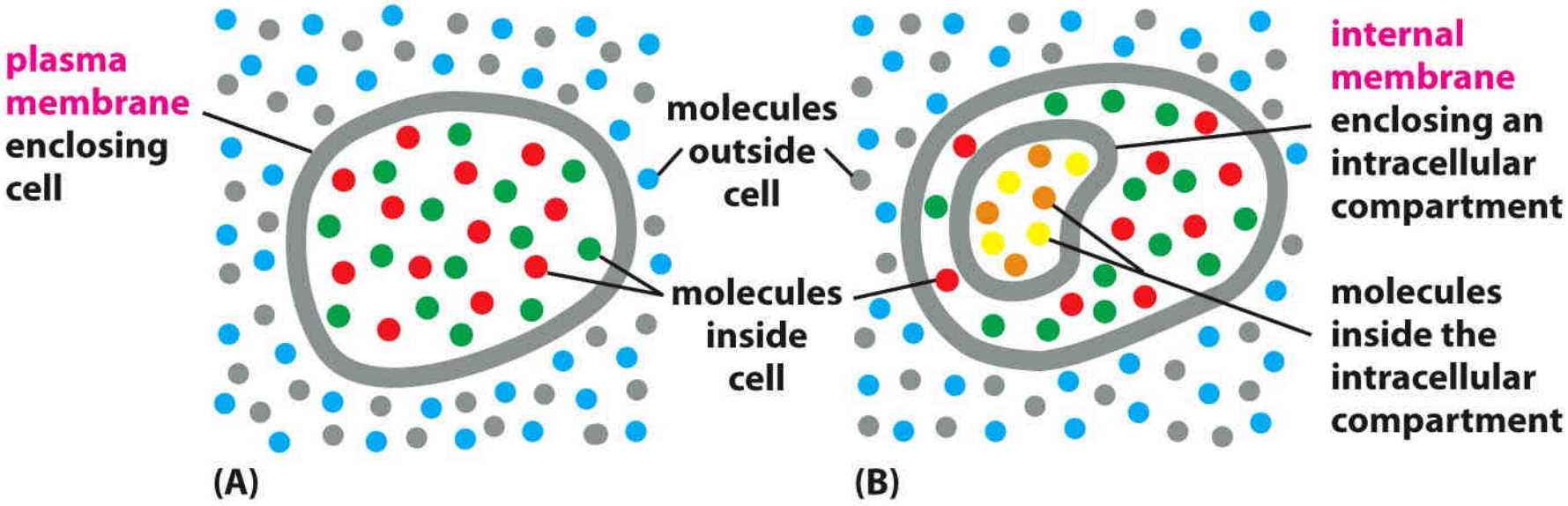


Figure 11-1 *Essential Cell Biology* (© Garland Science 2010)

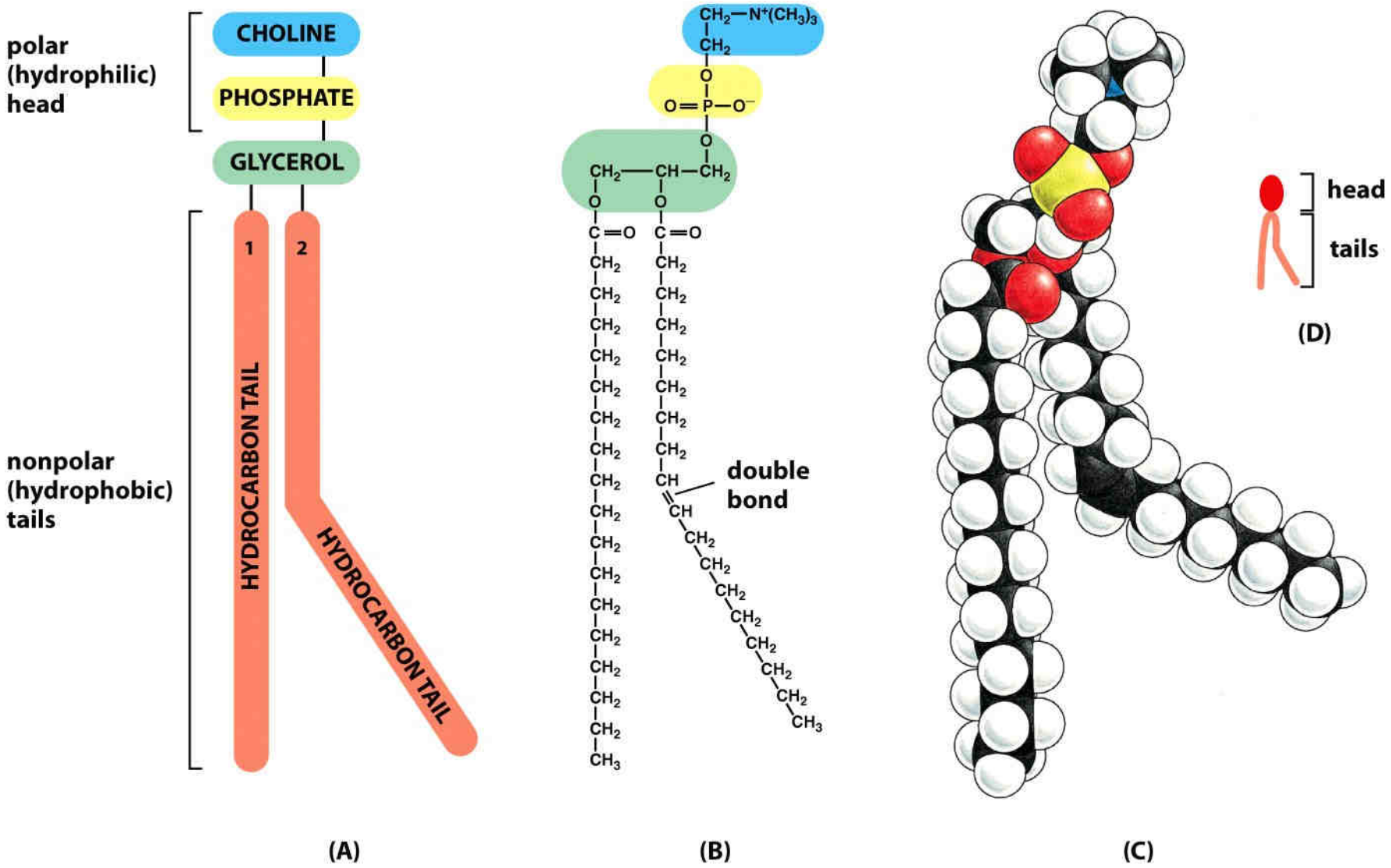
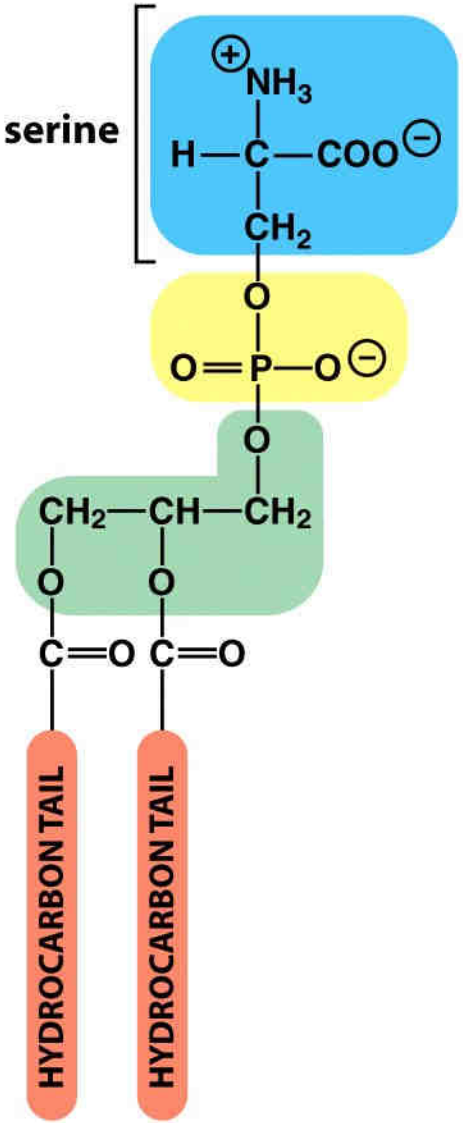
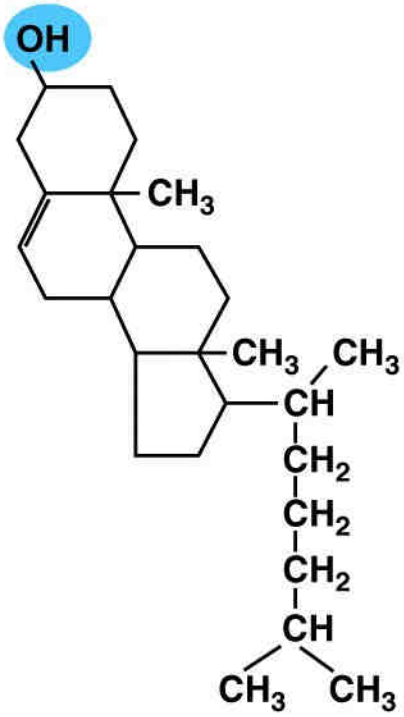


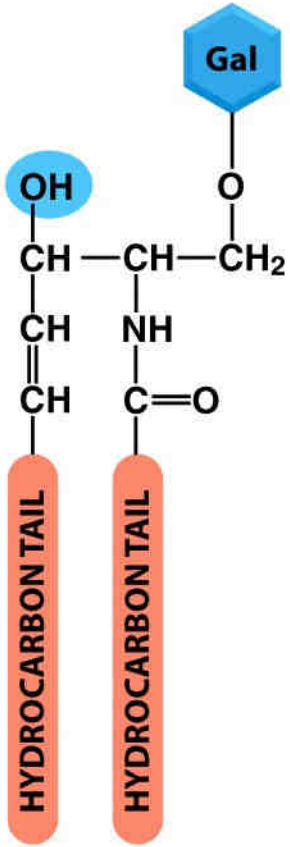
Figure 11-6 *Essential Cell Biology* (© Garland Science 2010)



phosphatidylserine
(phospholipid)



cholesterol
(sterol)



galactocerebroside
(glycolipid)

Figure 11-7 *Essential Cell Biology* (© Garland Science 2010)

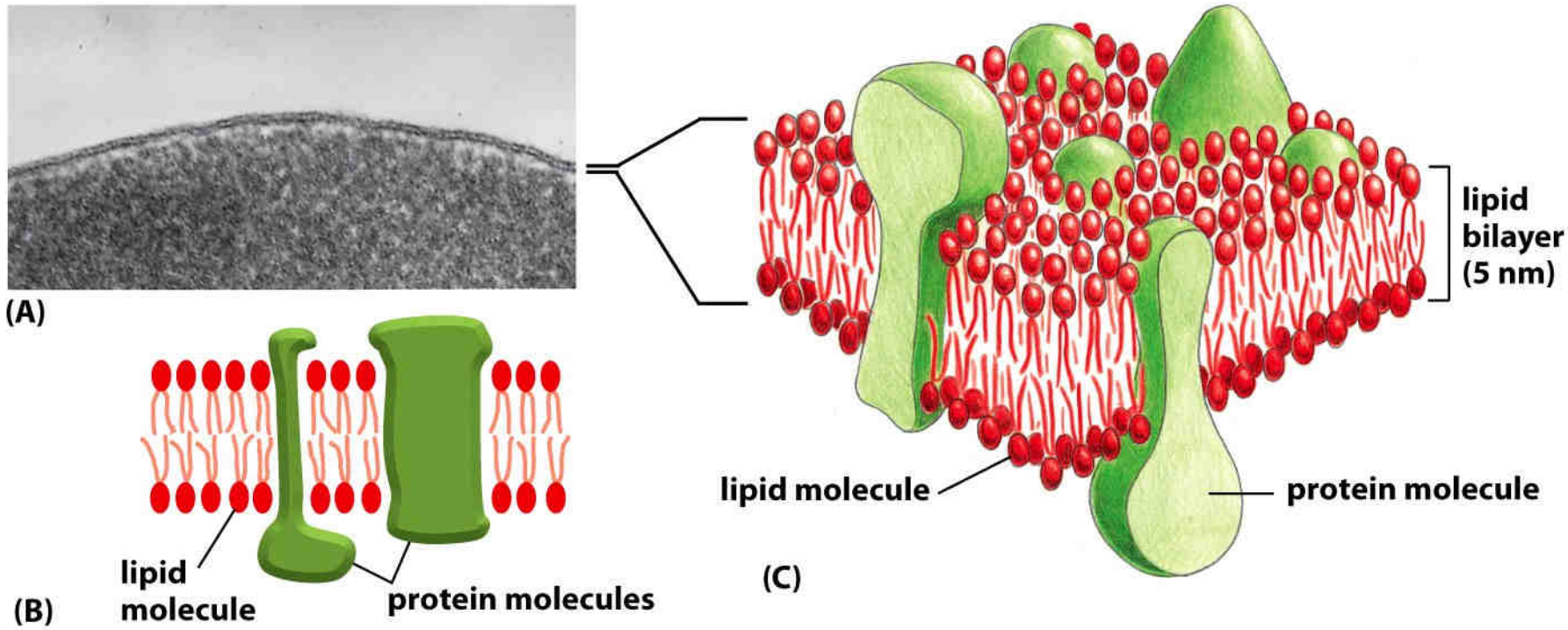


Figure 11-4 *Essential Cell Biology* (© Garland Science 2010)

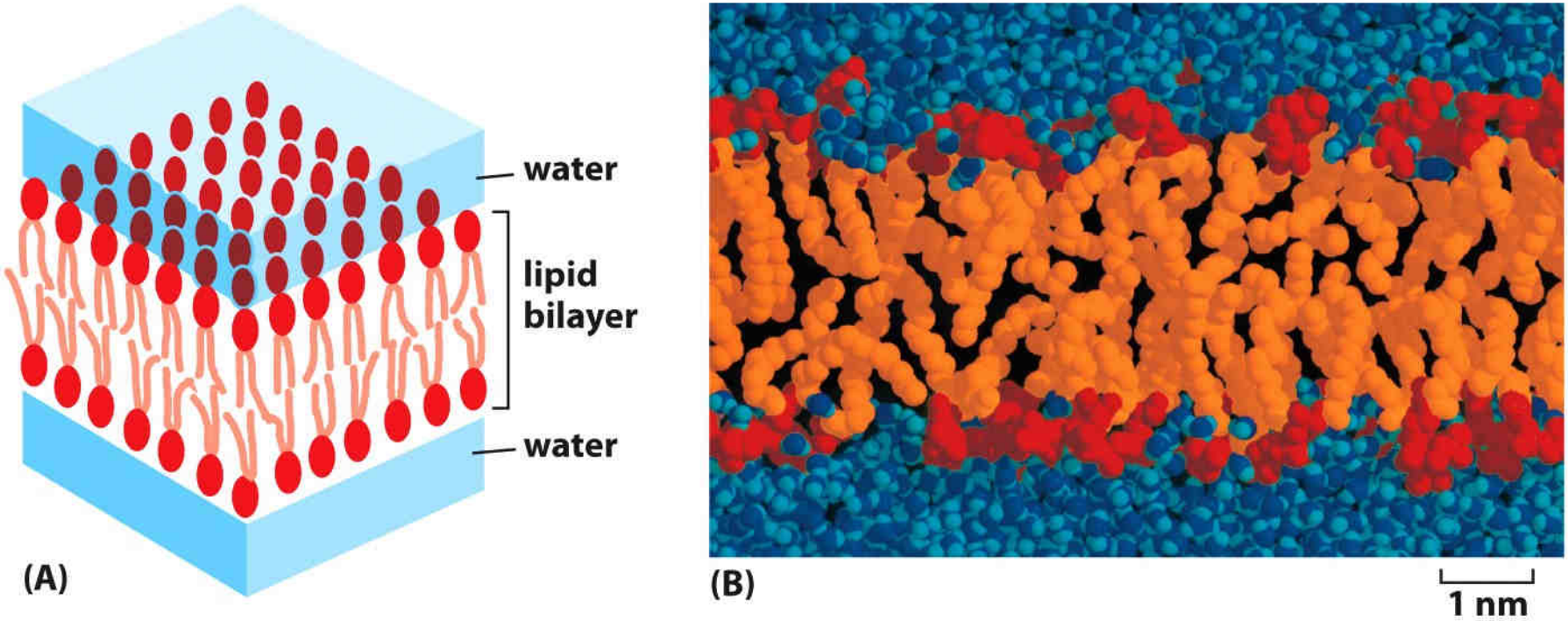
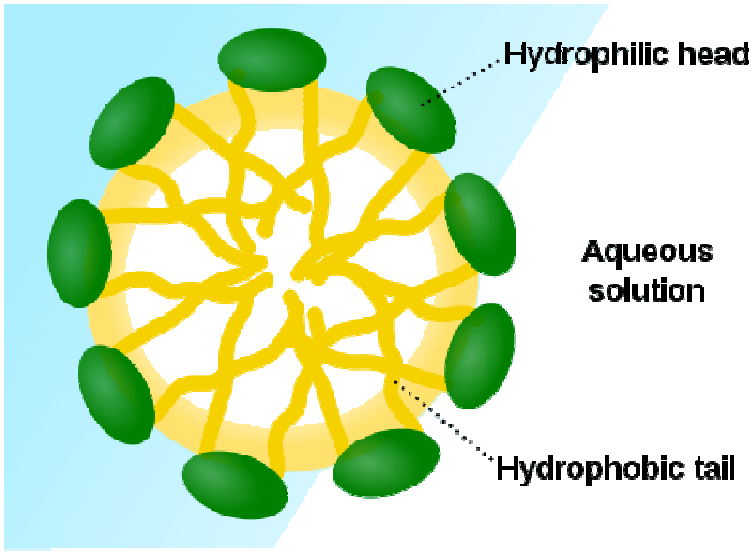
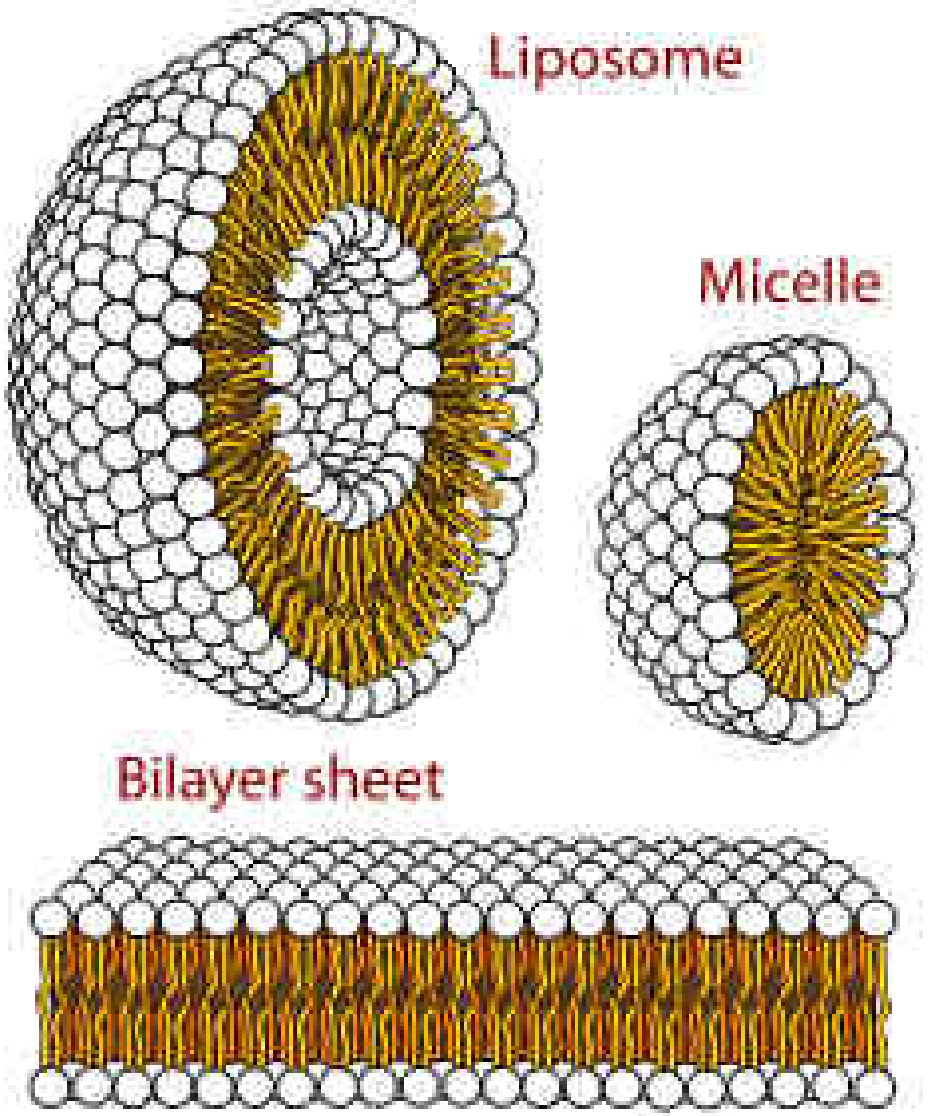


Figure 11-11 *Essential Cell Biology* (© Garland Science 2010)


Hydrophilic head
Aqueous solution
Hydrophobic tail


Liposome
Micelle
Bilayer sheet

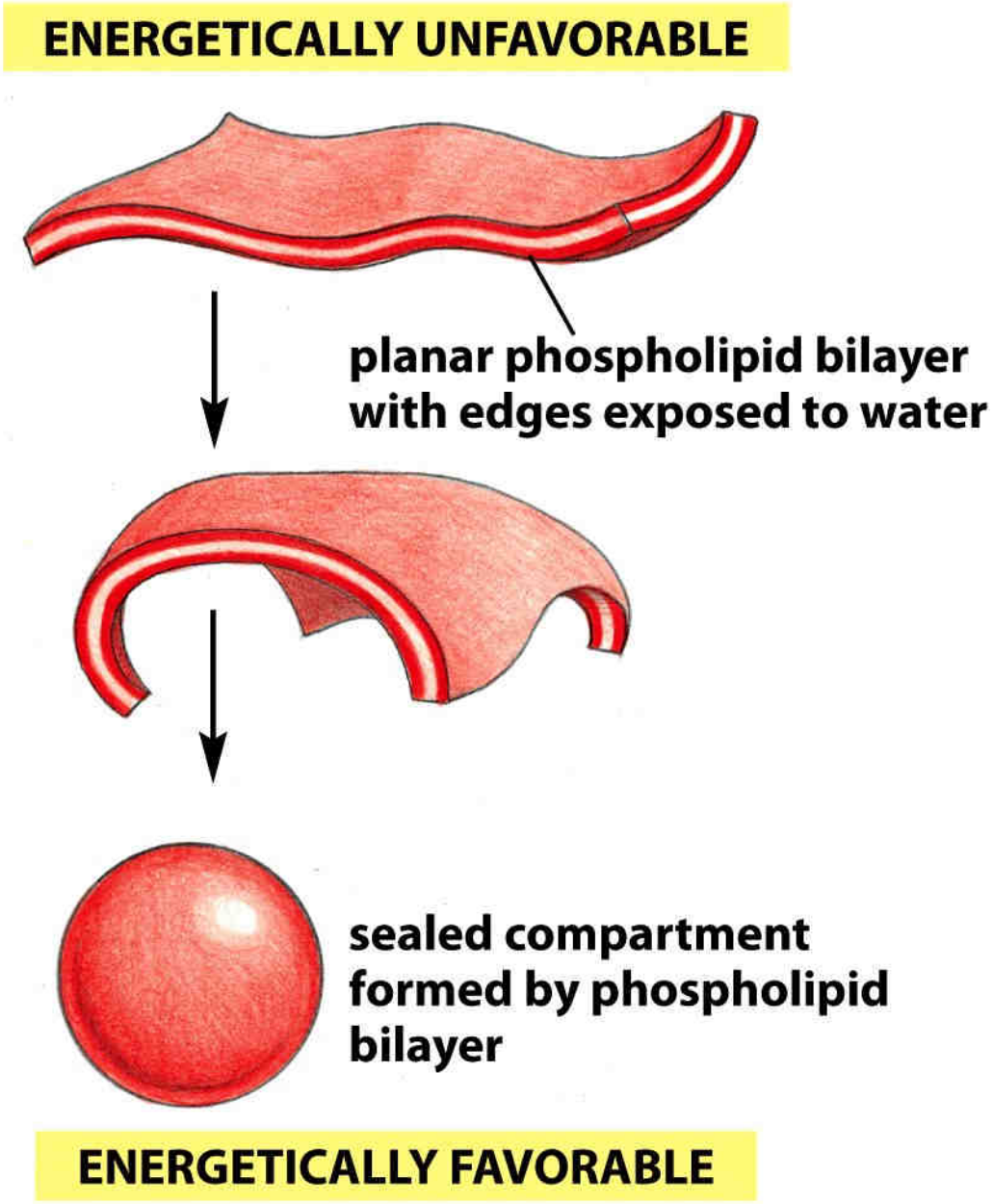


Figure 11-12 *Essential Cell Biology* (© Garland Science 2010)

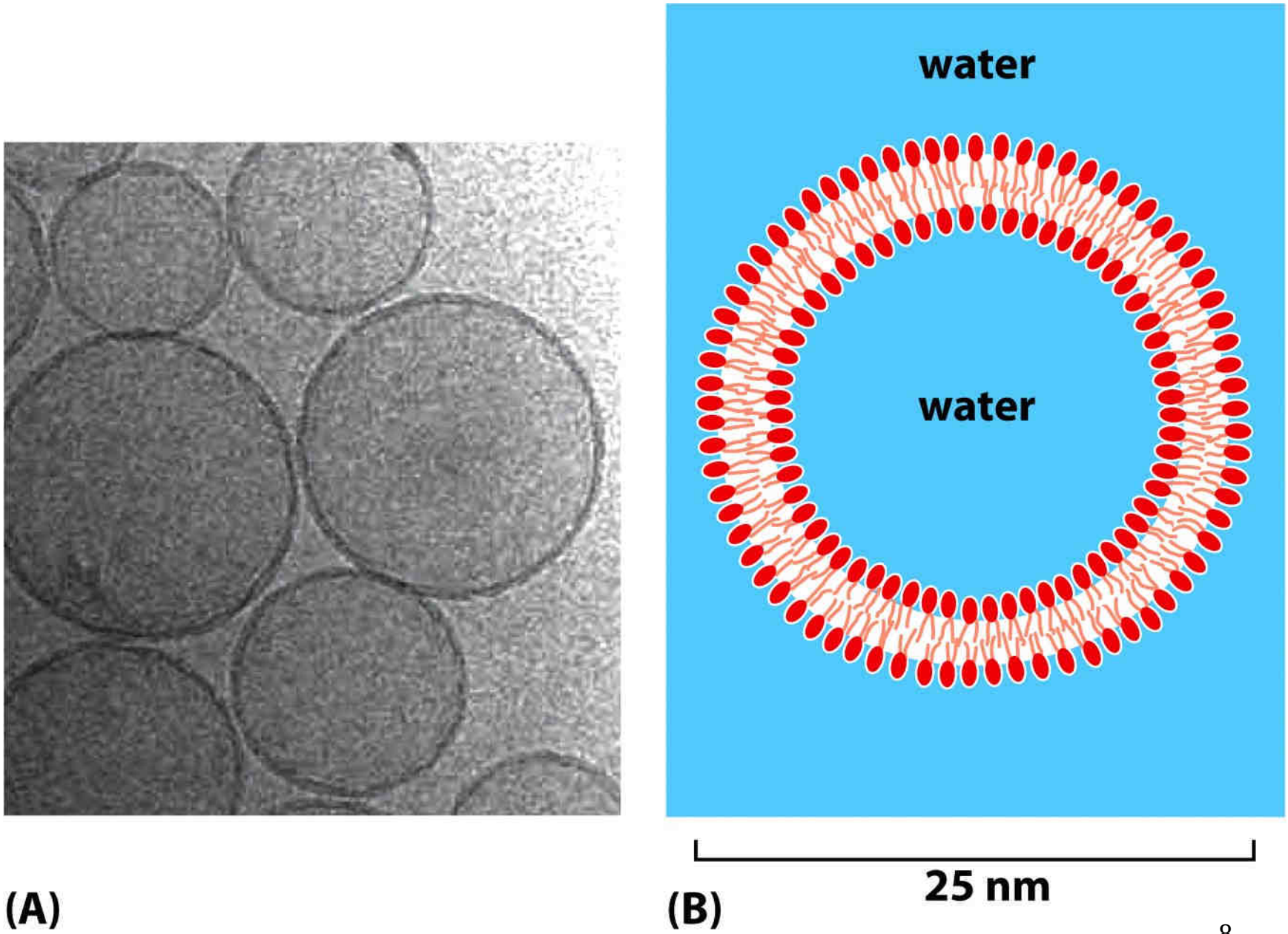


Figure 11-13 *Essential Cell Biology* (© Garland Science 2010)

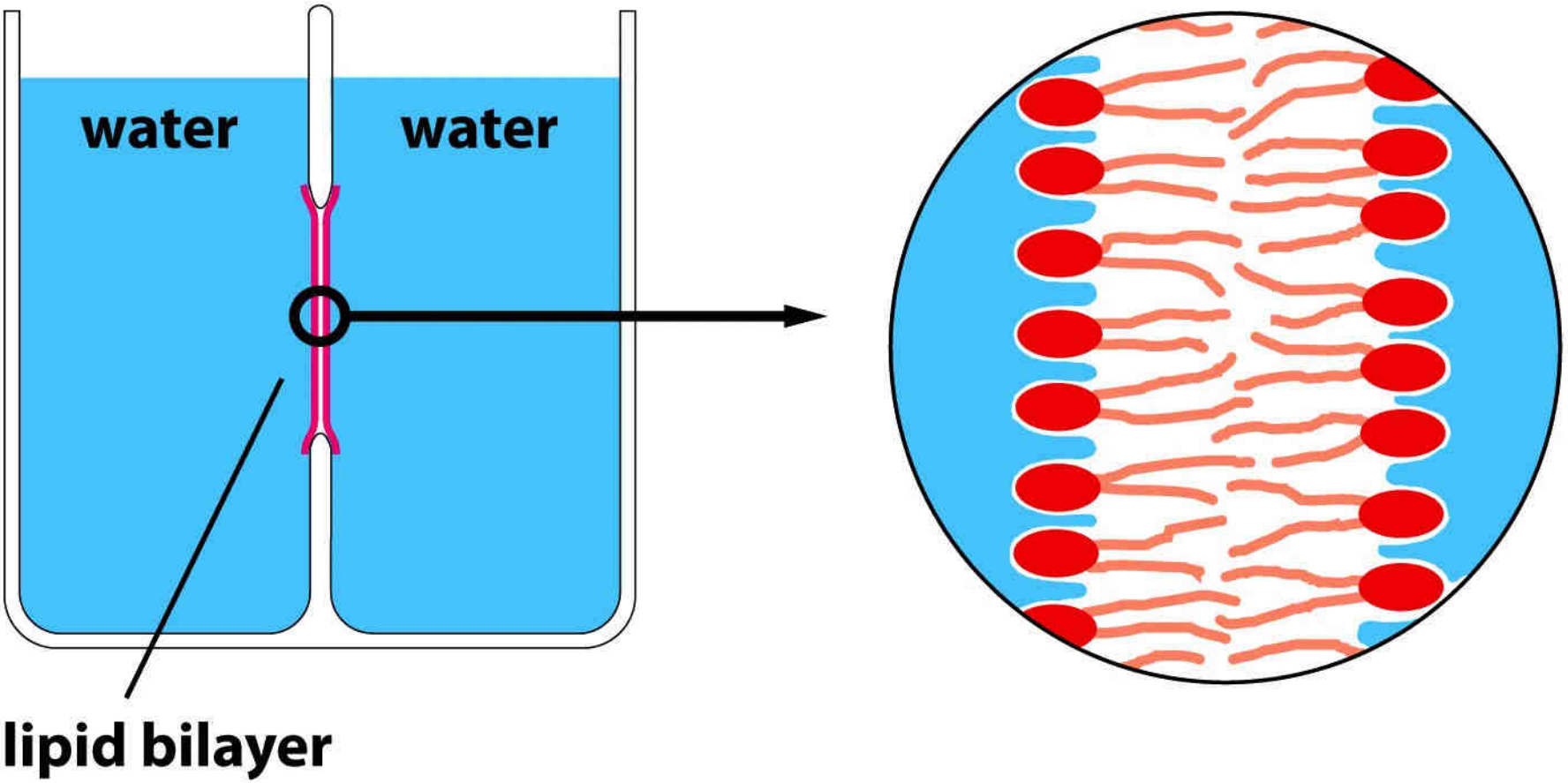


Figure 11-14 *Essential Cell Biology* (© Garland Science 2010)

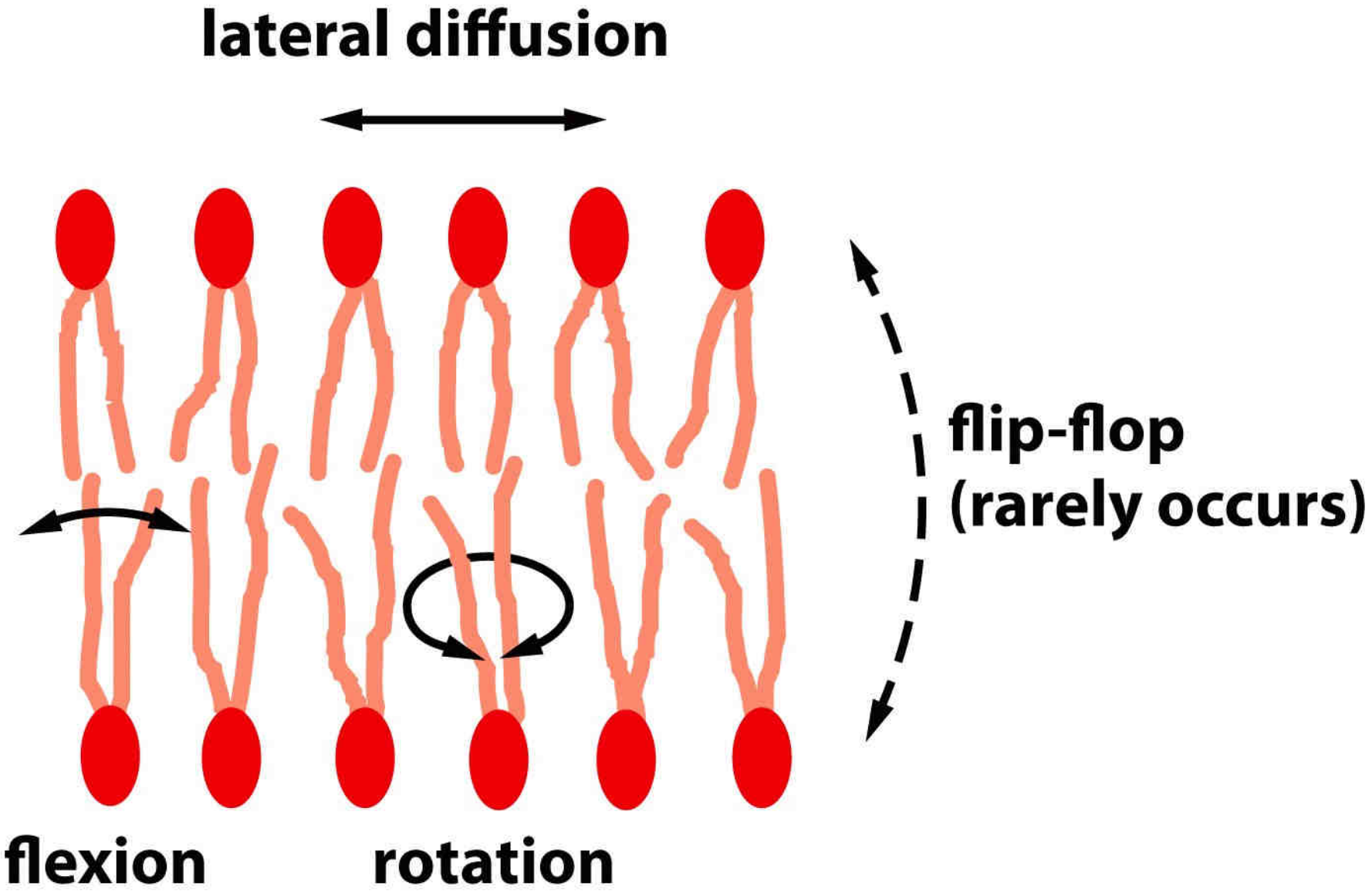


Figure 11-15 *Essential Cell Biology* (© Garland Science 2010)

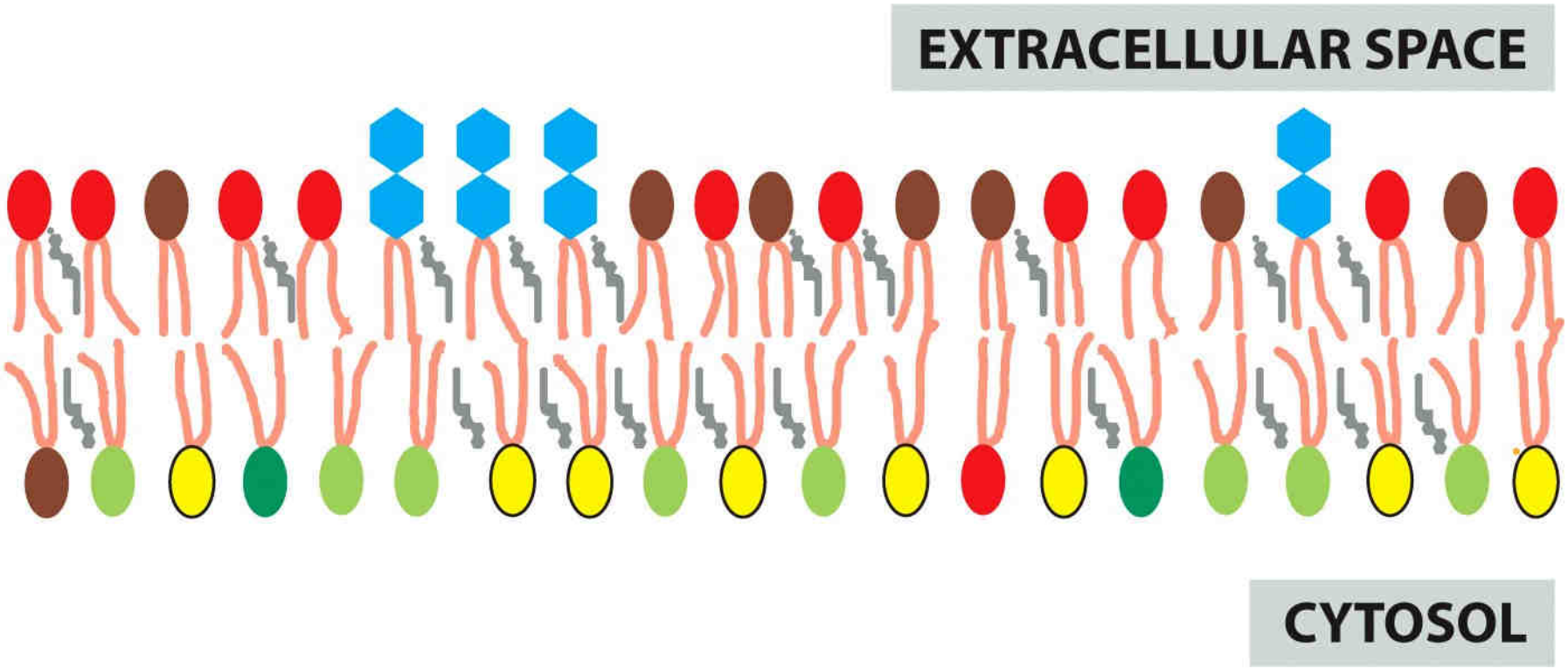


Figure 11-17 *Essential Cell Biology* (© Garland Science 2010)

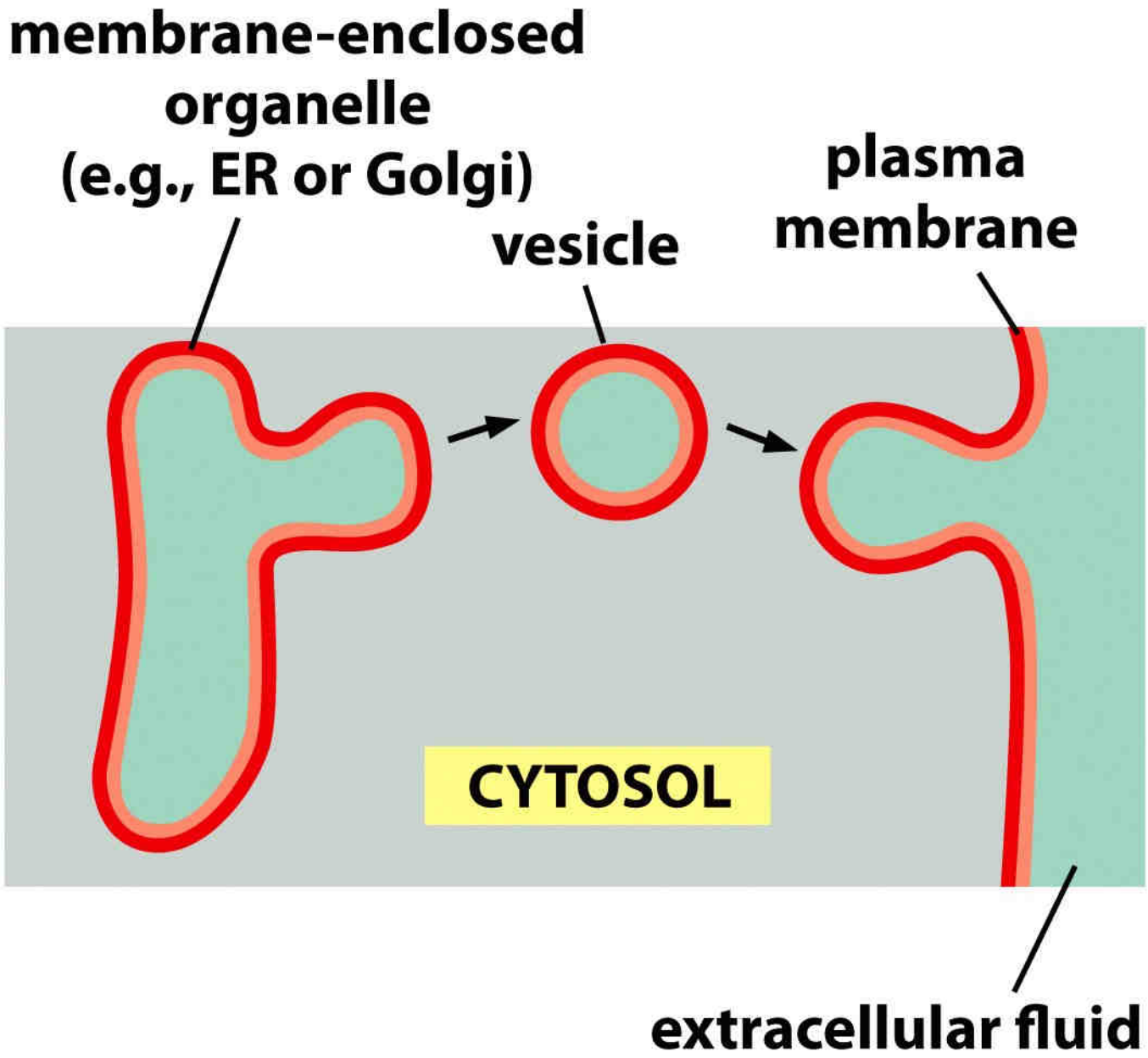


Figure 11-19 *Essential Cell Biology* (© Garland Science 2010)

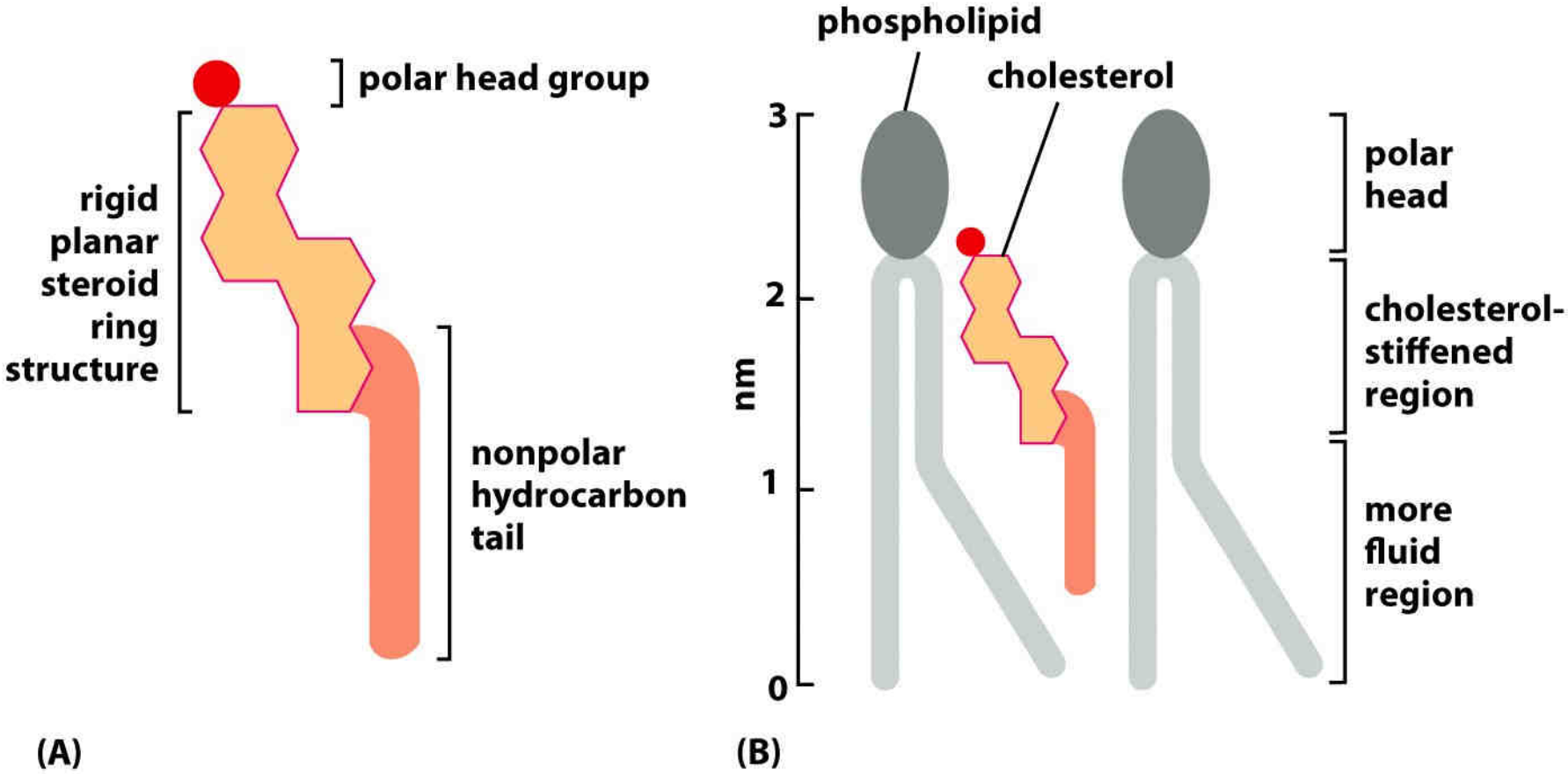
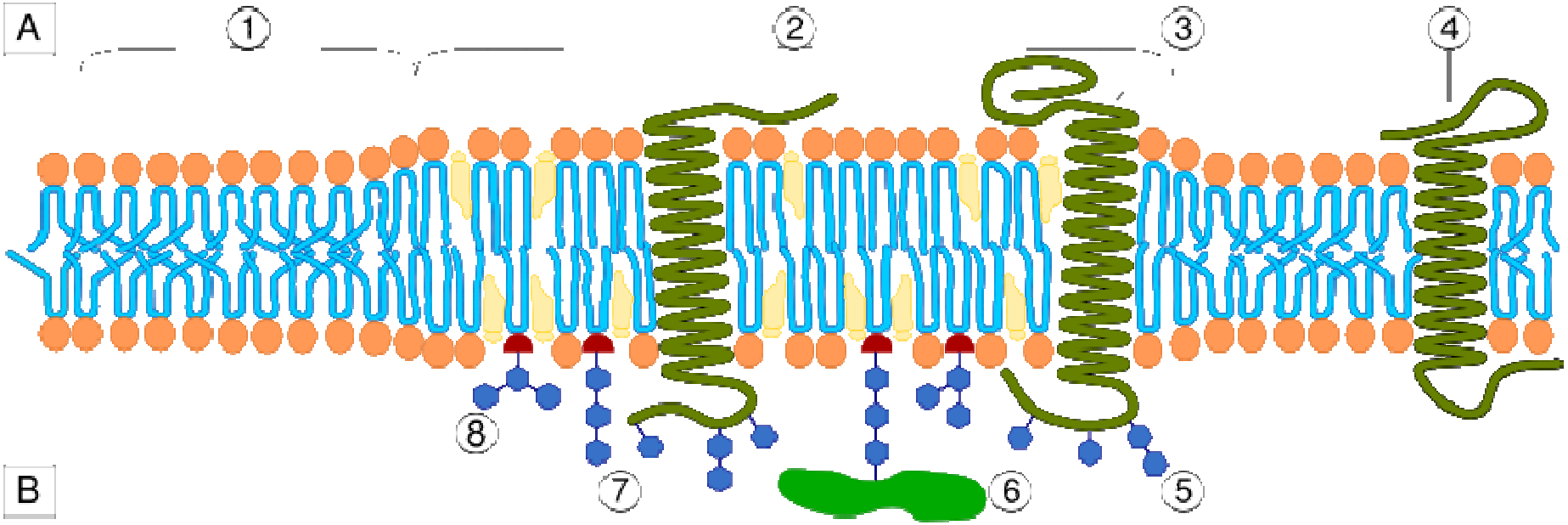


Figure 11-16 *Essential Cell Biology* (© Garland Science 2010)


A
1
2
3
4
8
7
6
5
B

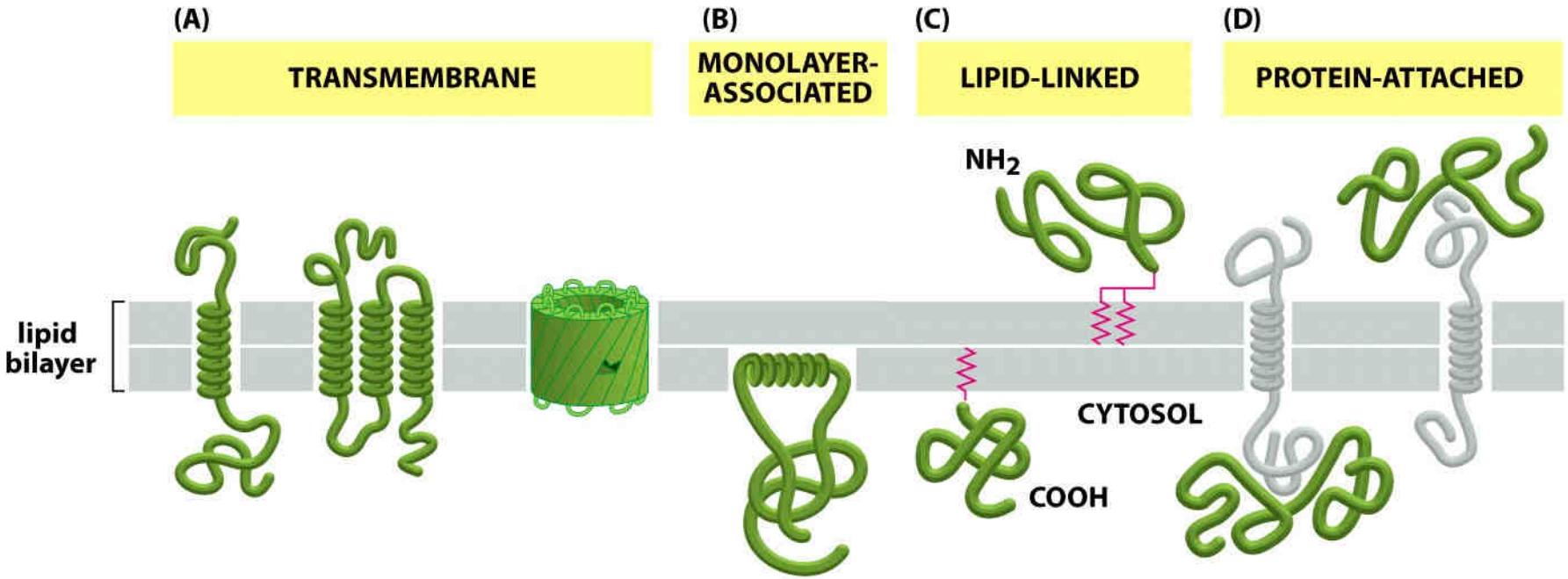


Figure 11-21 *Essential Cell Biology* (© Garland Science 2010)

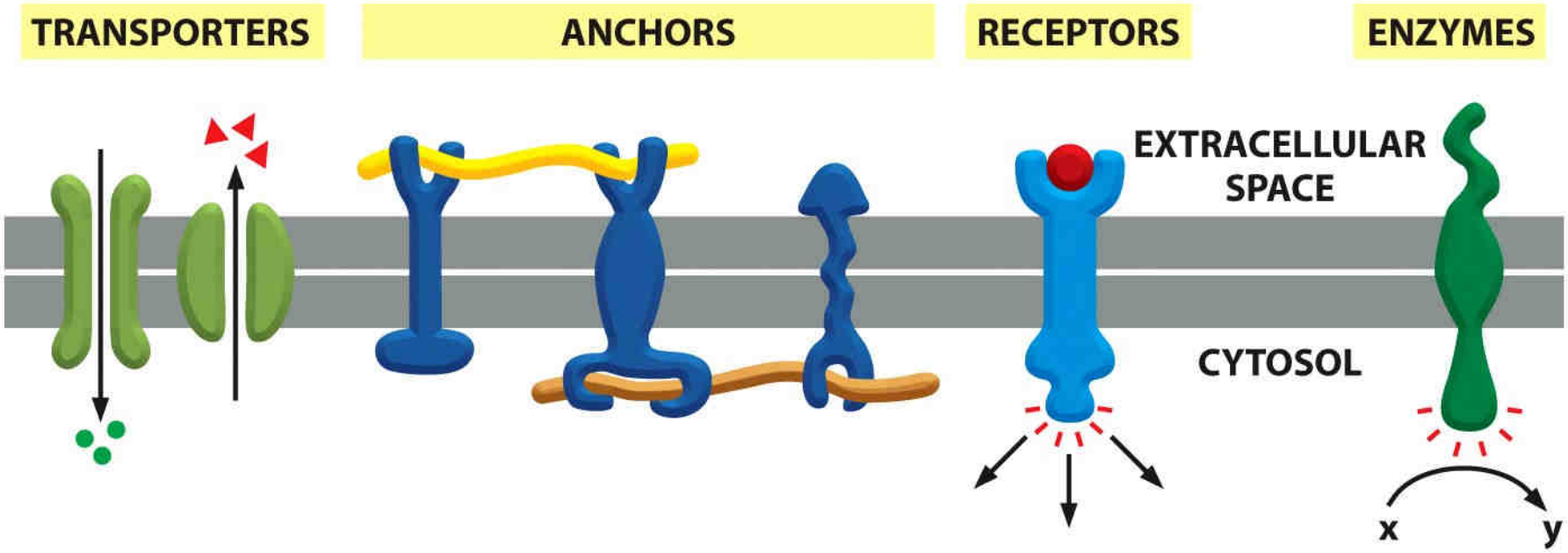
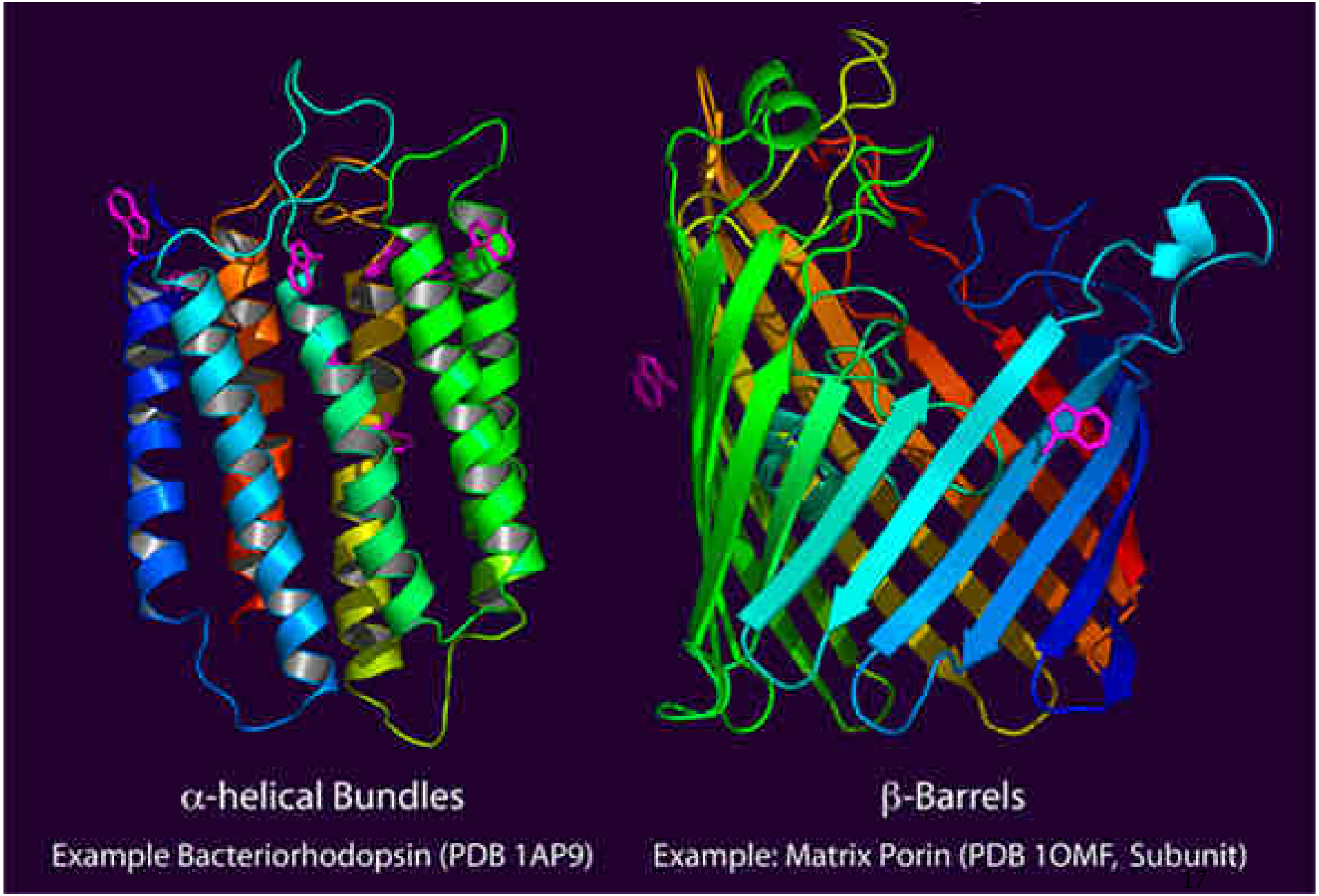


Figure 11-20 *Essential Cell Biology* (© Garland Science 2010)


α-helical Bundles
Example Bacteriorhodopsin (PDB 1AP9)
β-Barrels
Example: Matrix Porin (PDB 1OMF, Subunit)

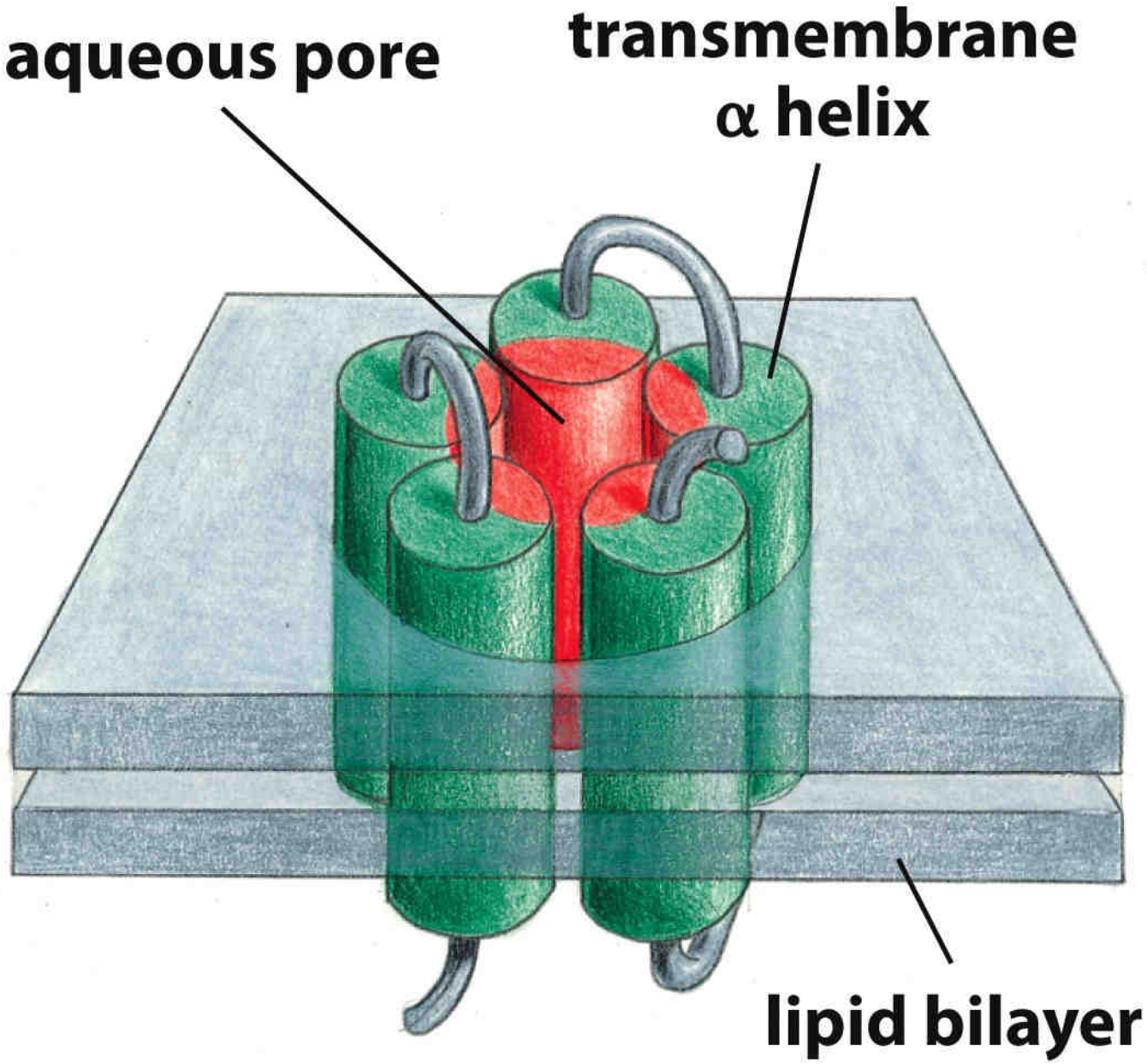


Figure 11-24 *Essential Cell Biology* (© Garland Science 2010)

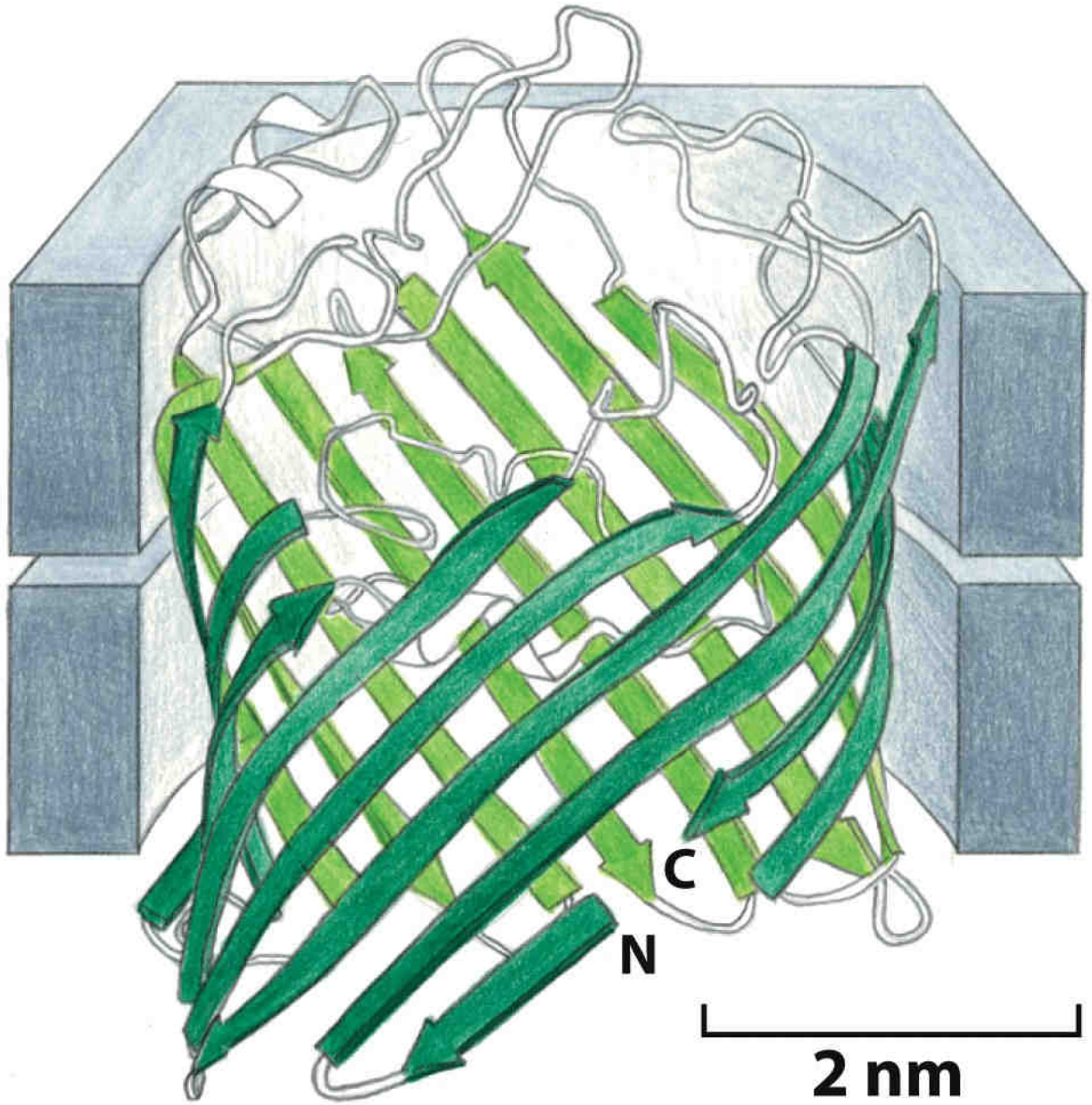
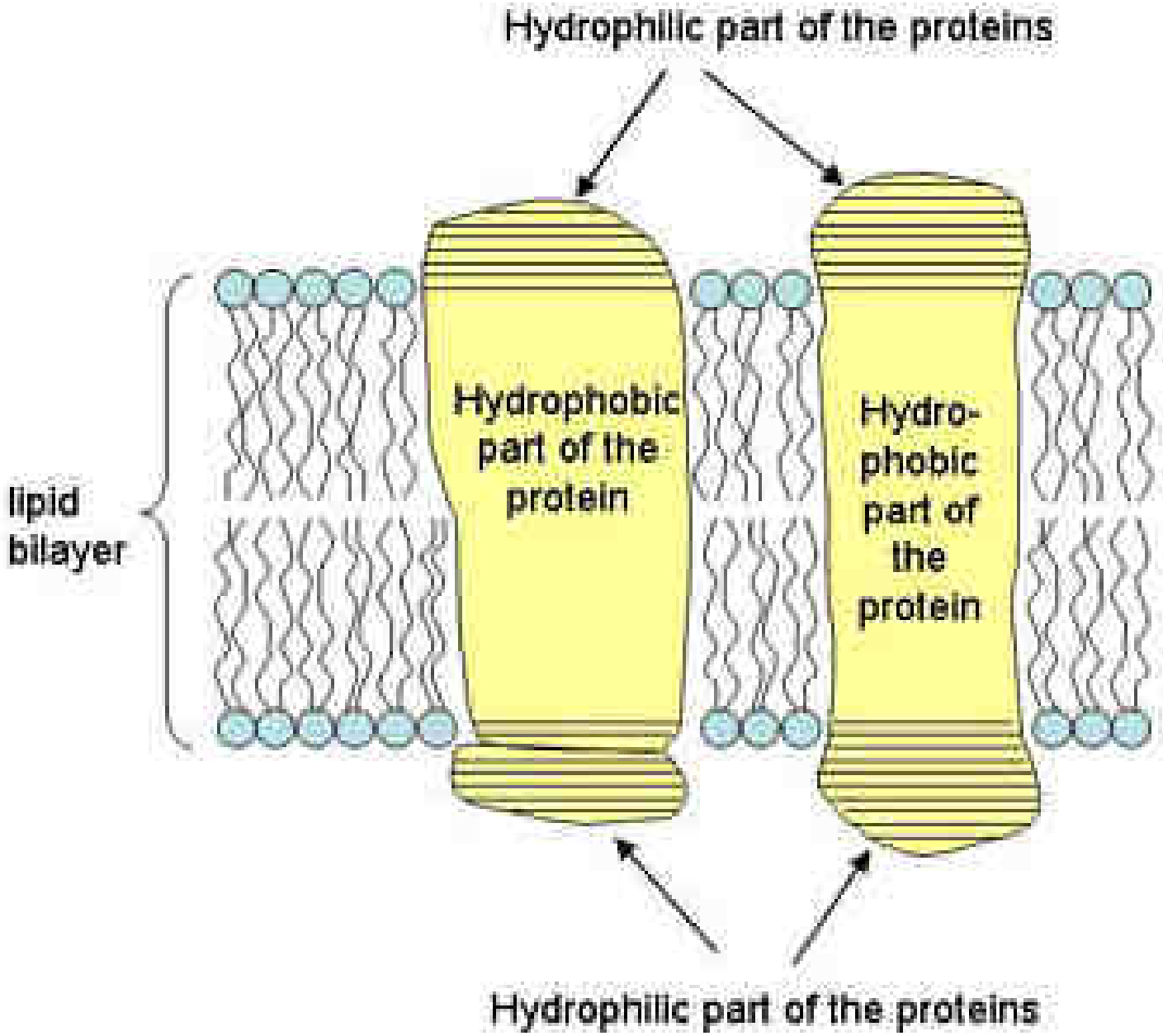
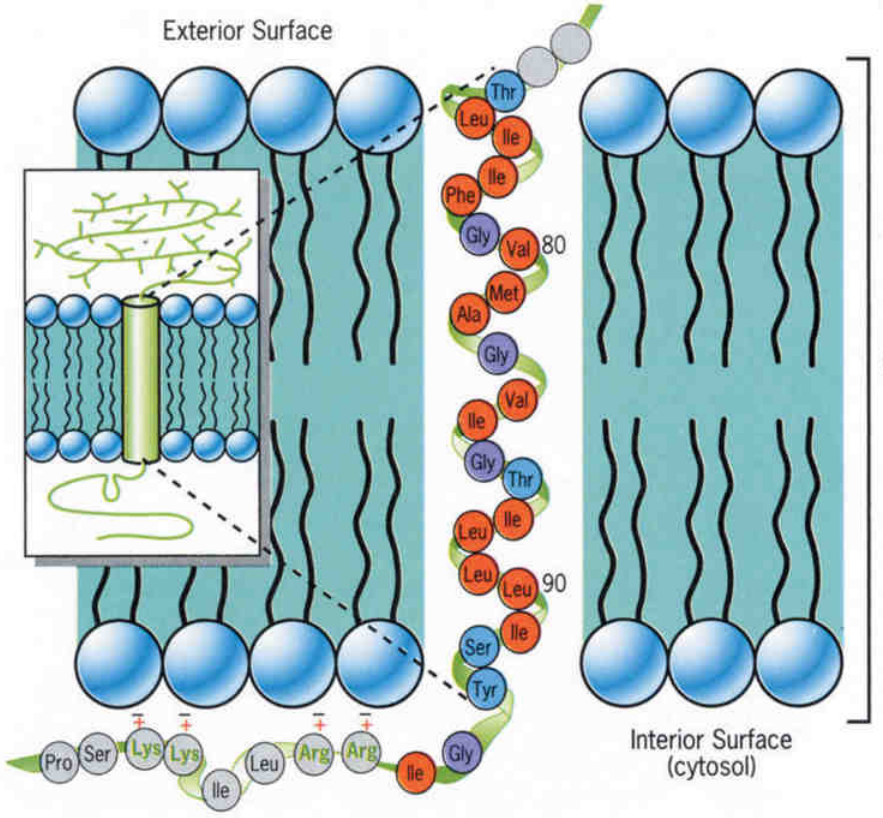
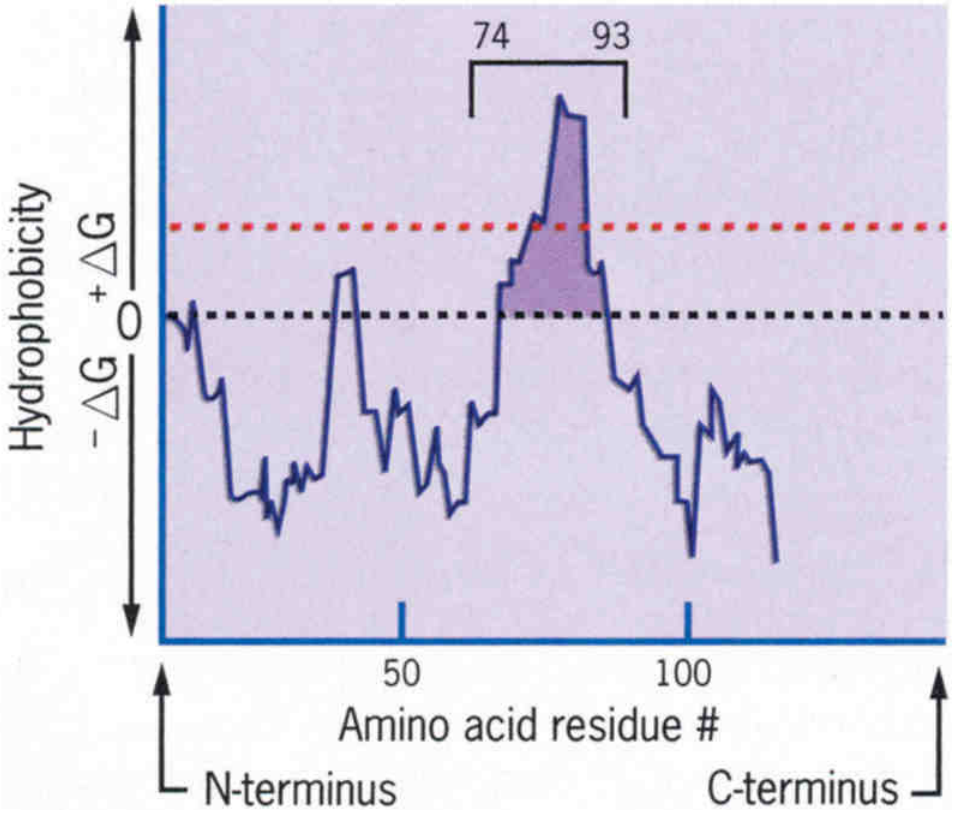


Figure 11-25 *Essential Cell Biology* (© Garland Science 2010)


Hydrophilic part of the proteins
lipid bilayer
Hydrophobic part of the protein
Hydro-phobic part of the protein
Hydrophilic part of the proteins


Exterior Surface
Thr
Leu
Ile
Ile
Phe
Gly
Val
80
Met
Ala
Gly
Val
Ile
Gly
Thr
Ile
Leu
Leu
Leu
90
Ile
Ser
Tyr
Pro
Ser
Lys
Lys
Leu
Arg
Arg
Ile
Gly
Ile
Bilayer
Interior Surface
(cytosol)


74
93
Hydrophobicity
+ΔG
0
-ΔG
50
100
Amino acid residue #
N-terminus
C-terminus

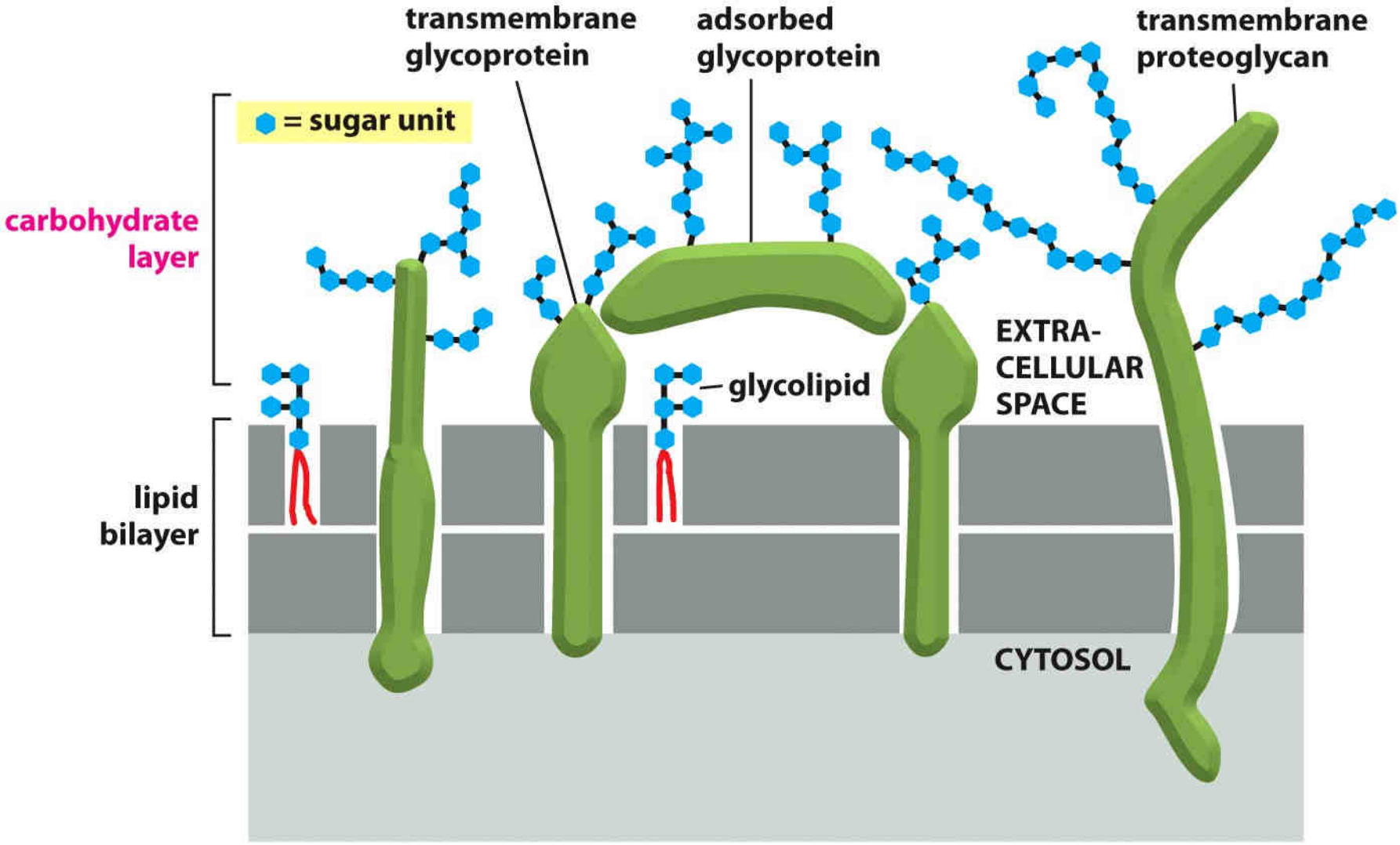


Figure 11-35 *Essential Cell Biology* (© Garland Science 2010)

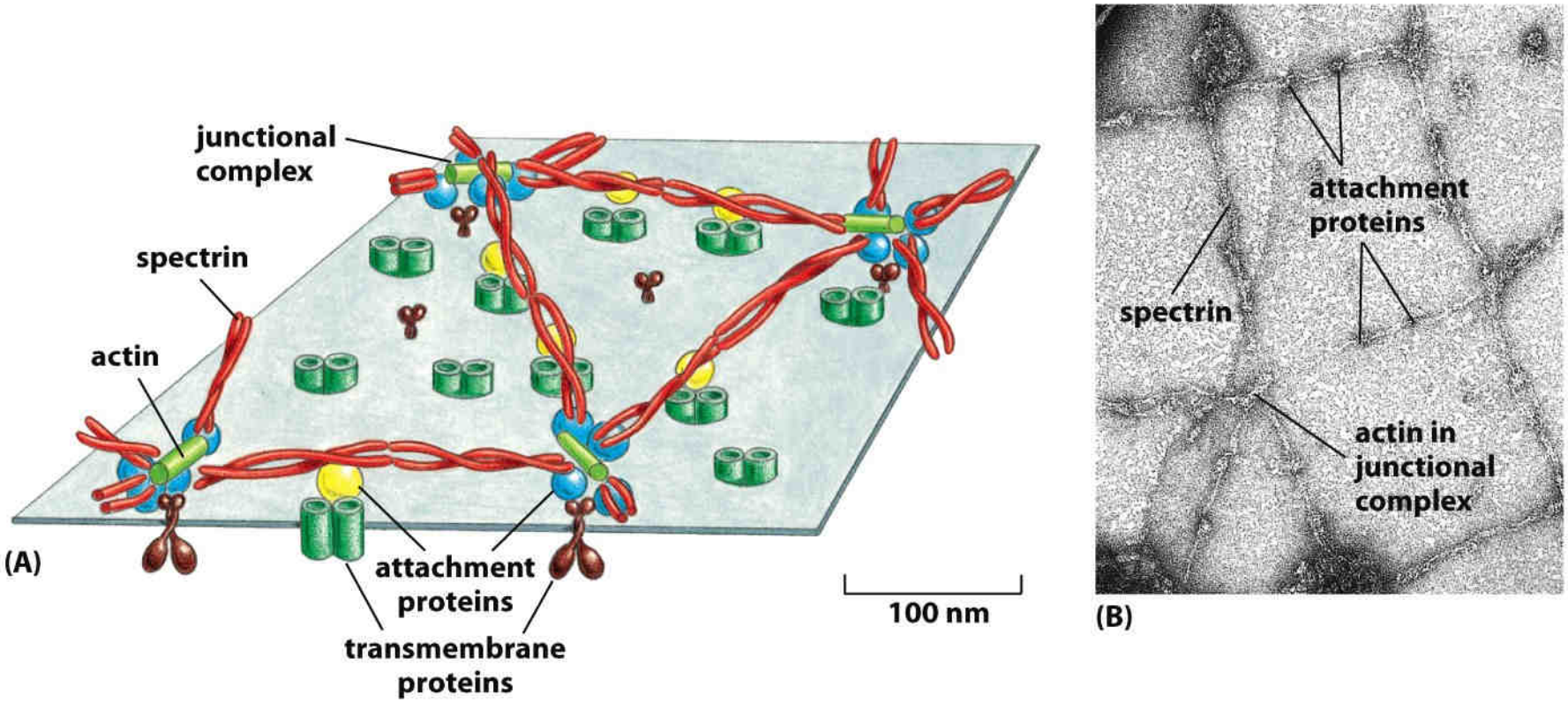


Figure 11-31 *Essential Cell Biology* (© Garland Science 2010)

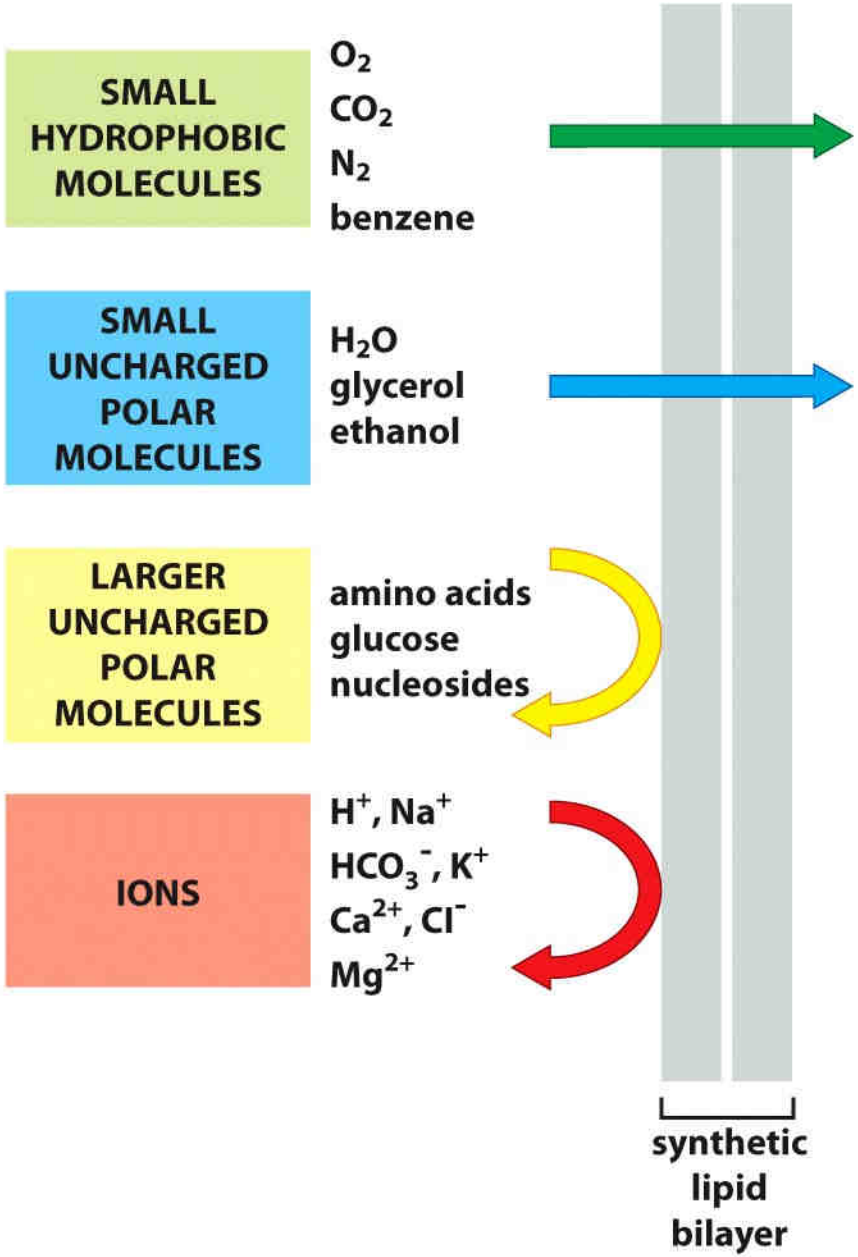


Figure 12-2 *Essential Cell Biology* (© Garland Science 2010)

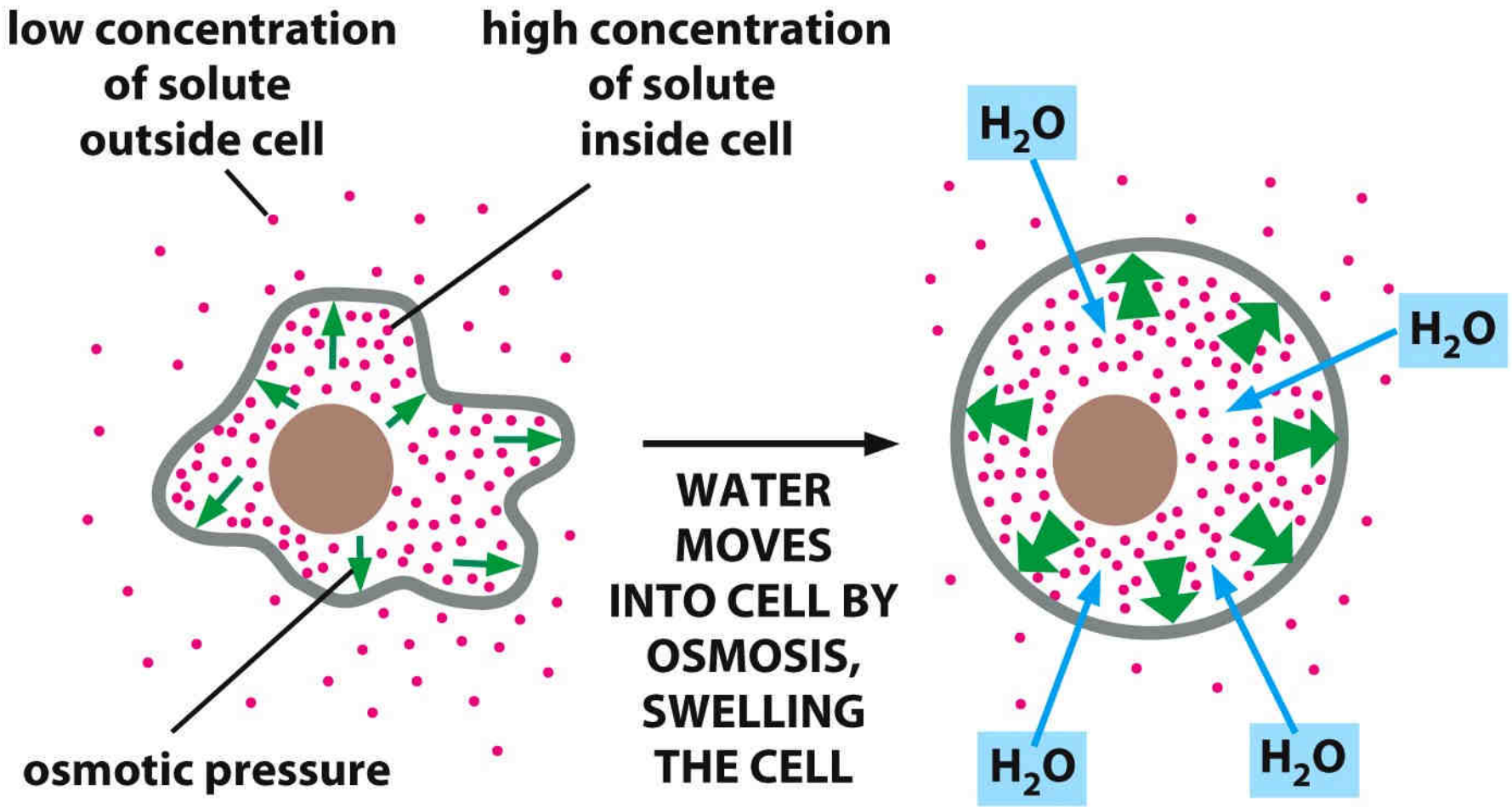


Figure 12-12 *Essential Cell Biology* (© Garland Science 2010)

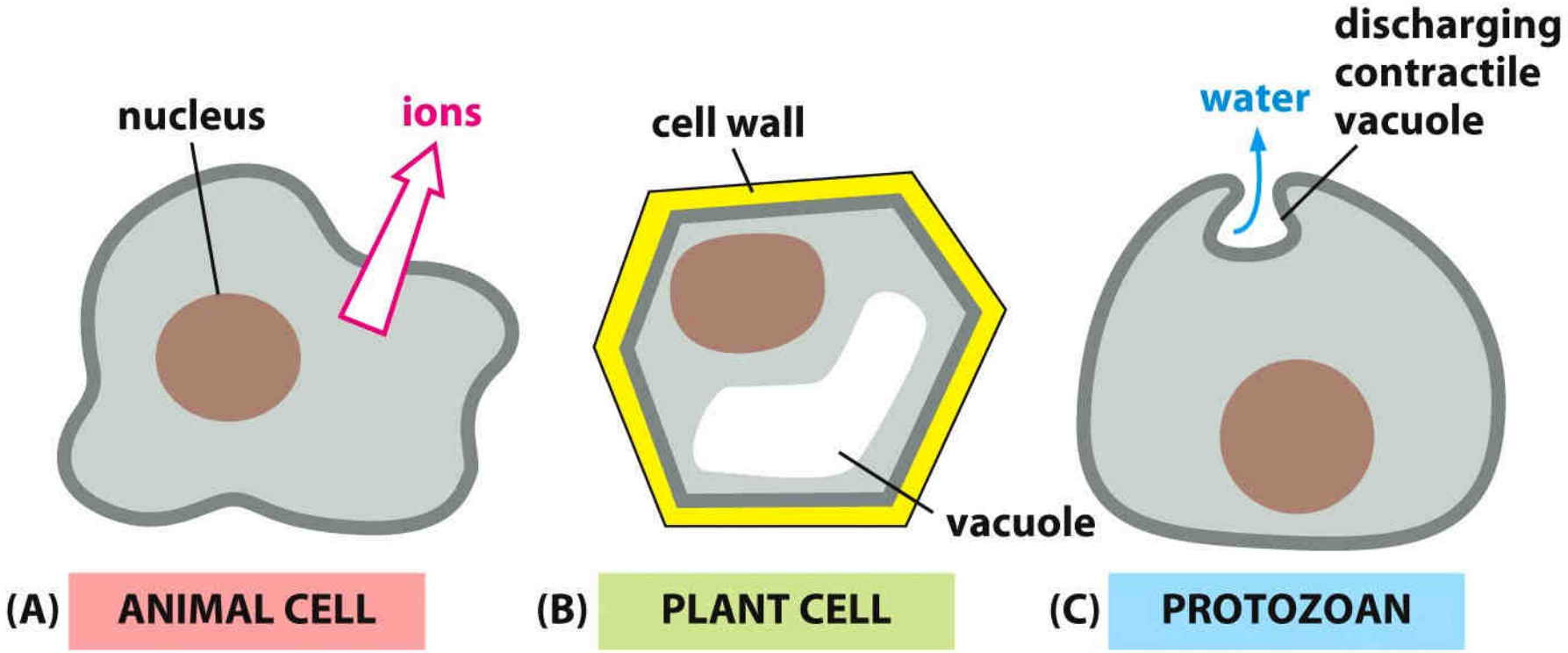


Figure 12-13 *Essential Cell Biology* (© Garland Science 2010)

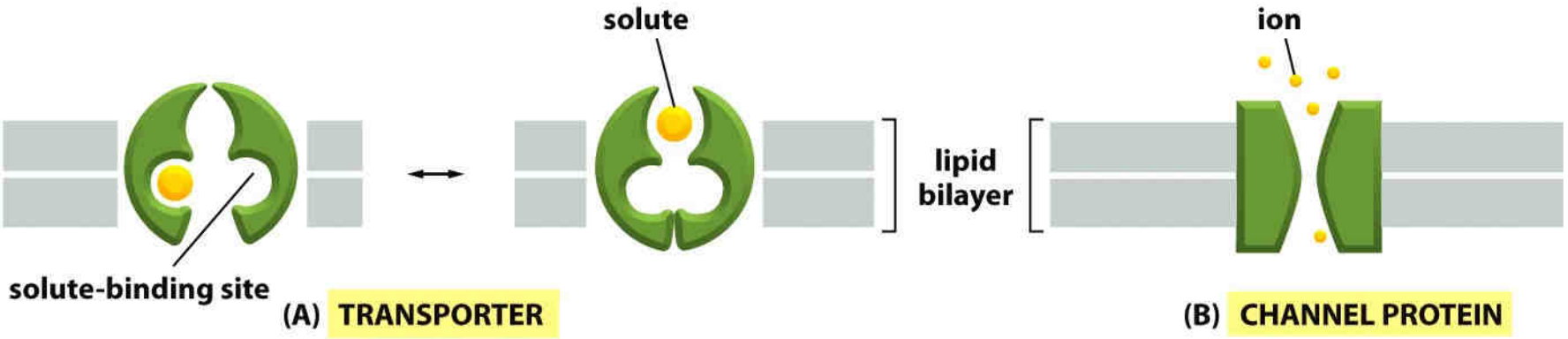


Figure 12-3 *Essential Cell Biology* (© Garland Science 2010)

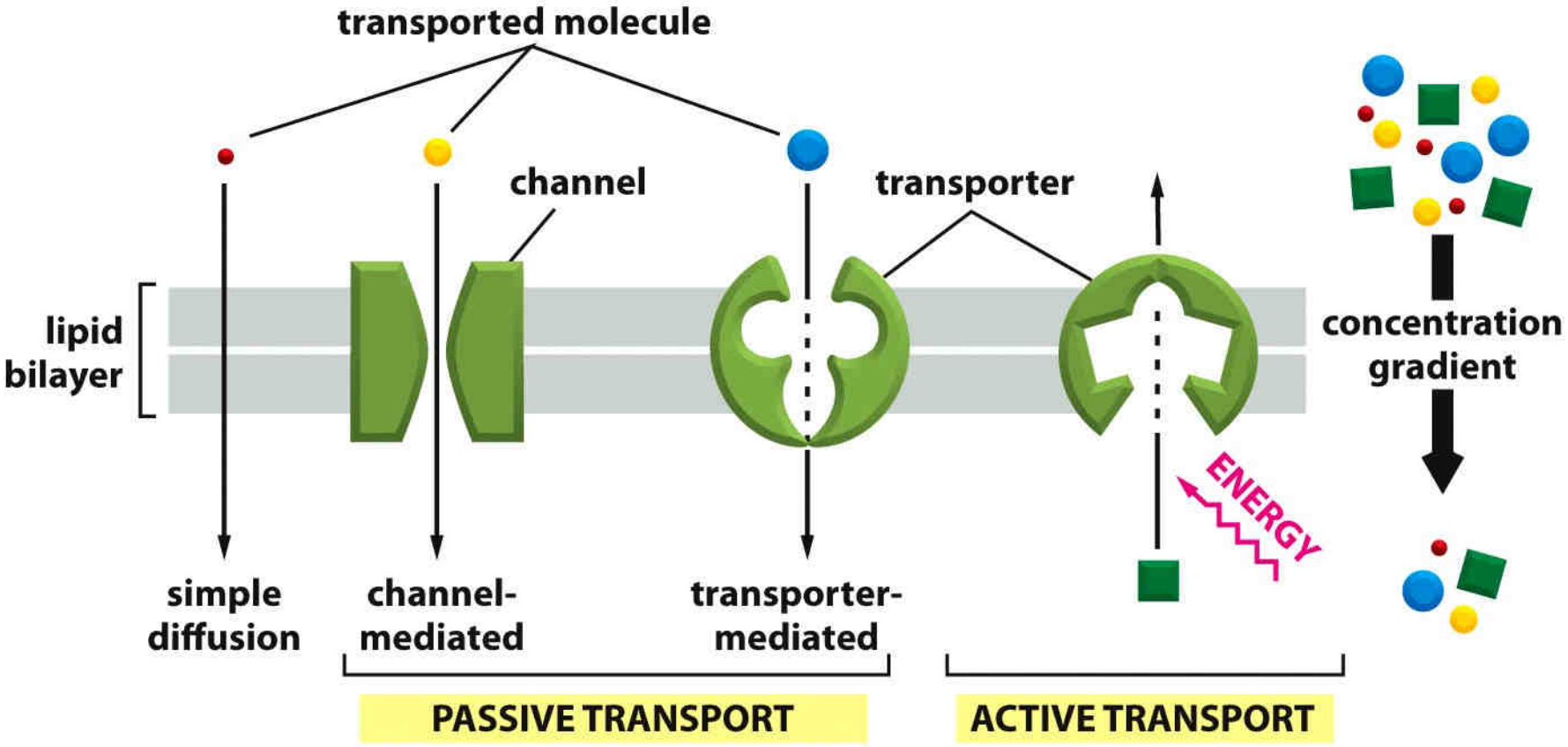


Figure 12-4 *Essential Cell Biology* (© Garland Science 2010)

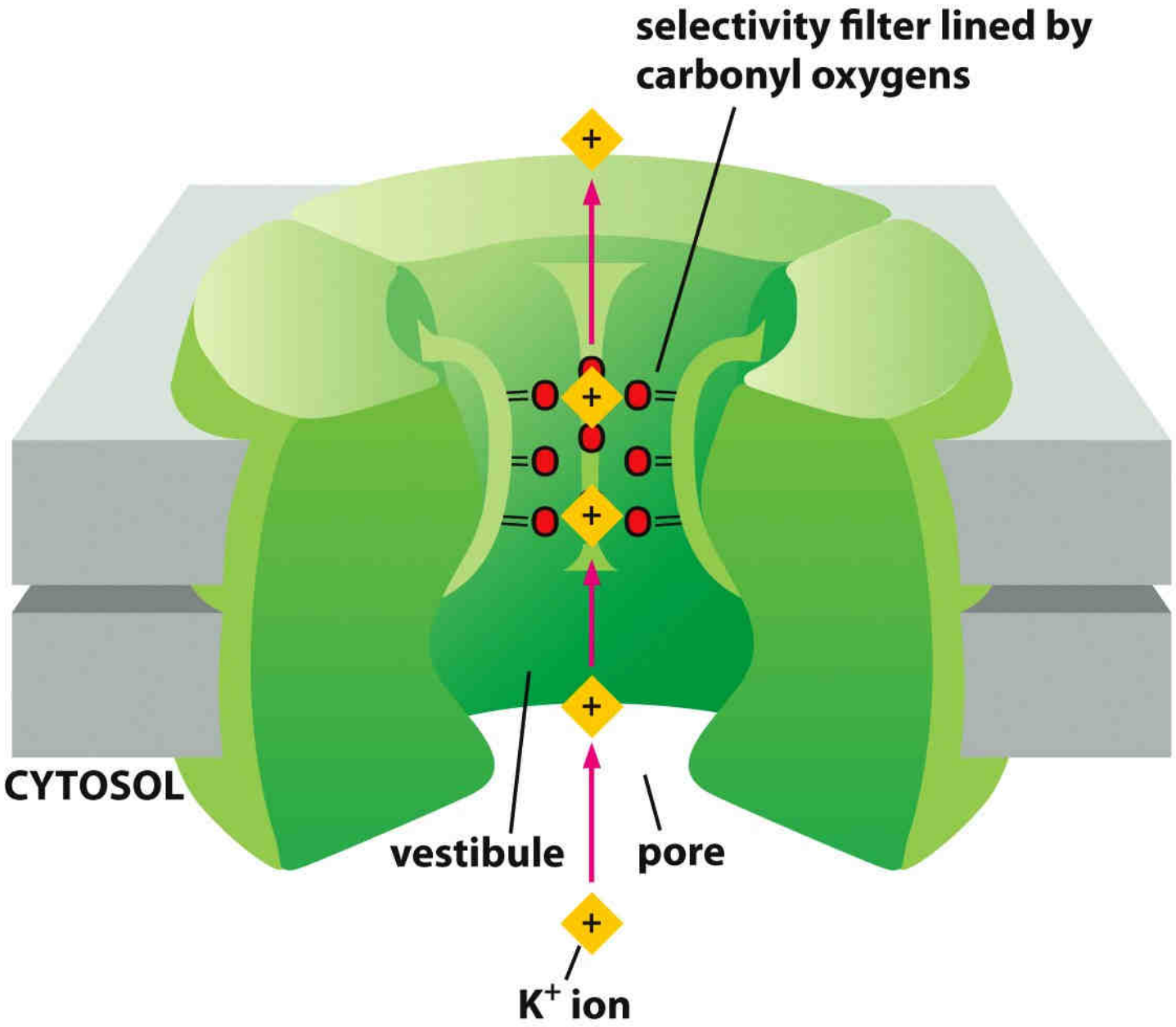


Figure 12-20 *Essential Cell Biology* (© Garland Science 2010)

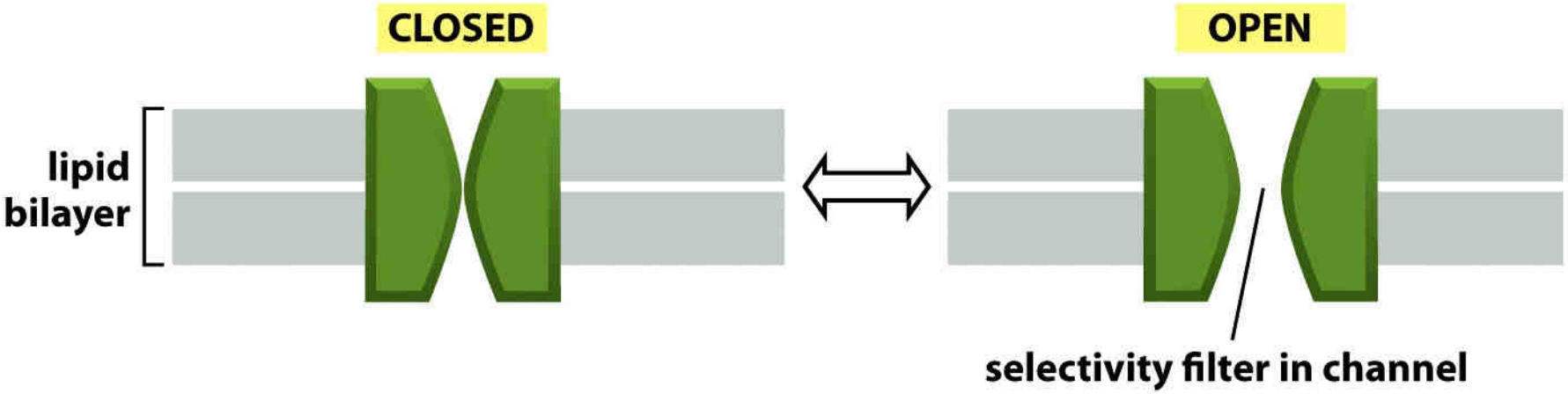


Figure 12-21 *Essential Cell Biology* (© Garland Science 2010)

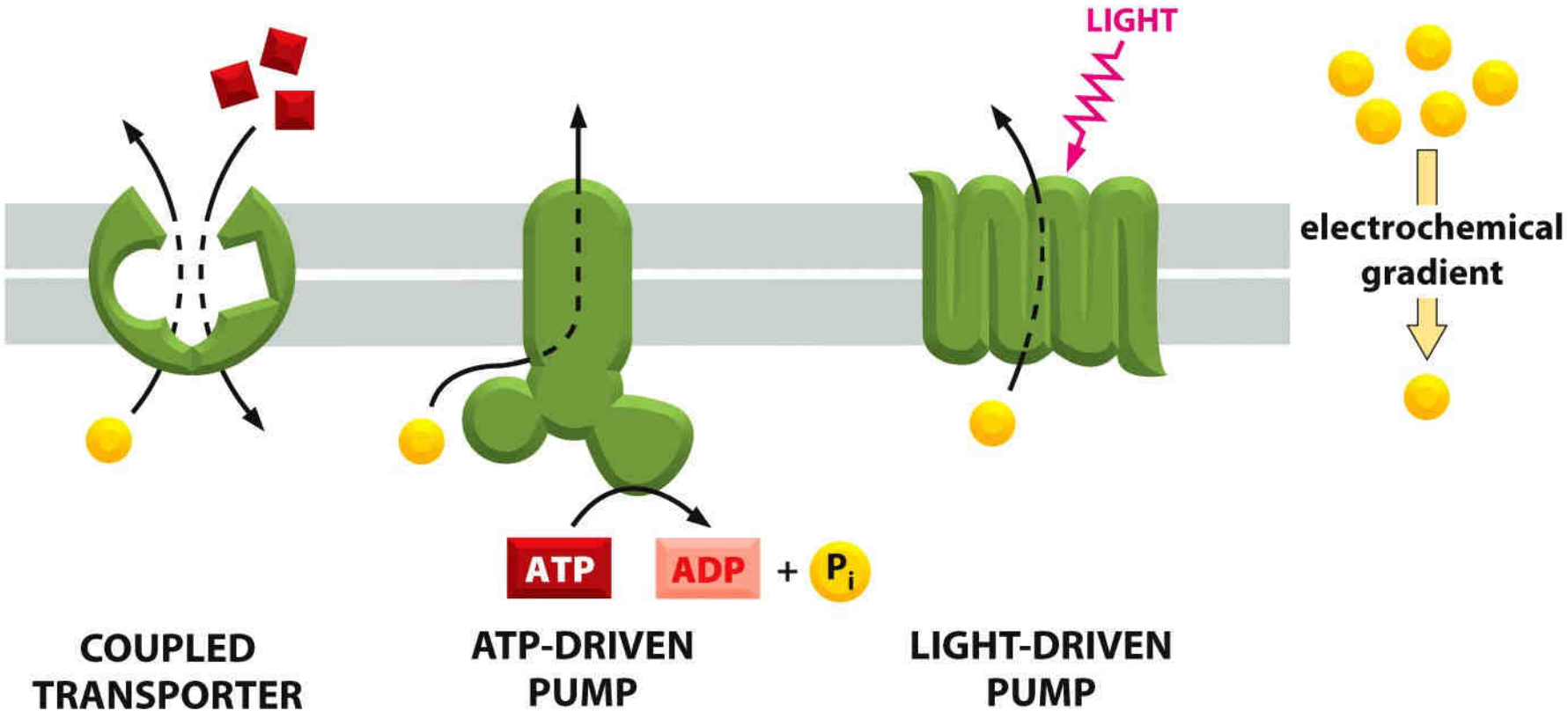


Figure 12-8 *Essential Cell Biology* (© Garland Science 2010)

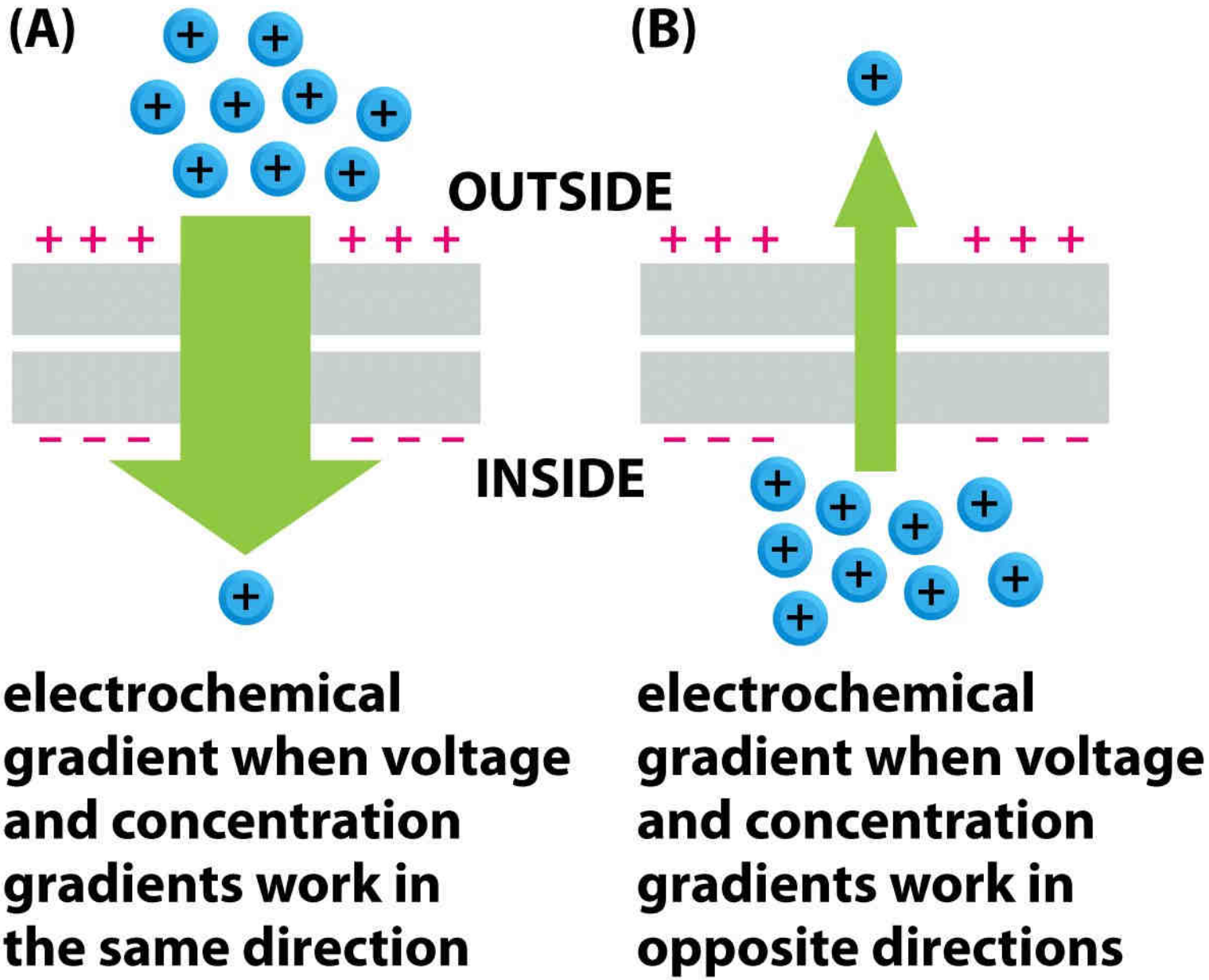


Figure 12-7 *Essential Cell Biology* (© Garland Science 2010)

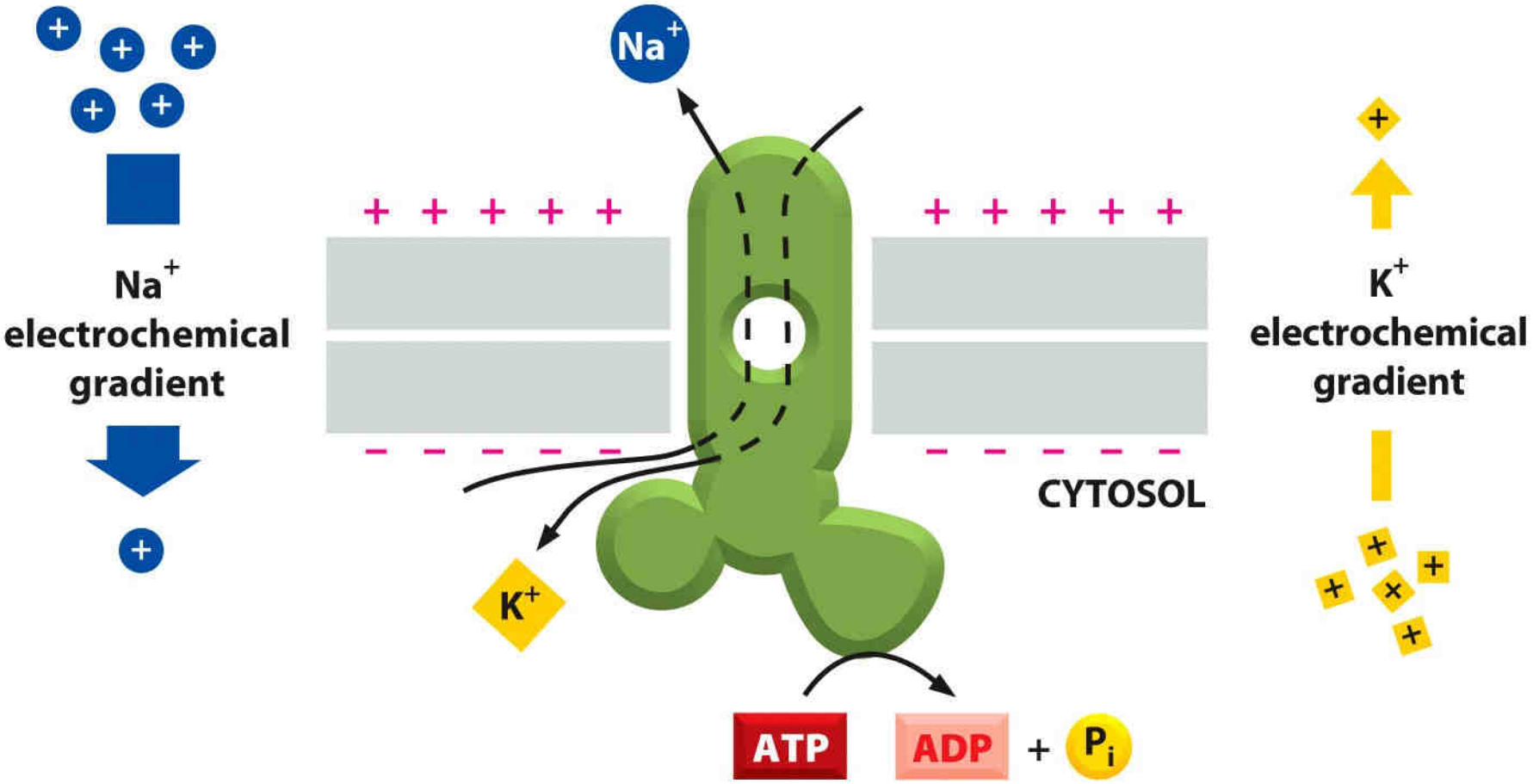


Figure 12-9 *Essential Cell Biology* (© Garland Science 2010)

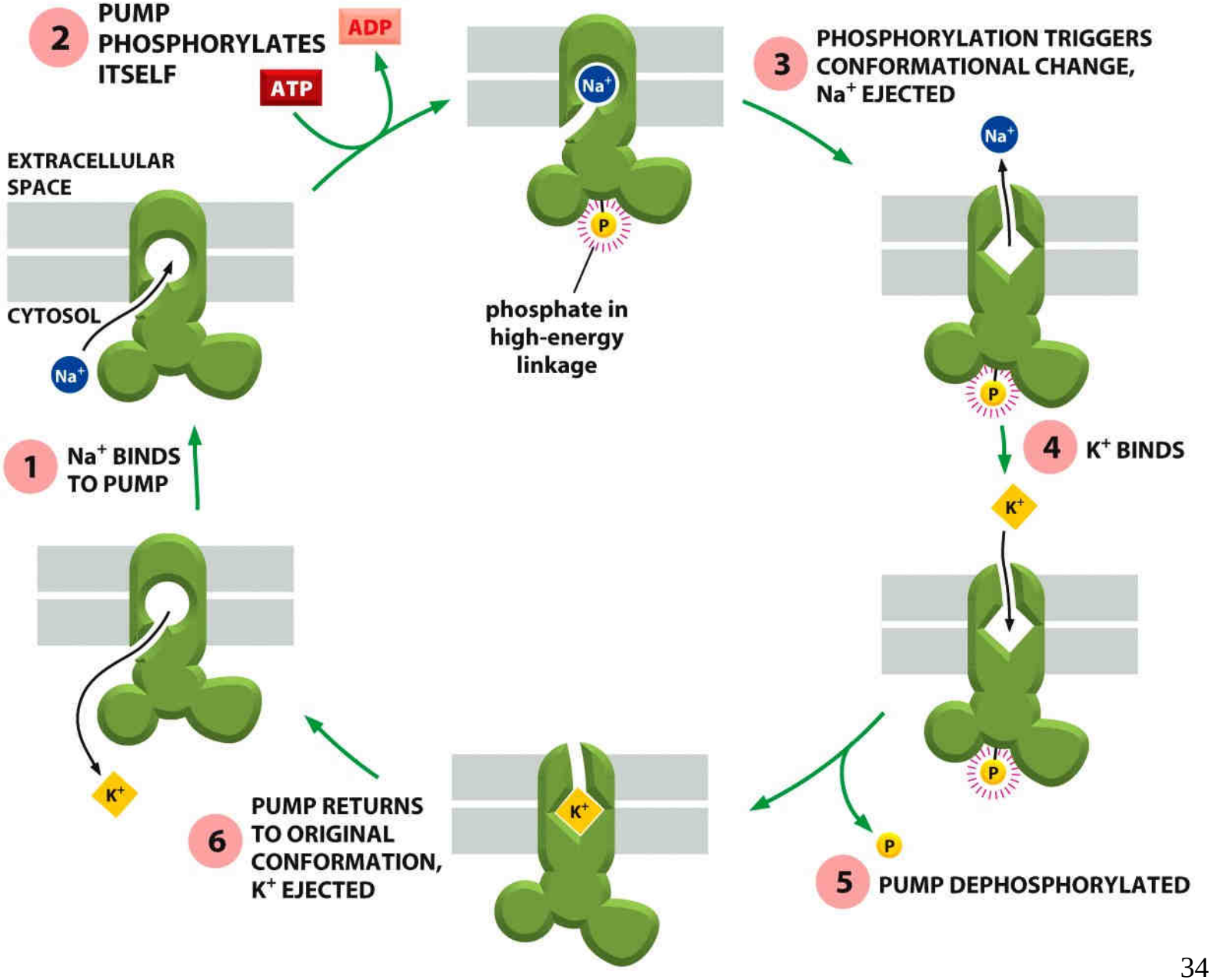


Figure 12-11 *Essential Cell Biology* (© Garland Science 2010)

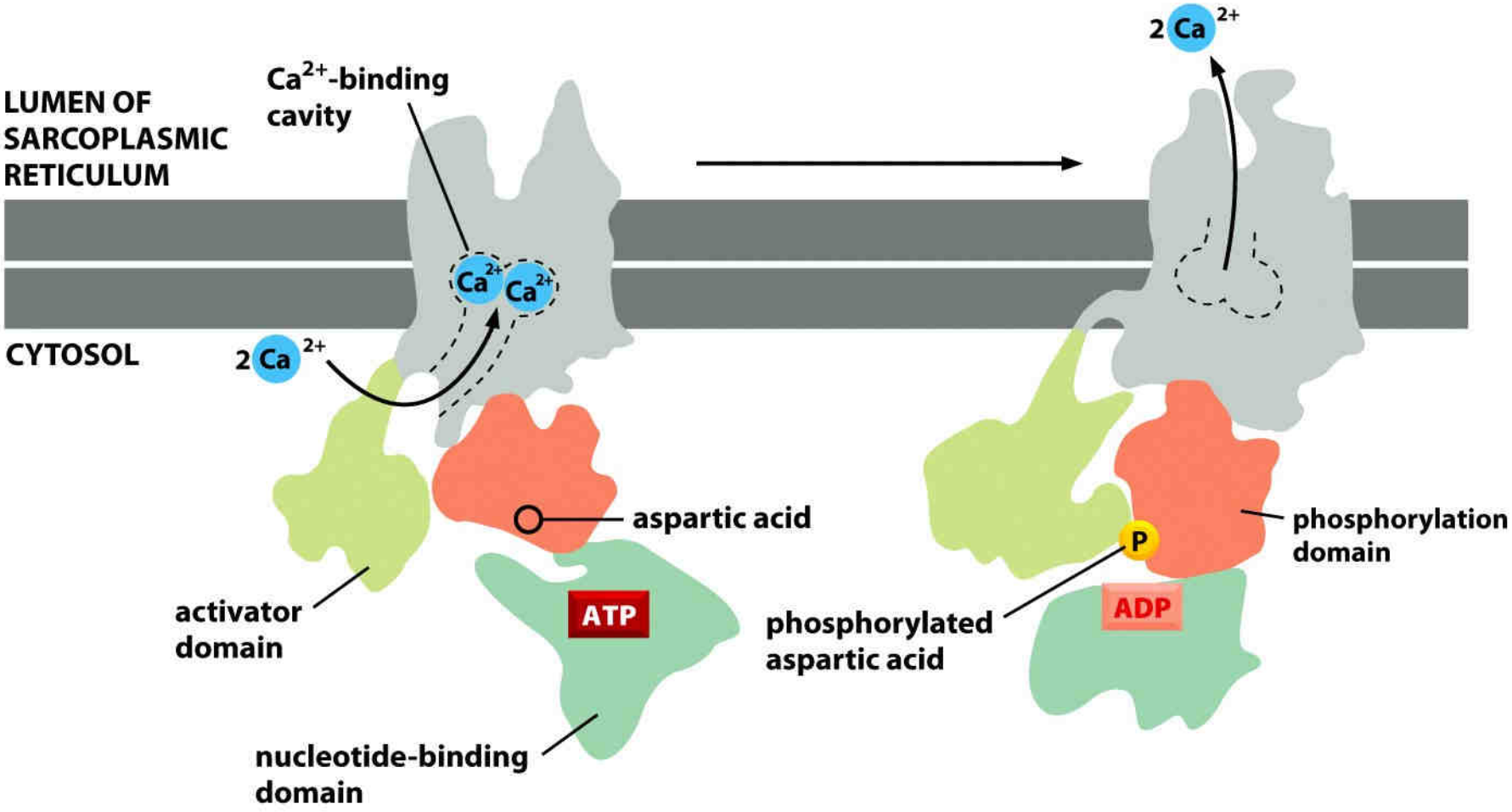


Figure 12-15 *Essential Cell Biology* (© Garland Science 2010)

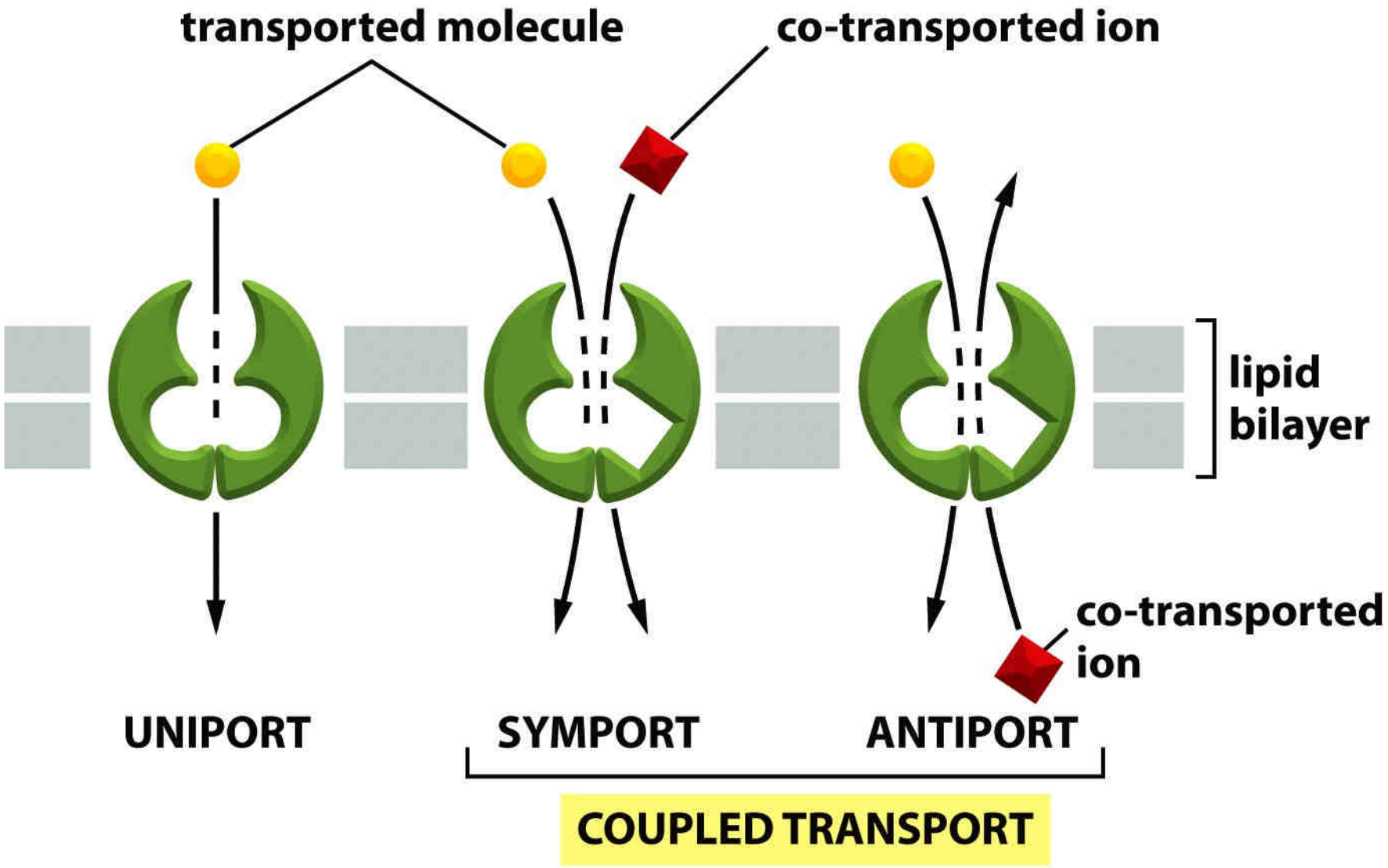


Figure 12-16 *Essential Cell Biology* (© Garland Science 2010)

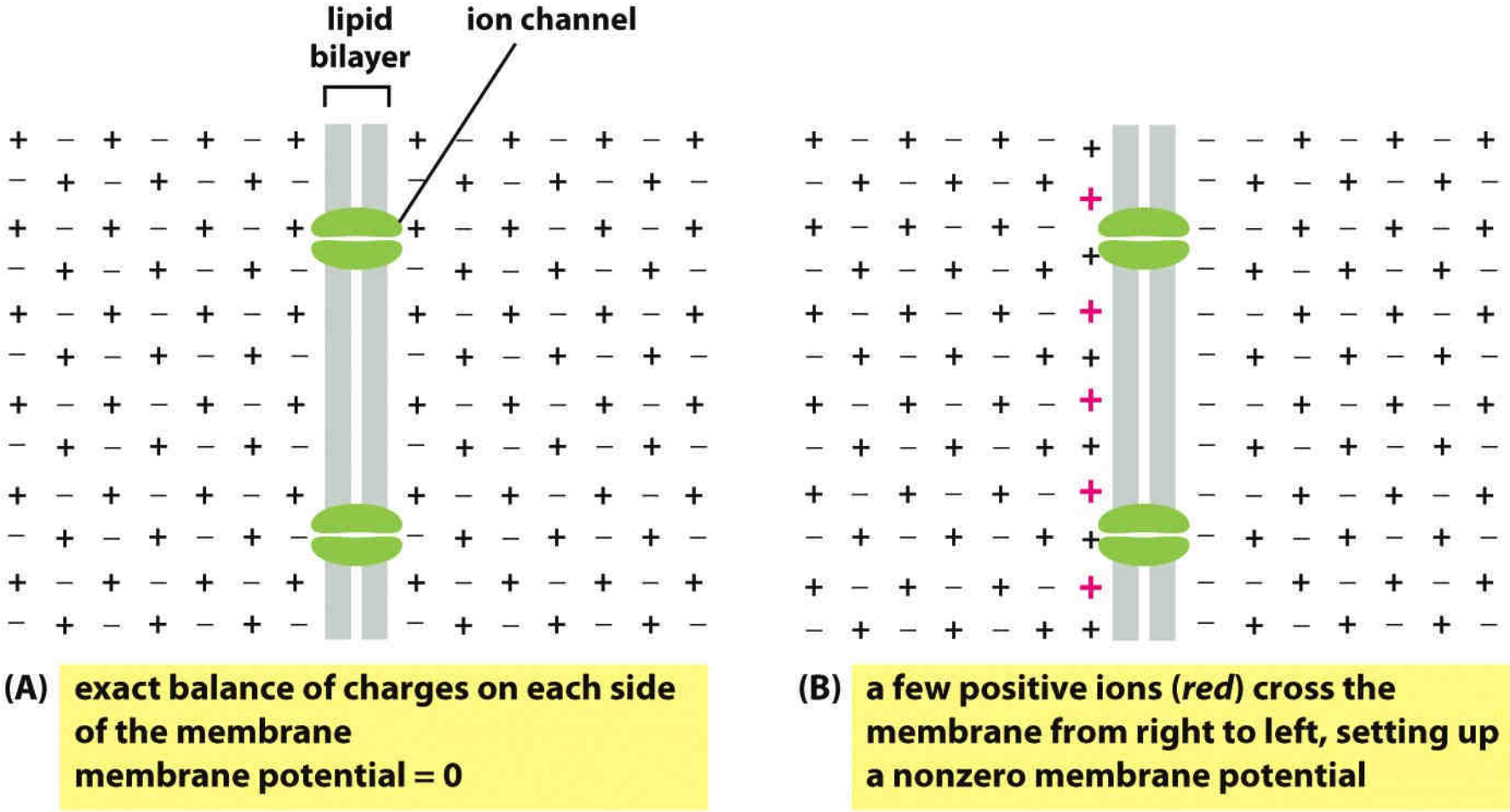
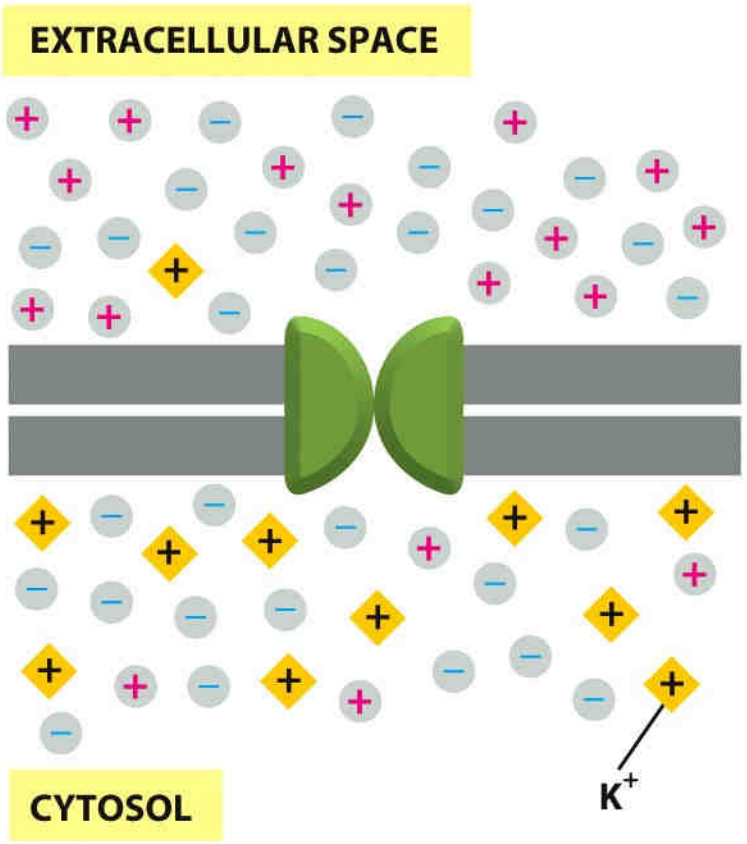
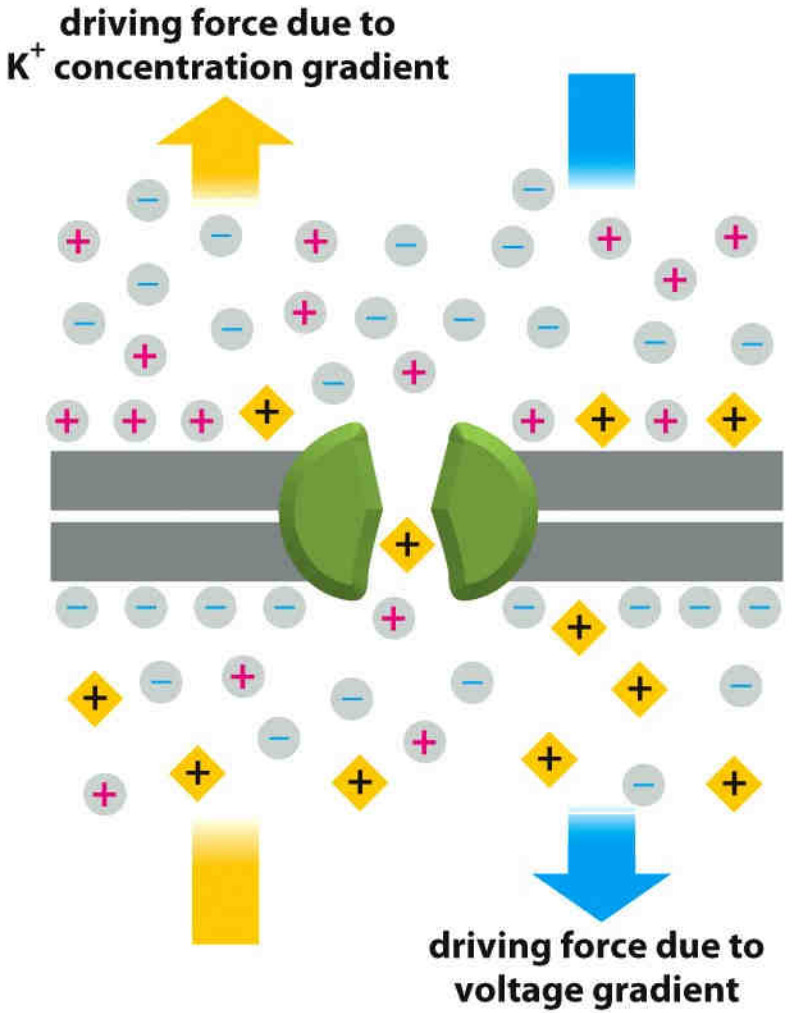


Figure 12-28 *Essential Cell Biology* (© Garland Science 2010)



(A) K^+ channel closed, membrane potential = 0; more K^+ inside the cell than outside, but zero *net* charge on each side (positive and negative charges balanced exactly)



(B) K^+ channel open; K^+ moves out, leaving negative ions behind, and this charge distribution creates a membrane potential that balances the tendency of K^+ to move out

Figure 12-29 *Essential Cell Biology* (© Garland Science 2010)

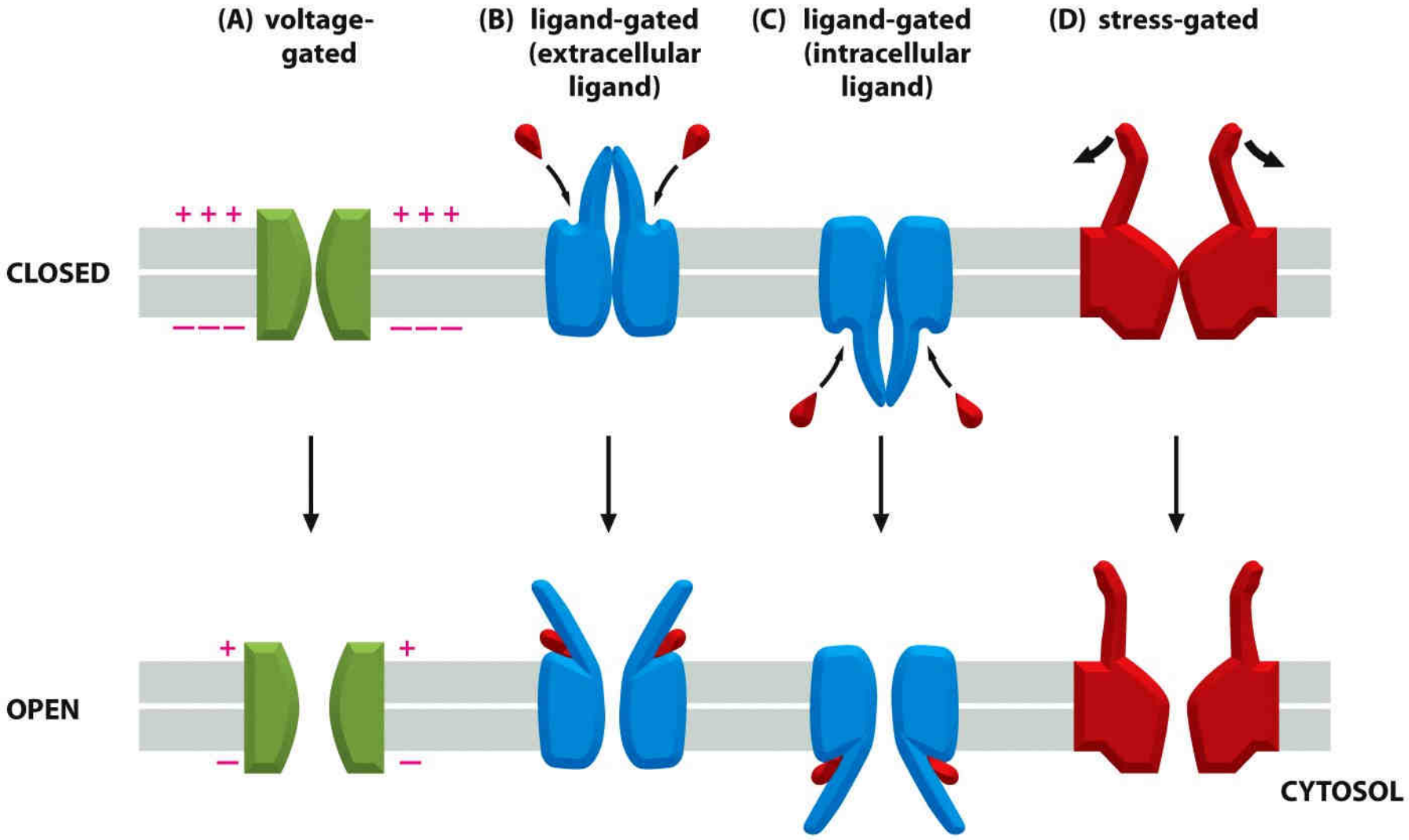


Figure 12-25 *Essential Cell Biology* (© Garland Science 2010)

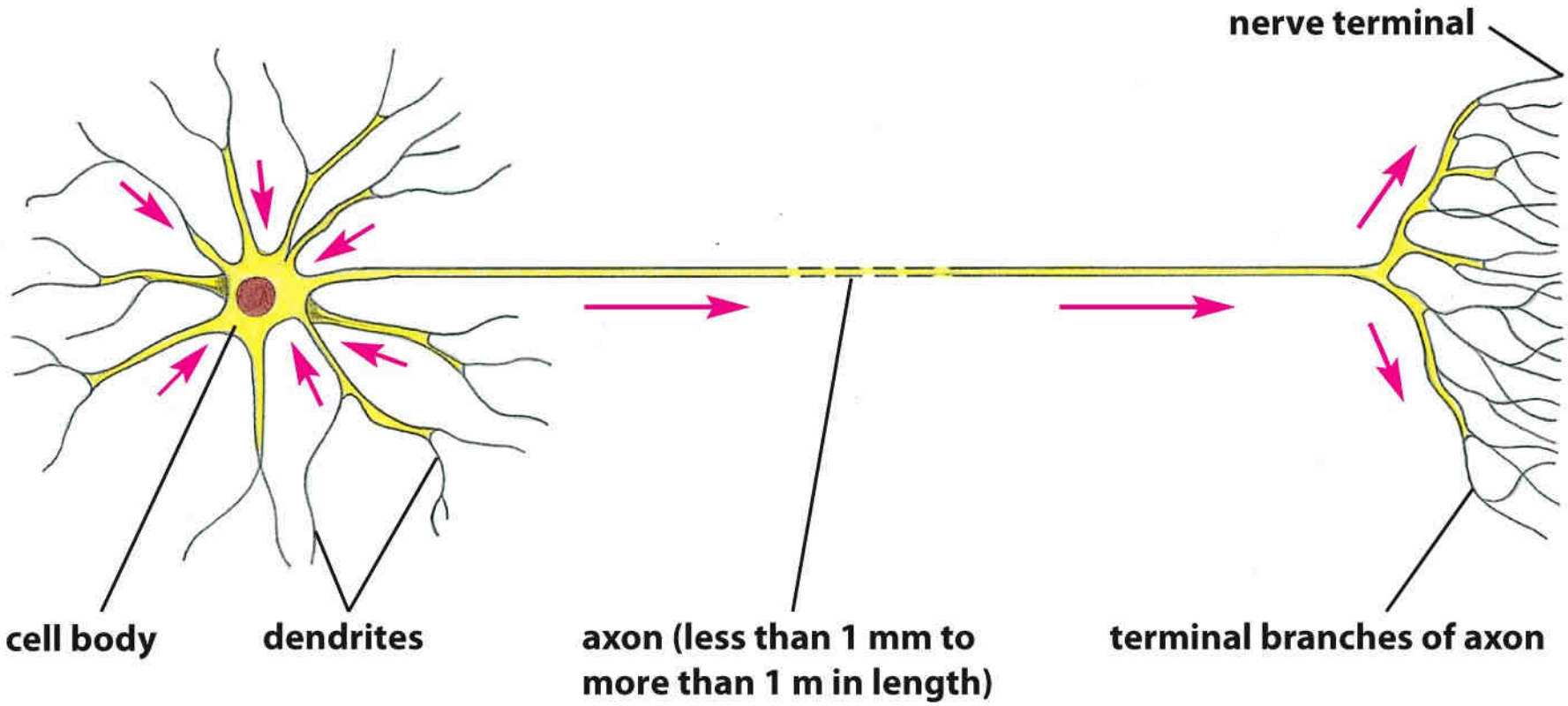


Figure 12-31 *Essential Cell Biology* (© Garland Science 2010)

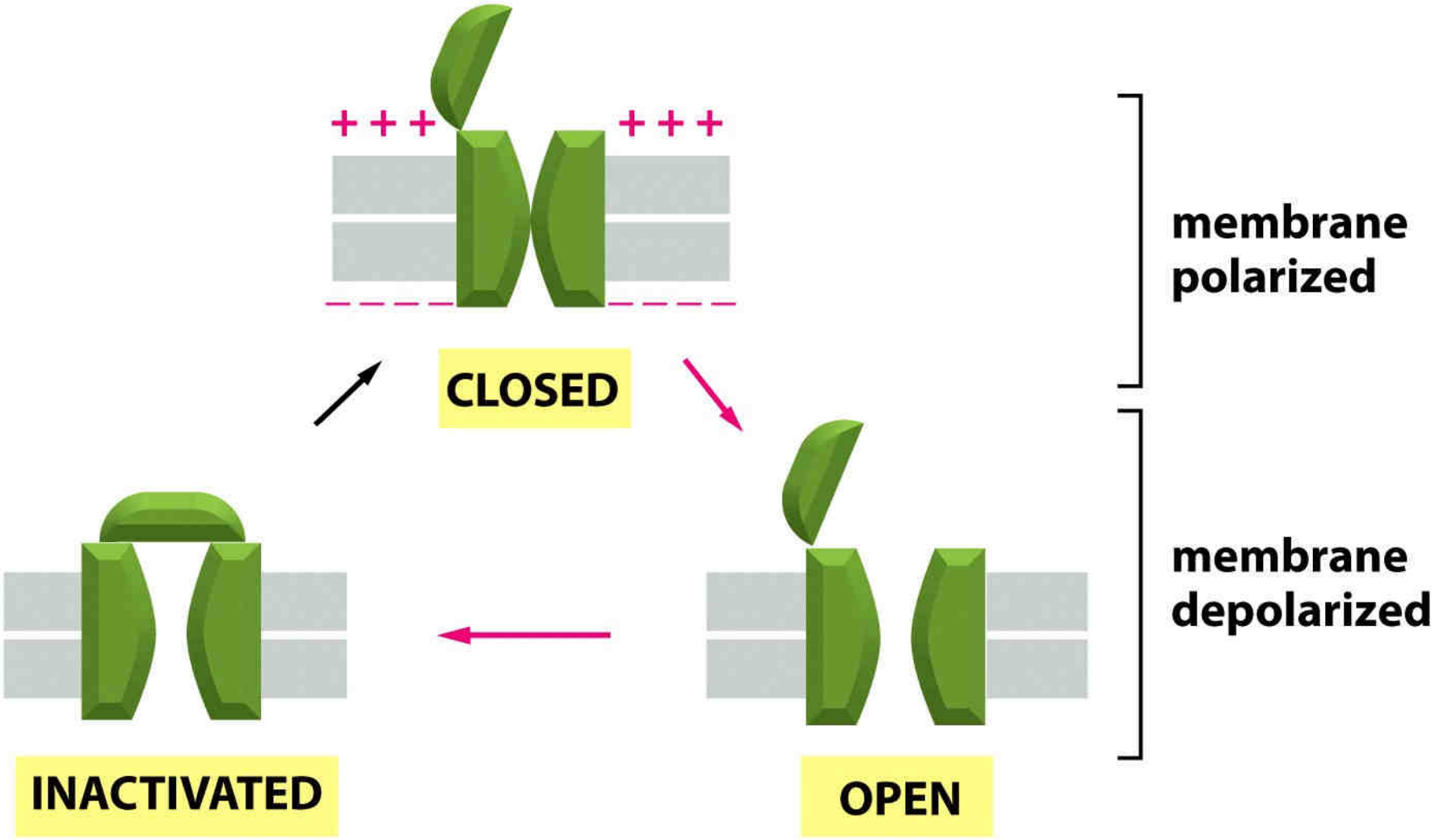


Figure 12-34 *Essential Cell Biology* (© Garland Science 2010)

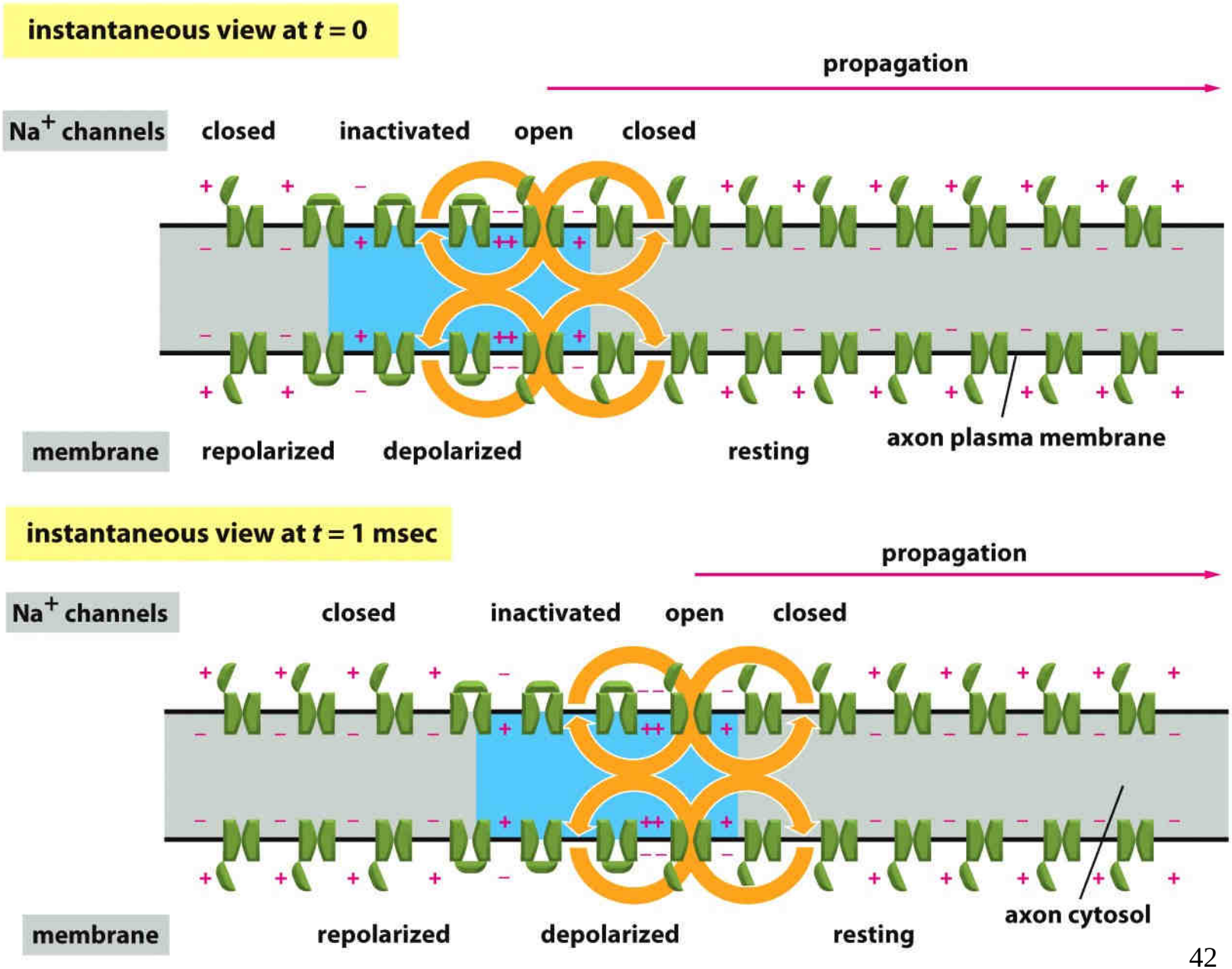


Figure 12-39b *Essential Cell Biology* (© Garland Science 2010)

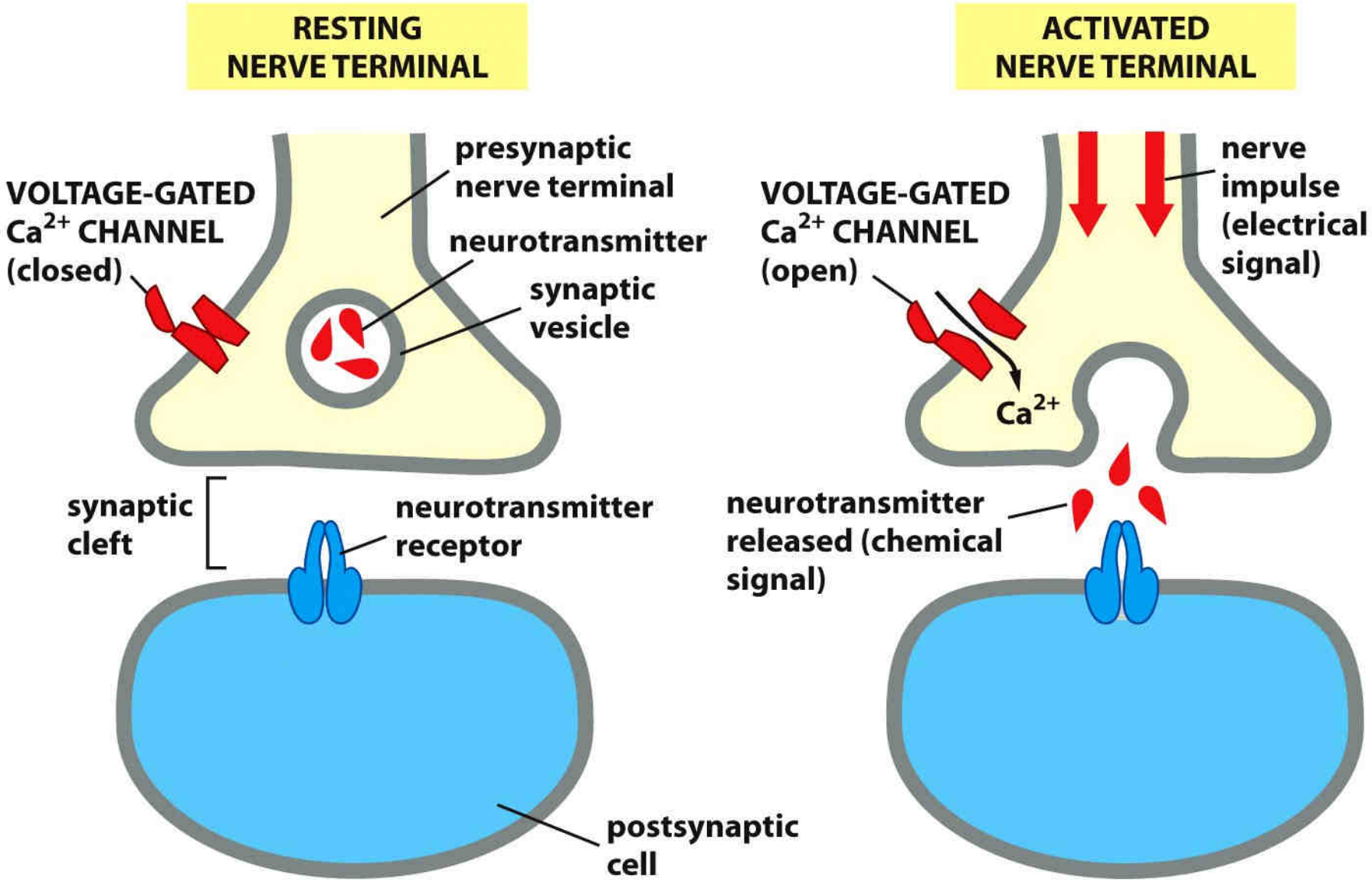


Figure 12-41 *Essential Cell Biology* (© Garland Science 2010)

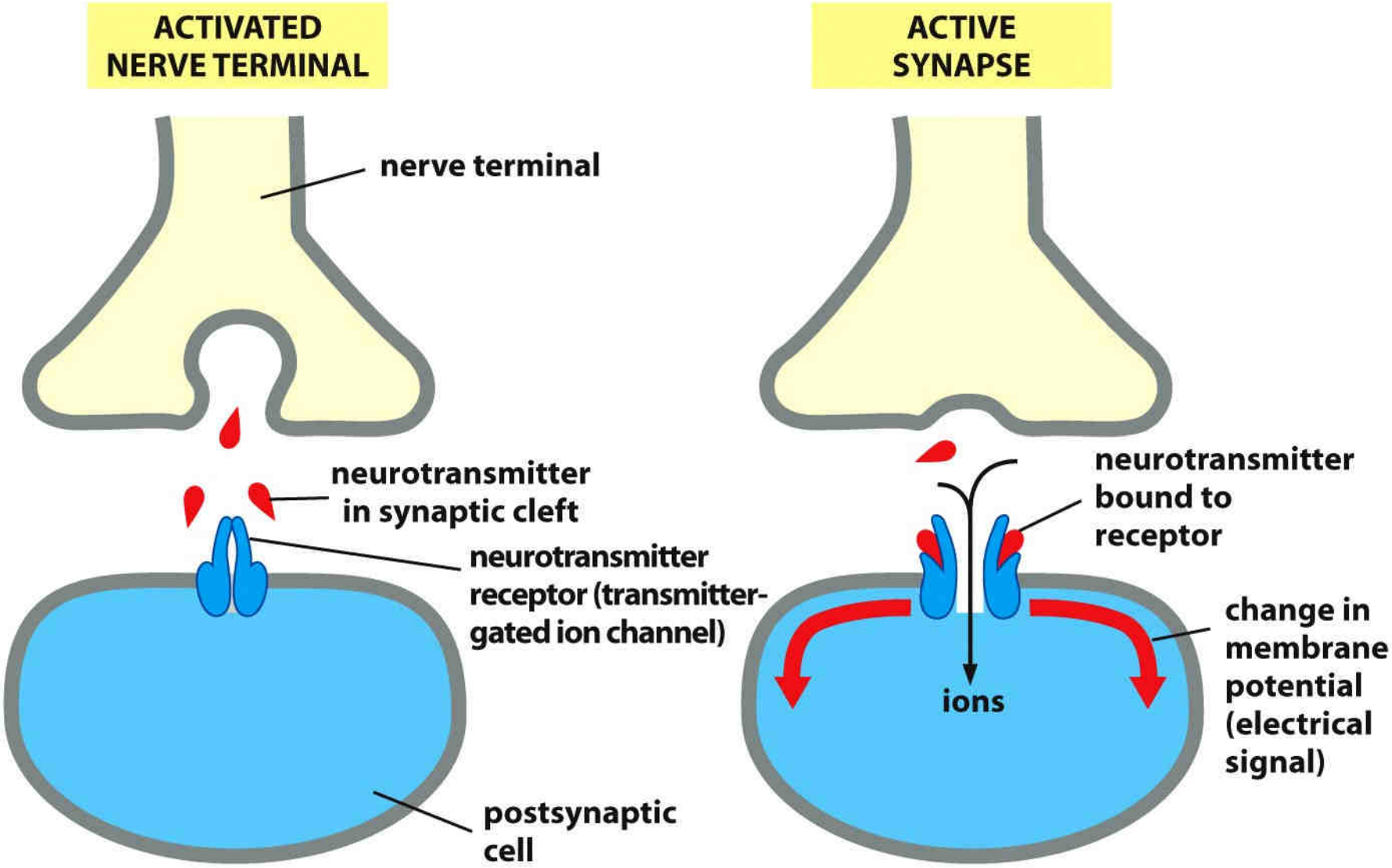


Figure 12-42 *Essential Cell Biology* (© Garland Science 2010)