

Figure 12-1 *Molecular Biology of the Cell* (© Garland Science 2008)

Table 12–1 Relative Volumes Occupied by the Major Intracellular Compartments in a Liver Cell (Hepatocyte)

INTRACELLULAR COMPARTMENT	PERCENTAGE OF TOTAL CELL VOLUME
Cytosol	54
Mitochondria	22
Rough ER cisternae	9
Smooth ER cisternae plus Golgi cisternae	6
Nucleus	6
Peroxisomes	1
Lysosomes	1
Endosomes	1

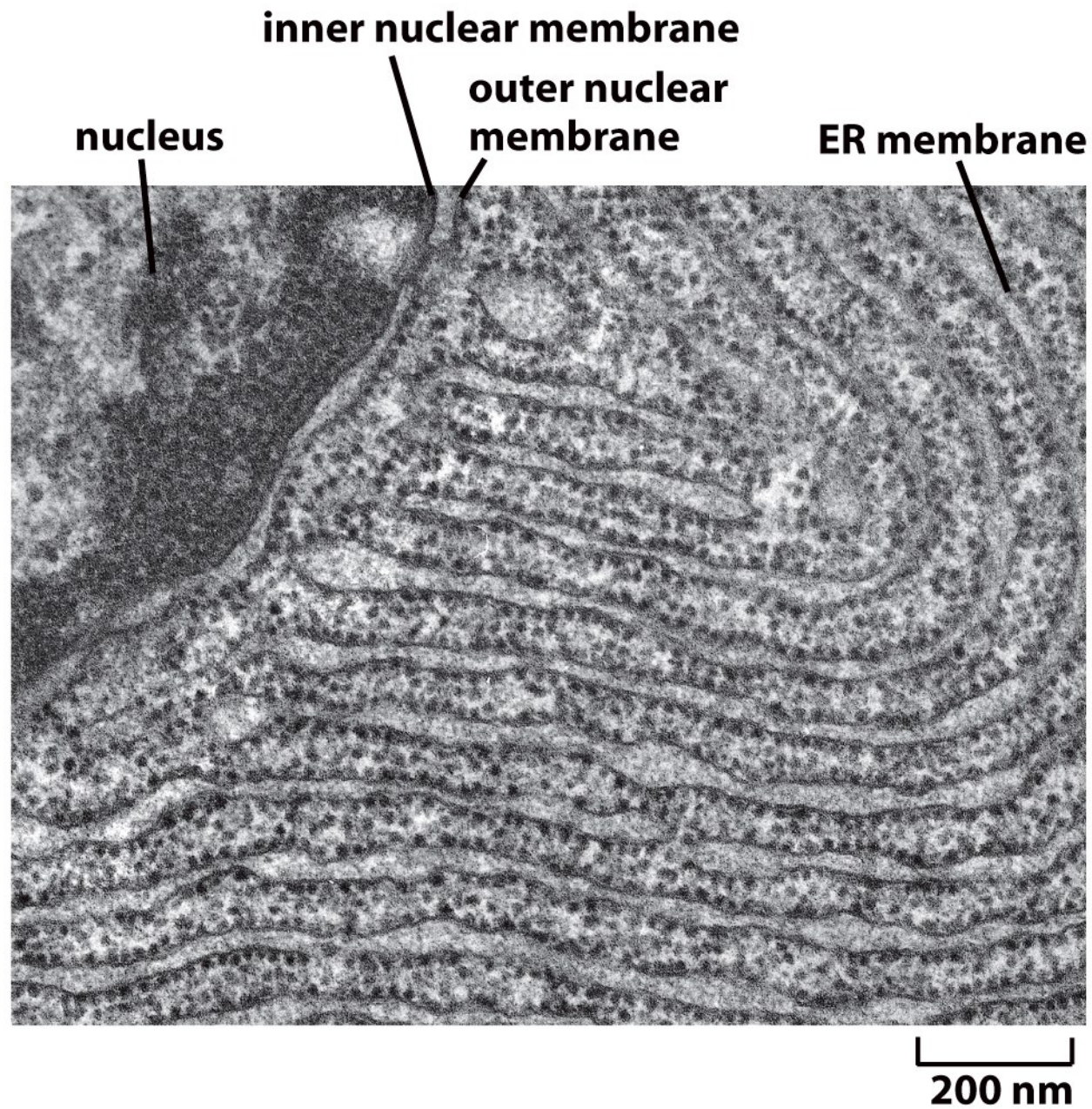
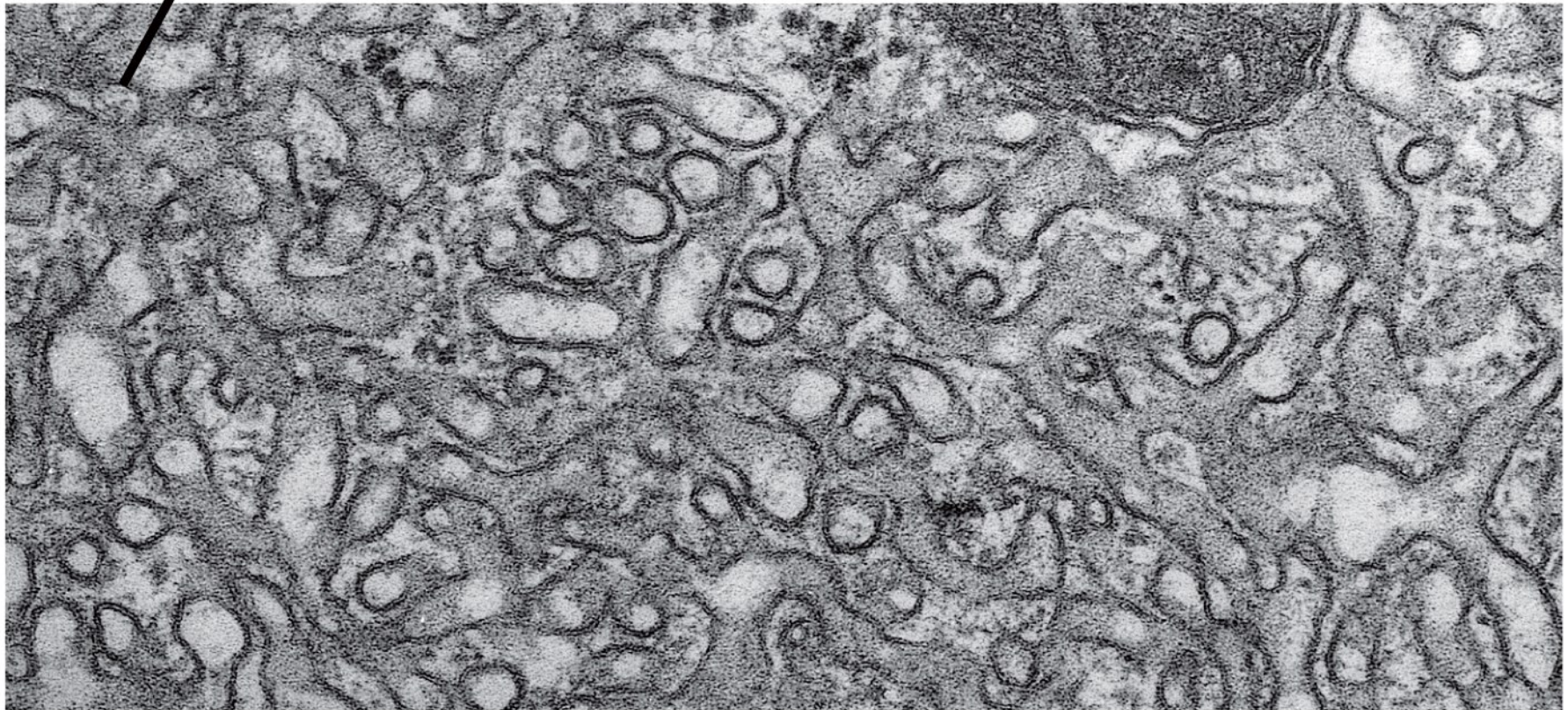


Figure 12-36a *Molecular Biology of the Cell* (© Garland Science 2008)

ER membrane



200 nm

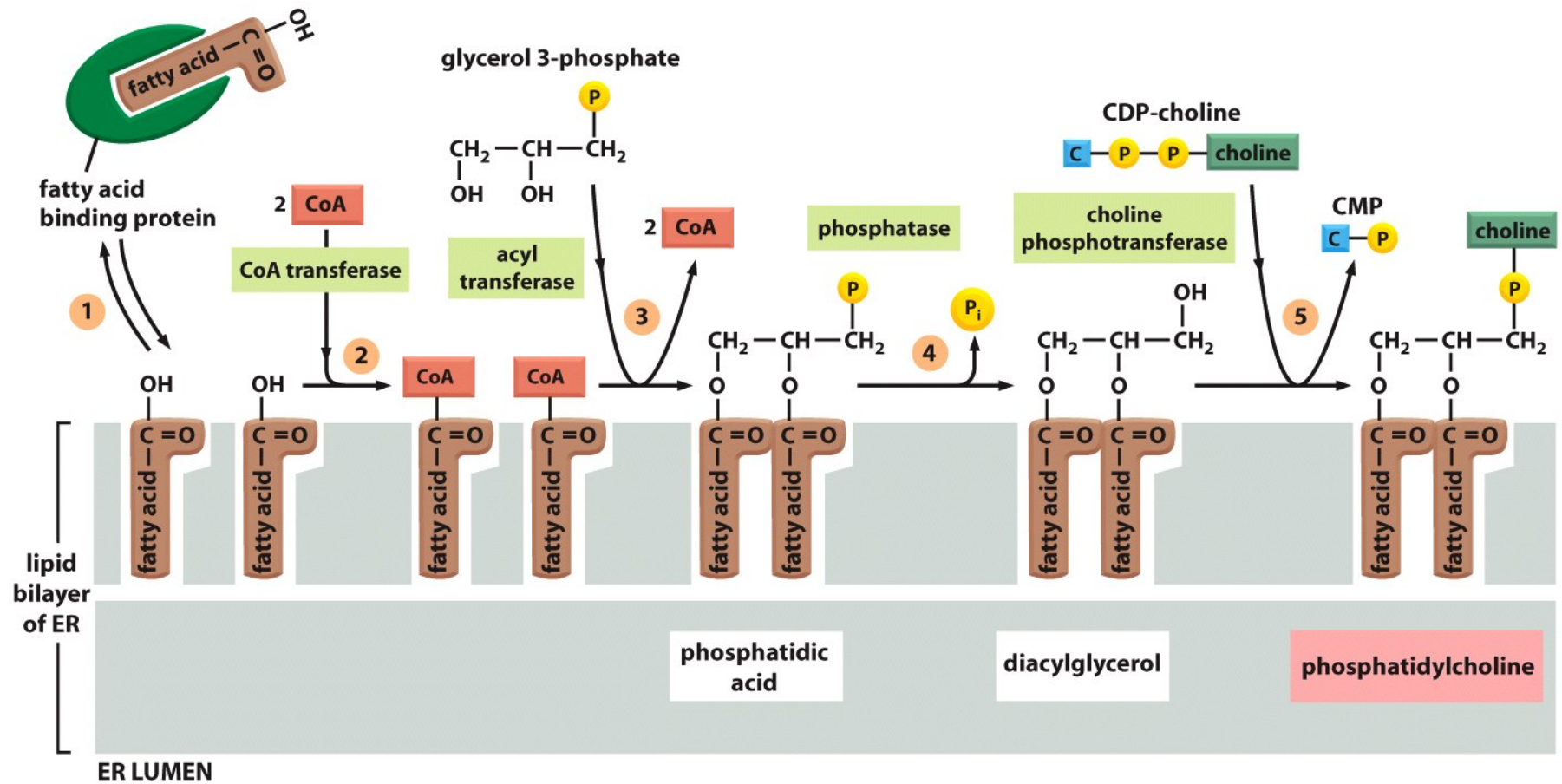
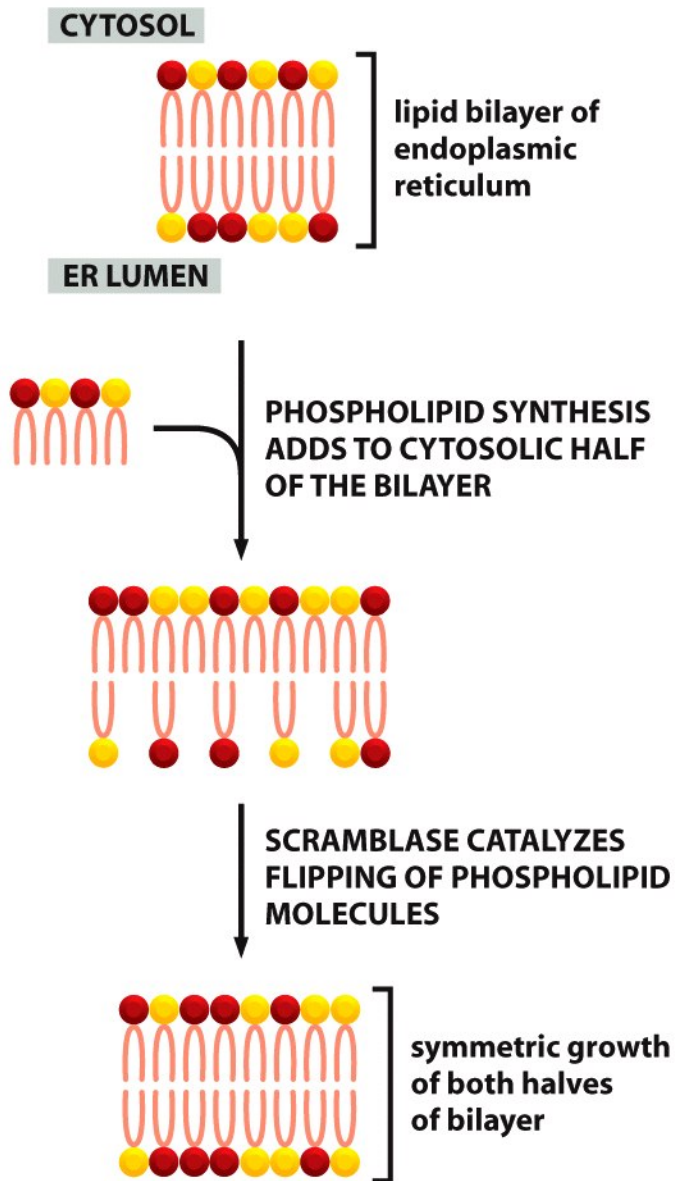


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(A) ER MEMBRANE



(B) PLASMA MEMBRANE

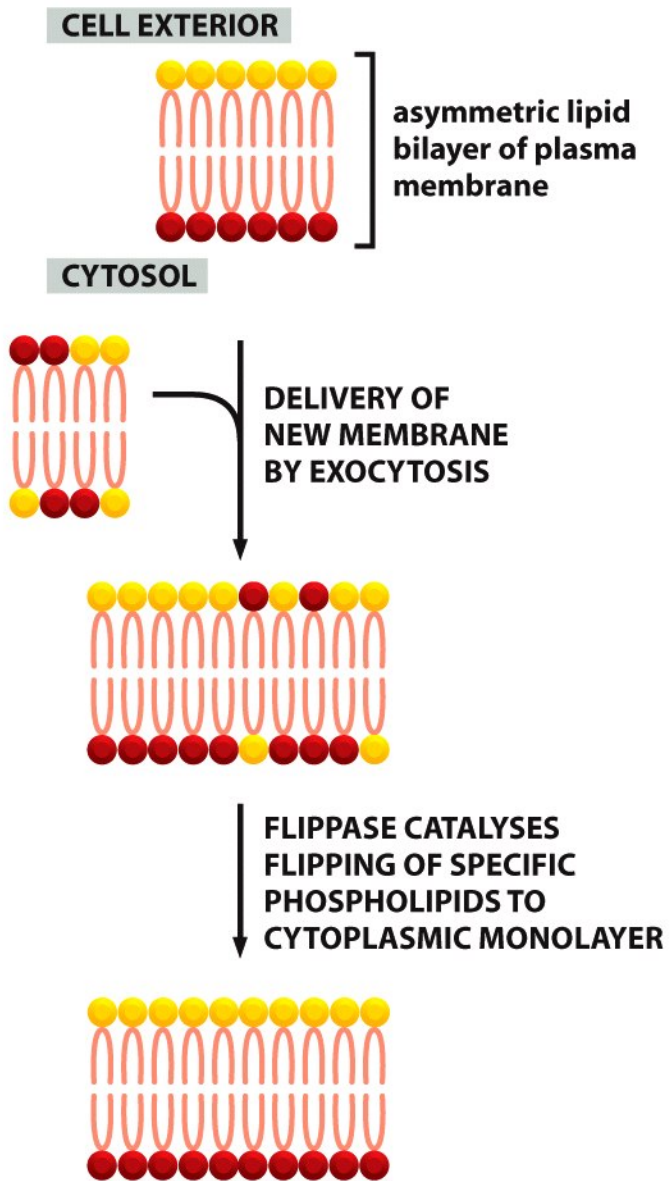


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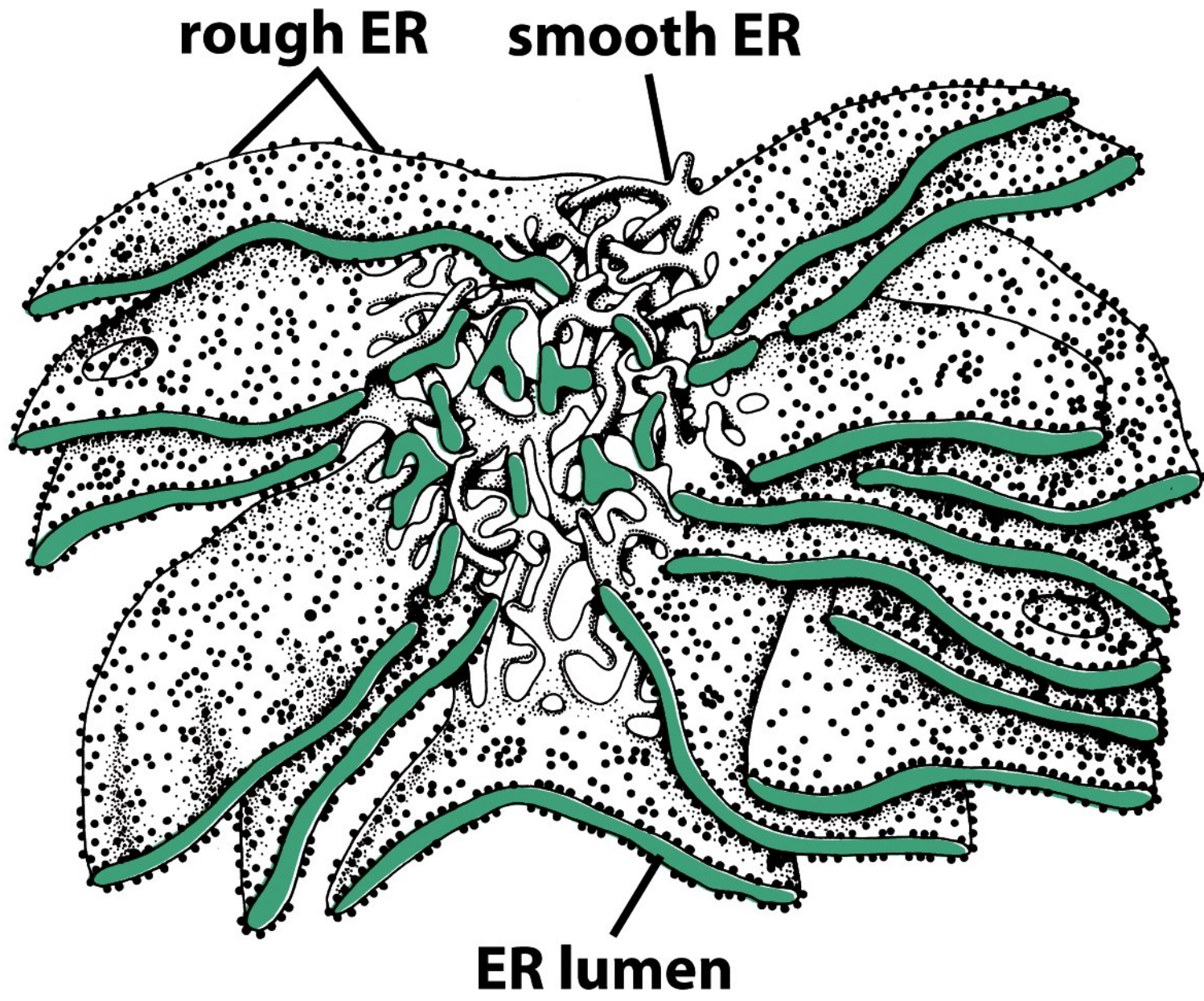


Figure 12-36c *Molecular Biology of the Cell* (© Garland Science 2008)

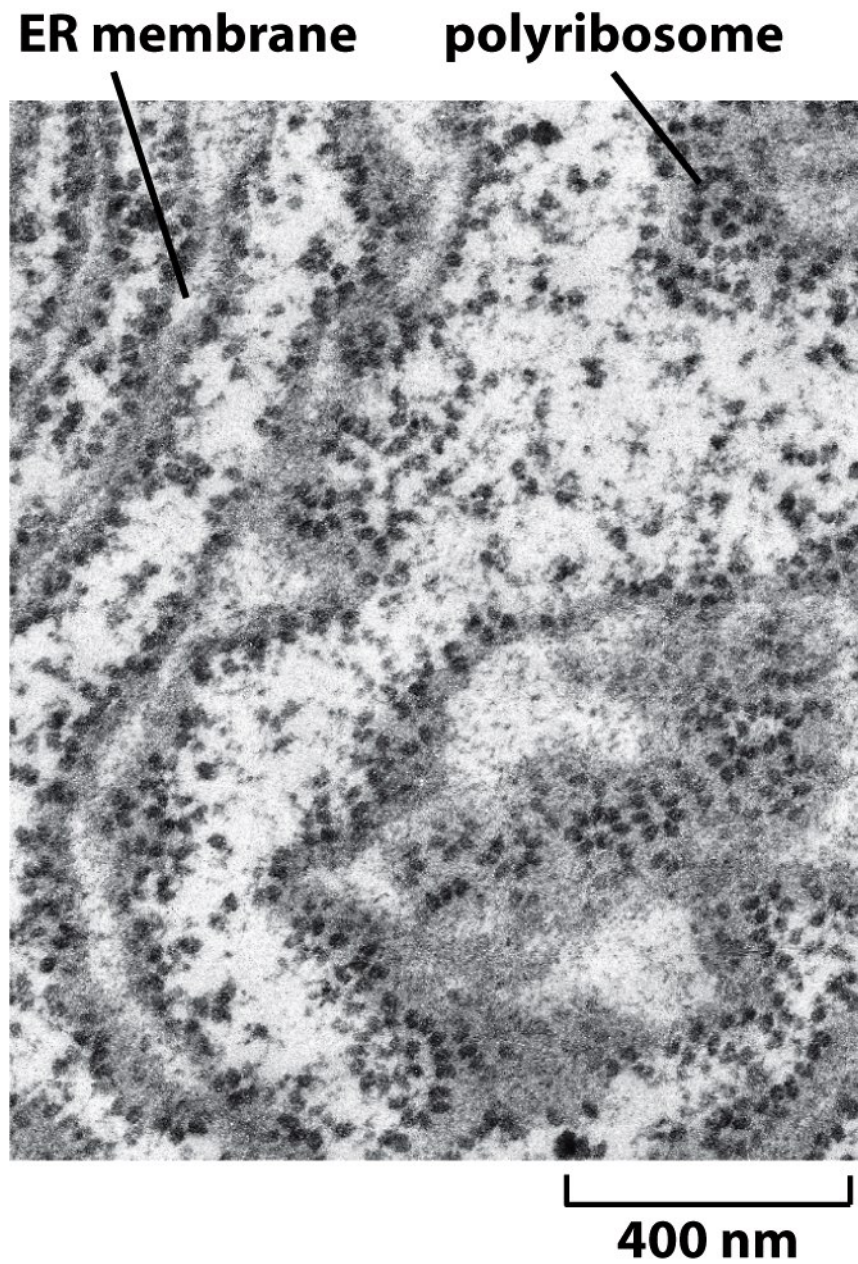


Figure 12-41b *Molecular Biology of the Cell* (© Garland Science 2008)

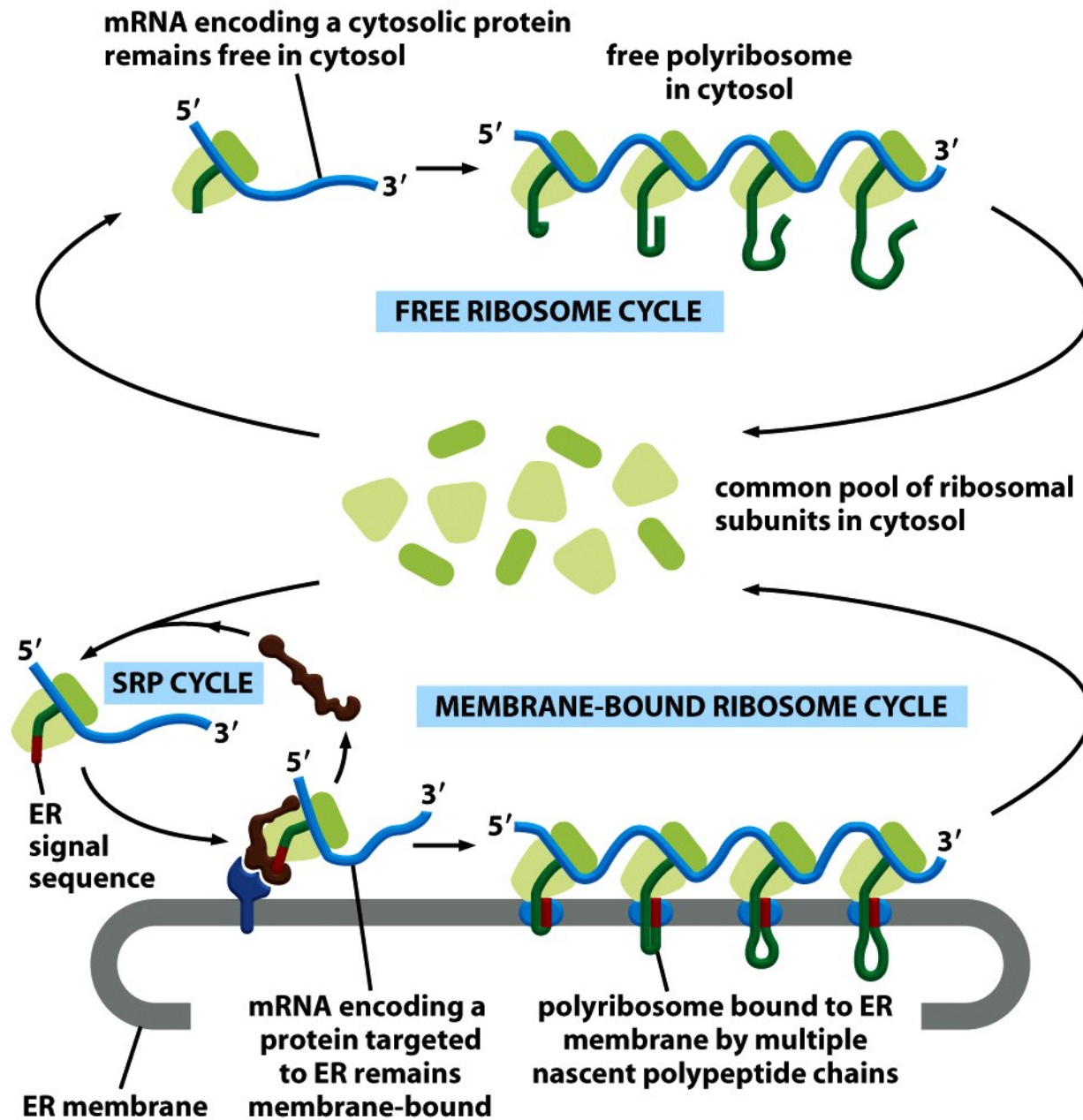


Figure 12-41a *Molecular Biology of the Cell* (© Garland Science 2008)

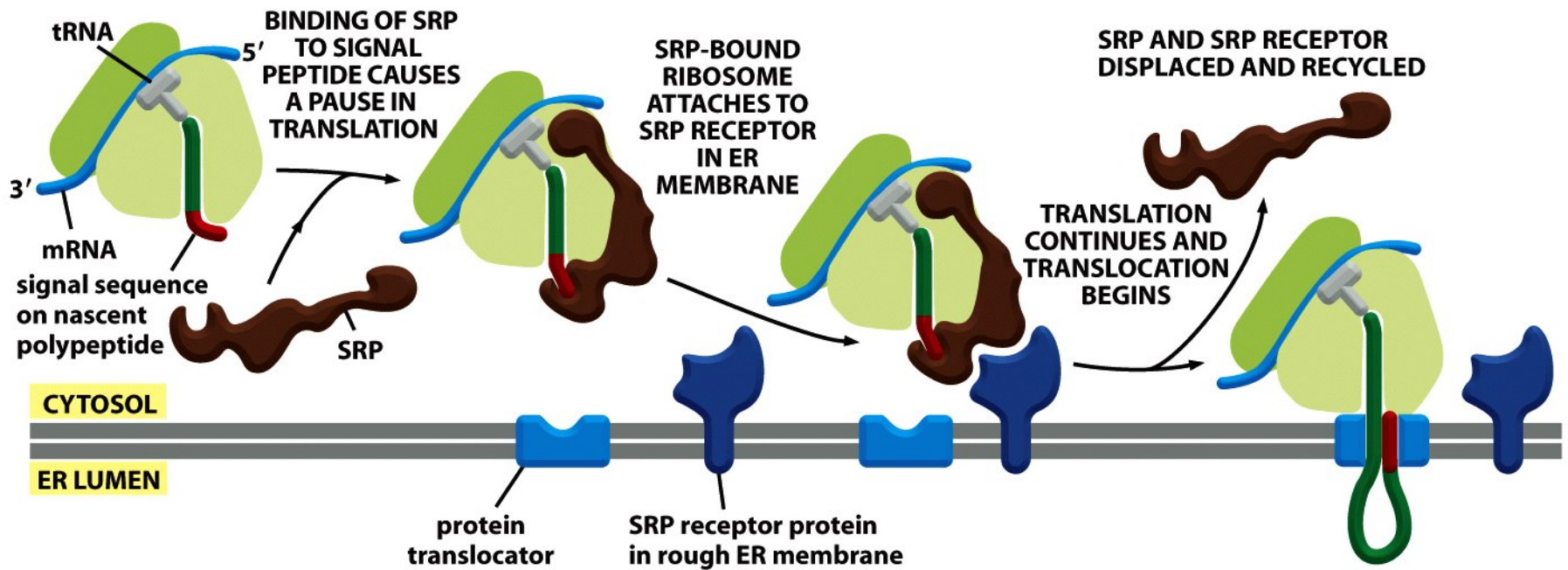


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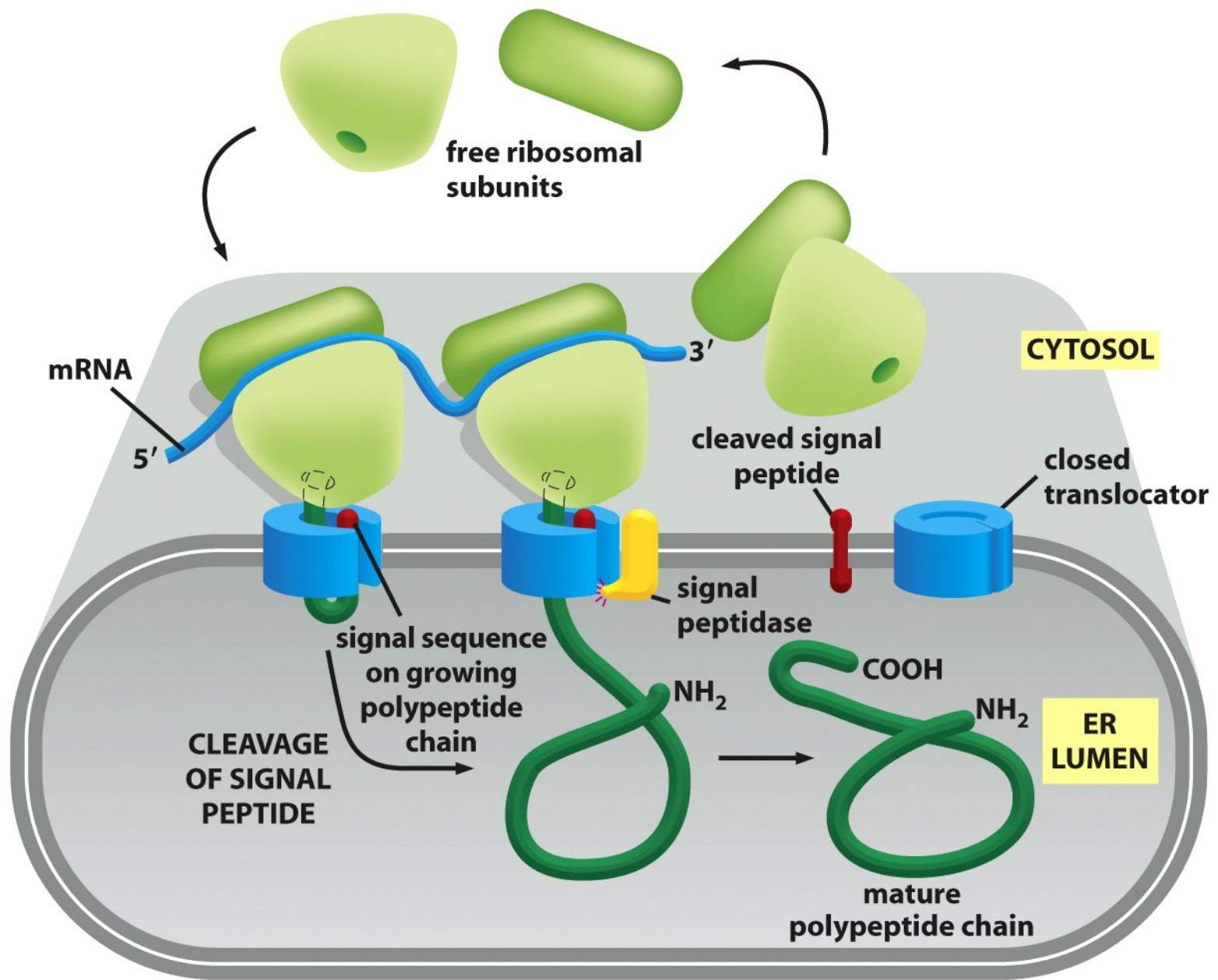


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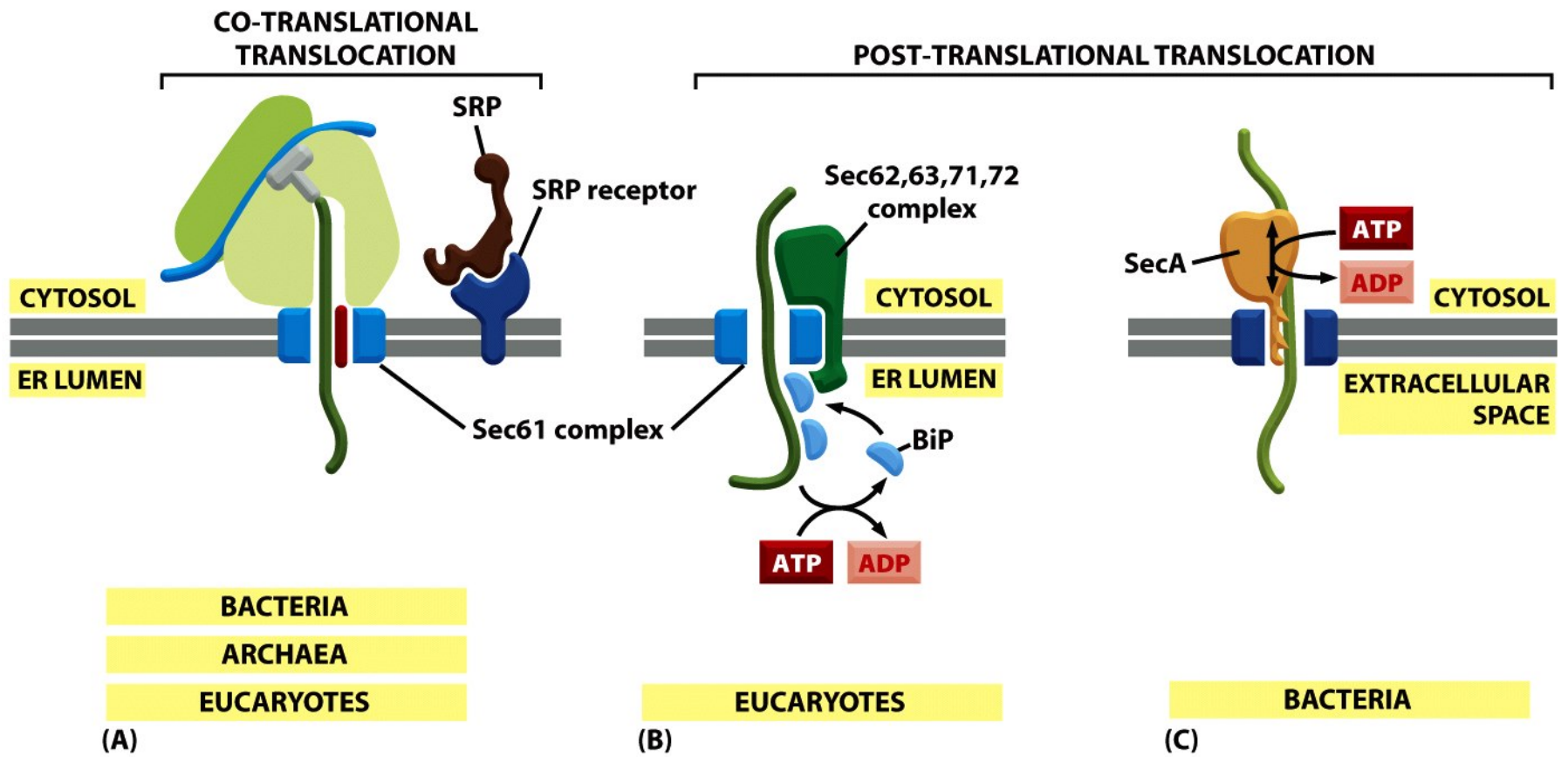


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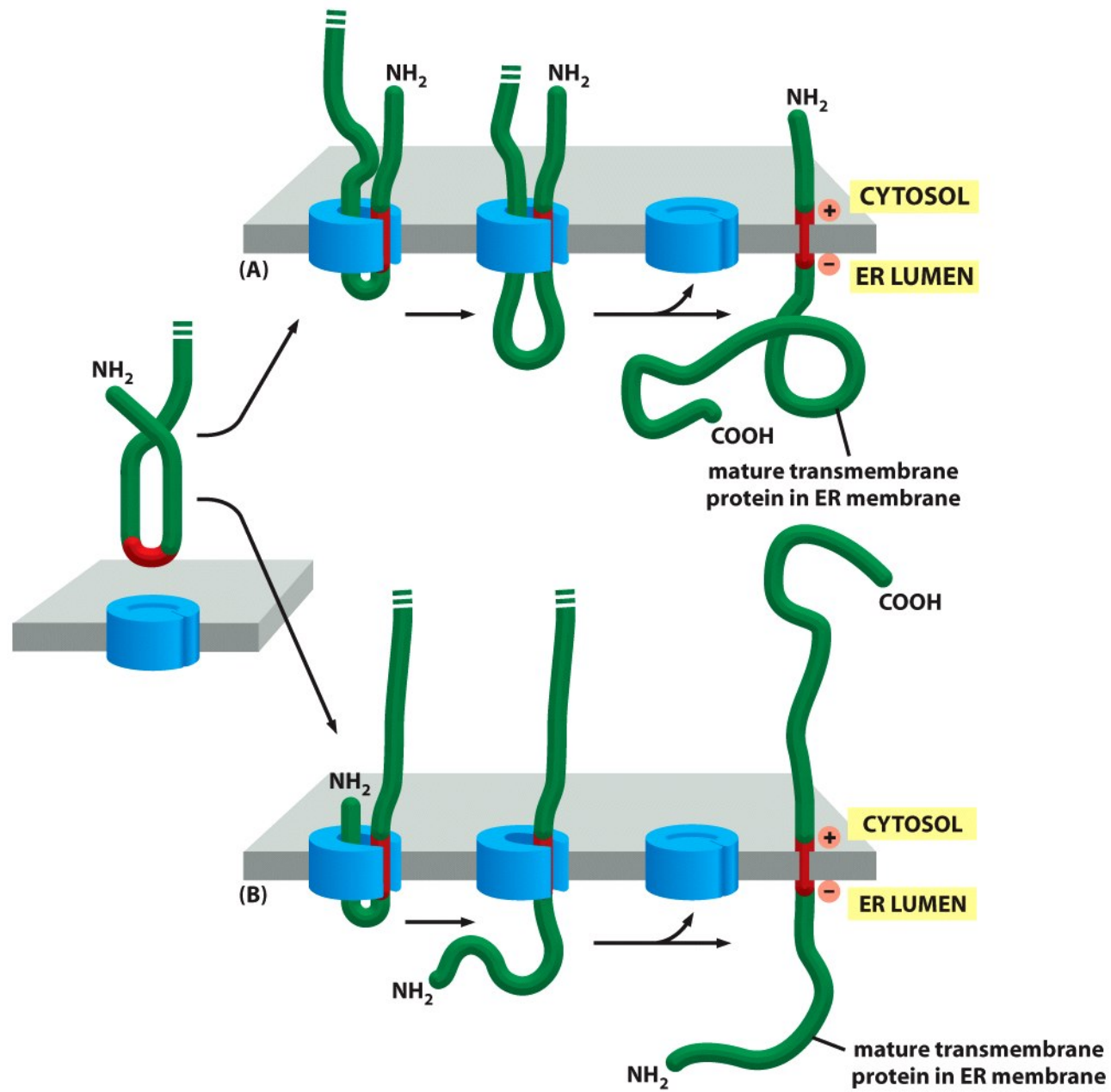


Figure 12-47 *Molecular Biology of the Cell* (© Garland Science 2008)

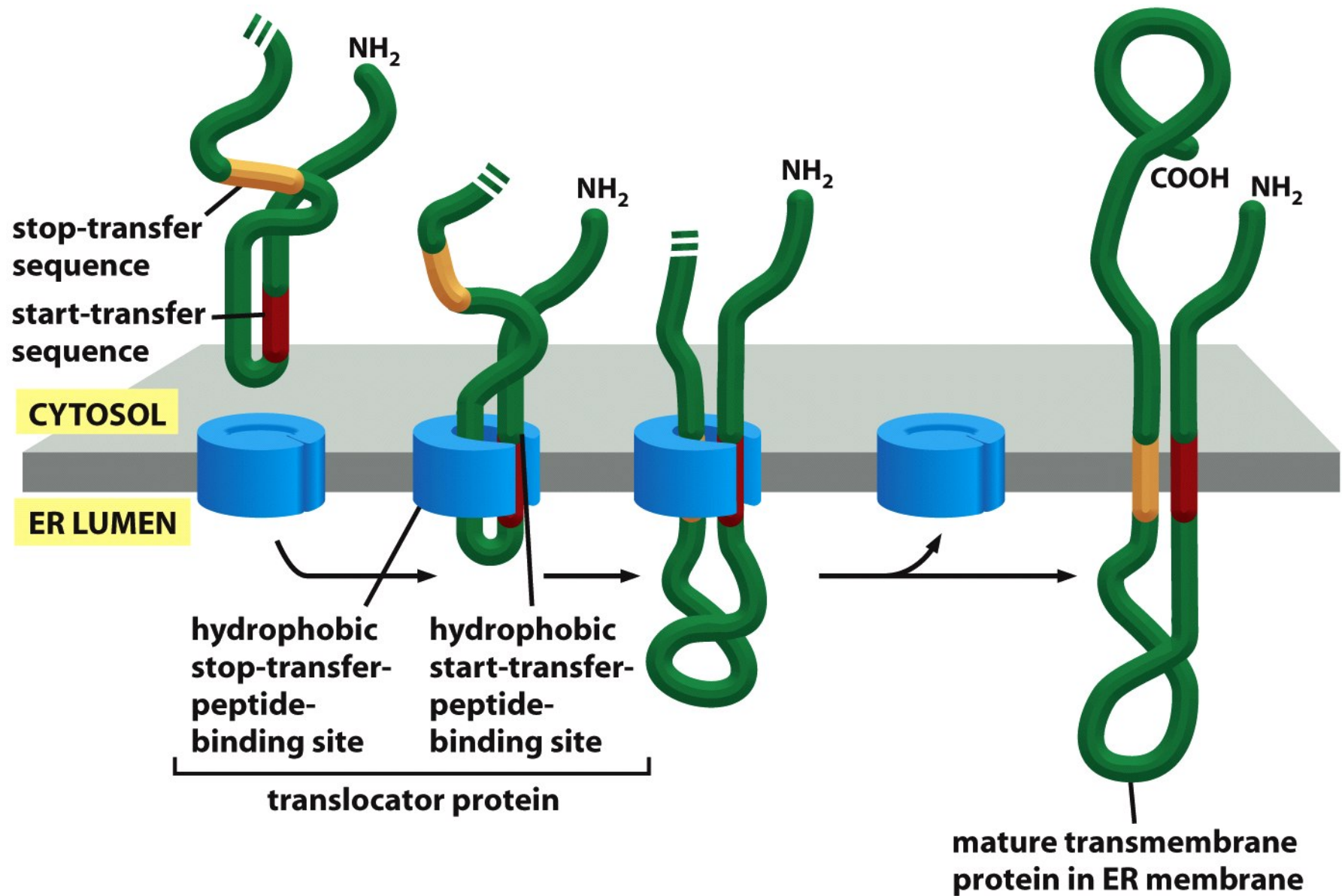


Figure 12-48 *Molecular Biology of the Cell* (© Garland Science 2008)

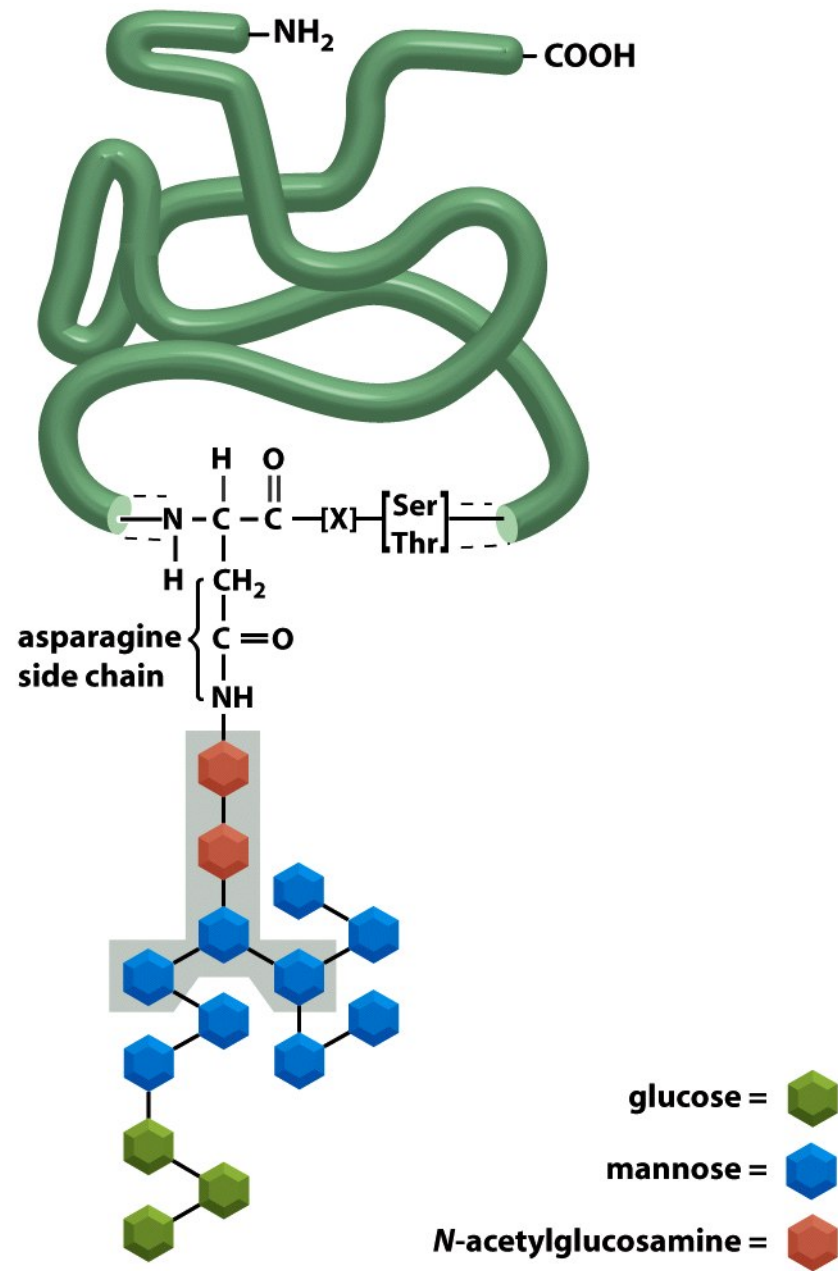


Figure 12-50 *Molecular Biology of the Cell* (© Garland Science 2008)

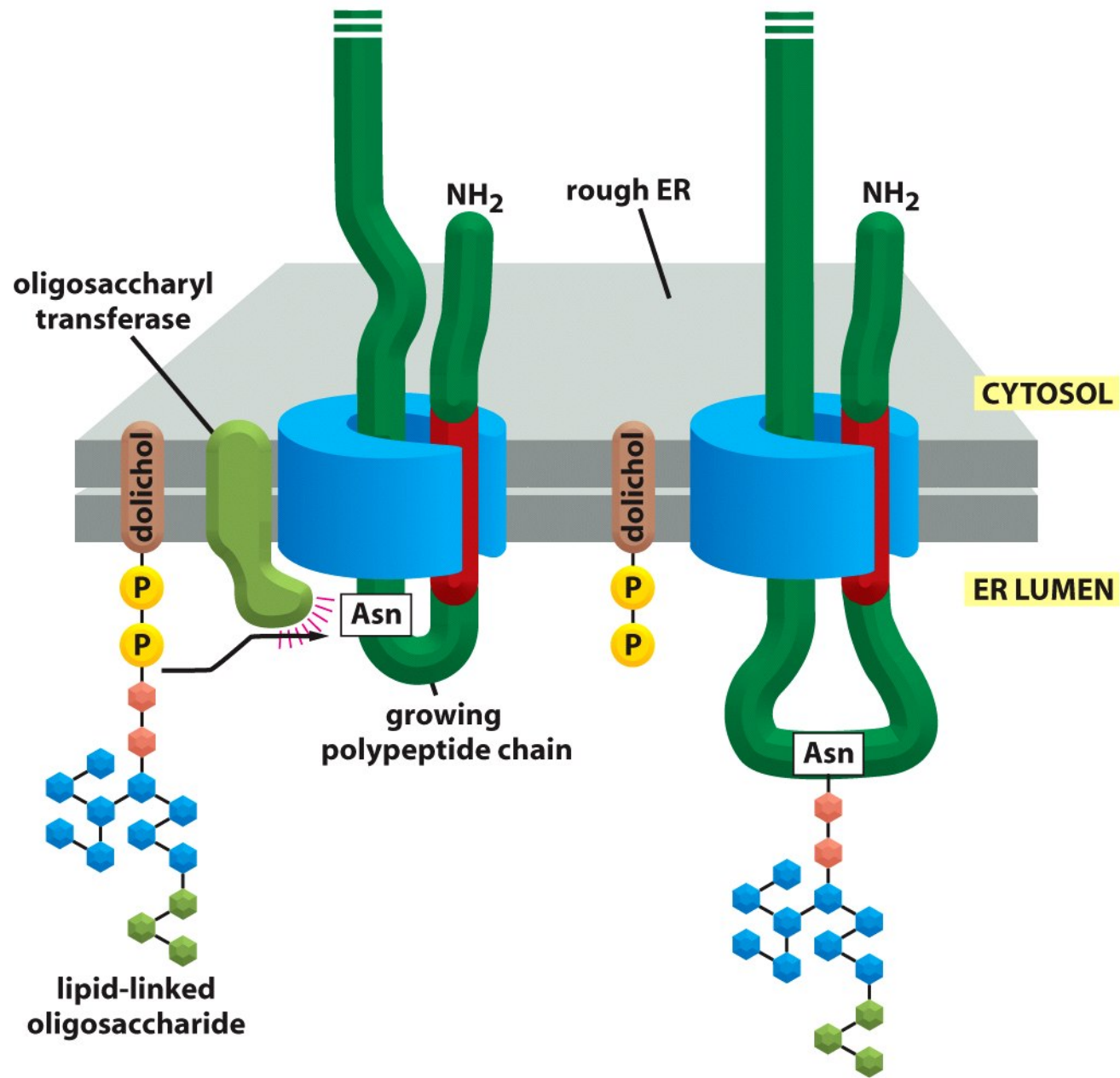


Figure 12-51 *Molecular Biology of the Cell* (© Garland Science 2008)

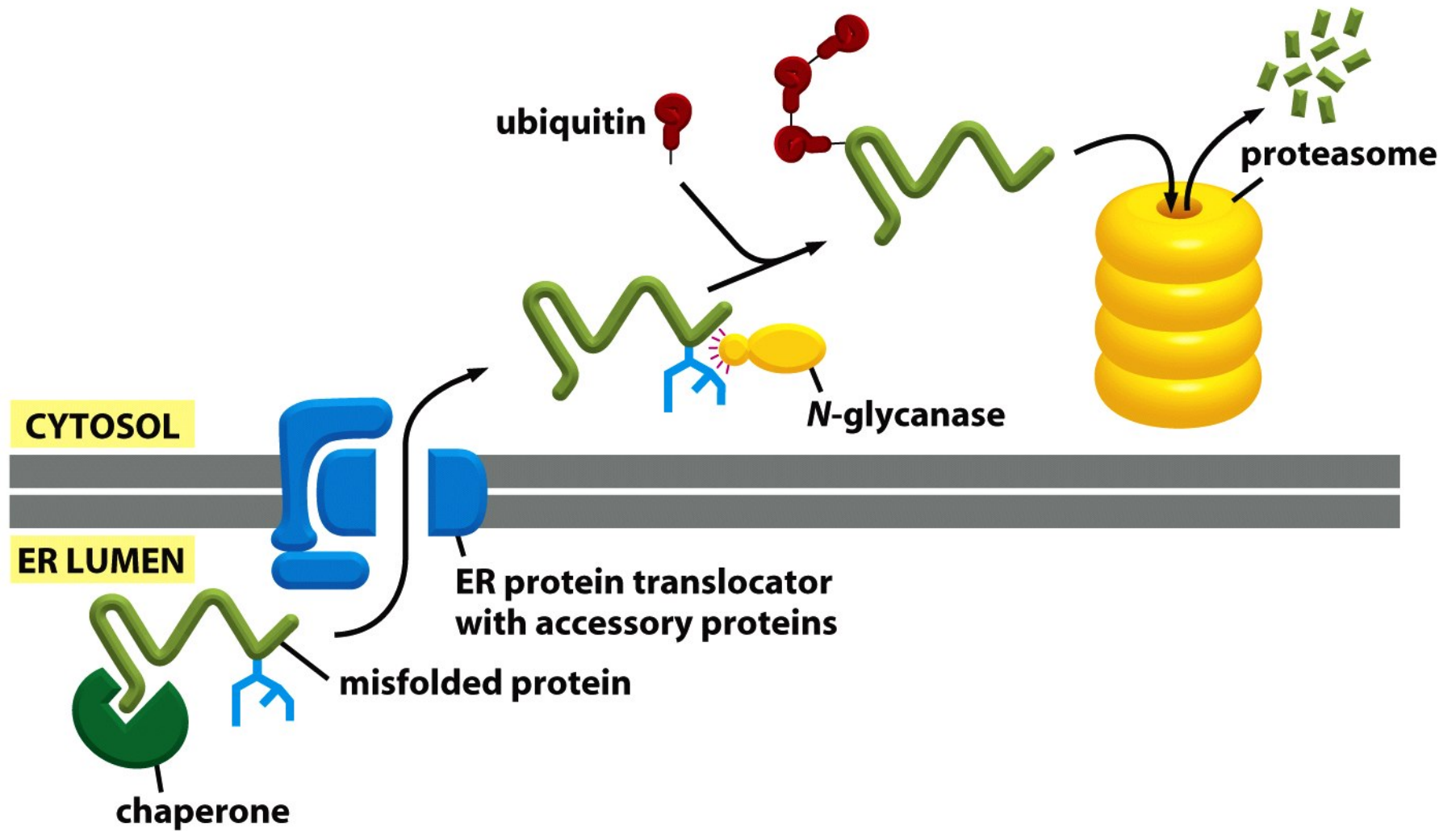
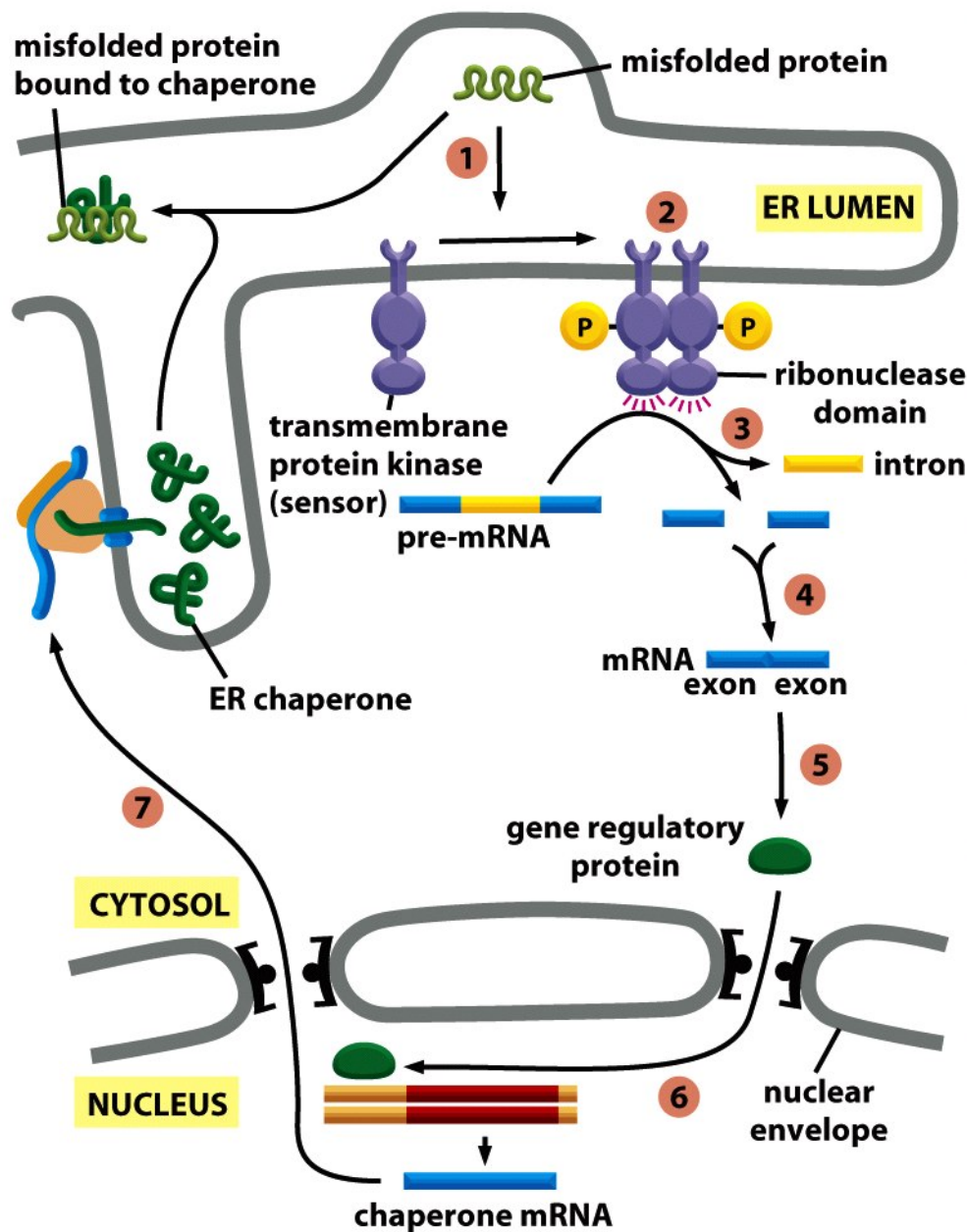


Figure 12-54 *Molecular Biology of the Cell* (© Garland Science 2008)



1 MISFOLDED PROTEINS IN ER SIGNAL THE NEED FOR MORE ER CHAPERONES BY ACTIVATING A TRANSMEMBRANE KINASE

2 ACTIVATED KINASE TURNS INTO AN ENDORIBONUCLEASE

3 ENDORIBONUCLEASE CUTS SPECIFIC RNA MOLECULES AT TWO POSITIONS, REMOVING AN INTRON

4 TWO EXONS ARE LIGATED TO FORM AN ACTIVE mRNA

5 mRNA IS TRANSLATED TO MAKE A GENE REGULATORY PROTEIN

6 GENE REGULATORY PROTEIN ENTERS NUCLEUS AND ACTIVATES GENES ENCODING ER CHAPERONES

7 CHAPERONES ARE MADE IN ER, WHERE THEY HELP FOLD PROTEINS

Figure 12-55b *Molecular Biology of the Cell* (© Garland Science 2008)

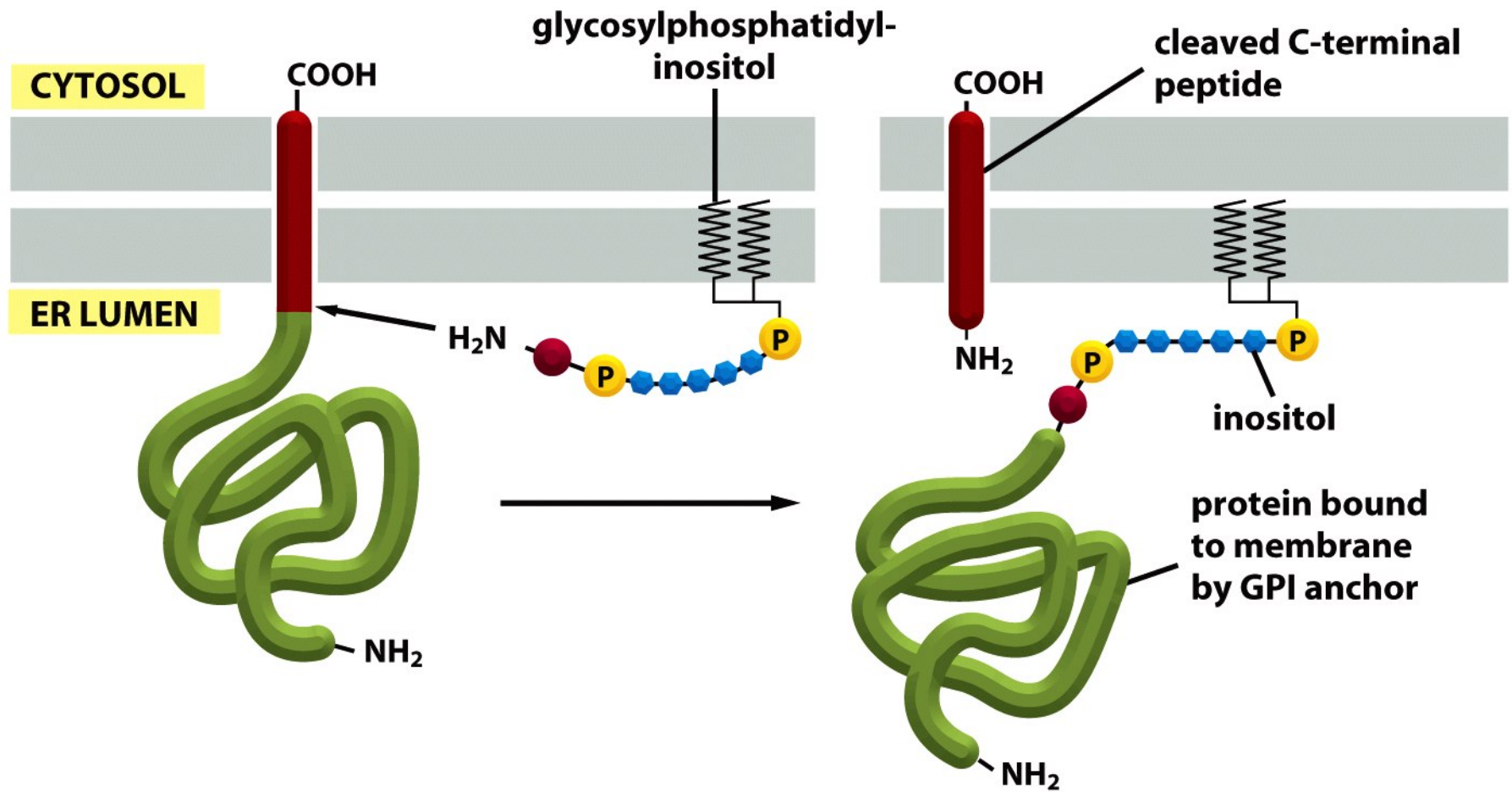


Figure 12-56 *Molecular Biology of the Cell* (© Garland Science 2008)

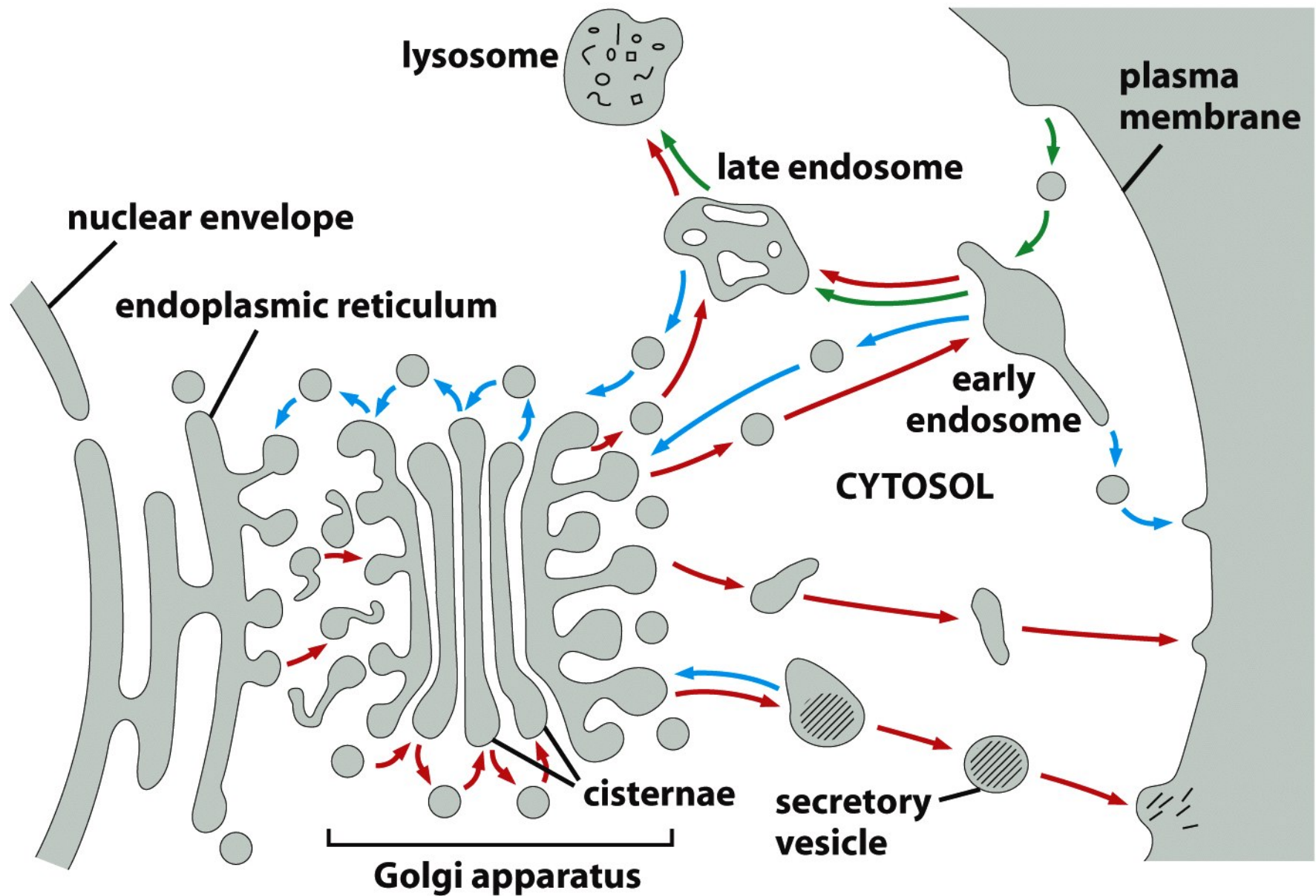


Figure 13-3b *Molecular Biology of the Cell* (© Garland Science 2008)

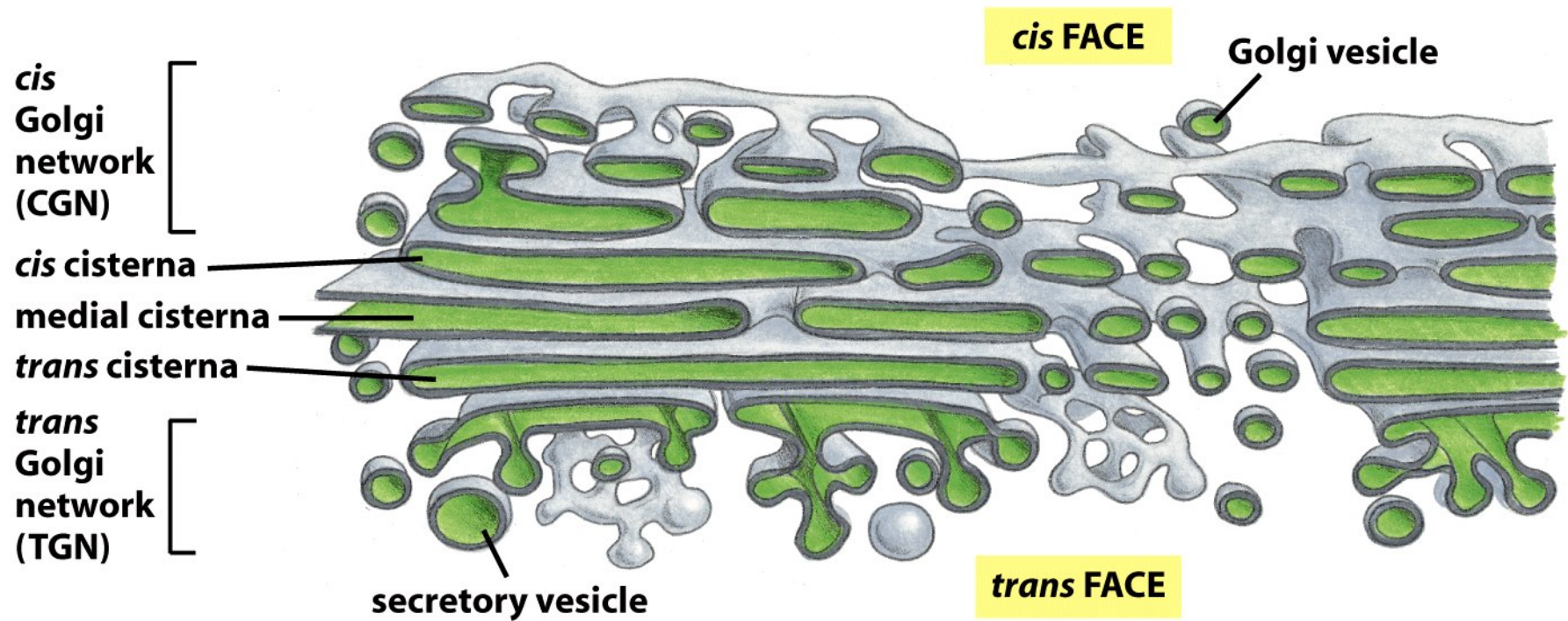


Figure 13-25a *Molecular Biology of the Cell* (© Garland Science 2008)

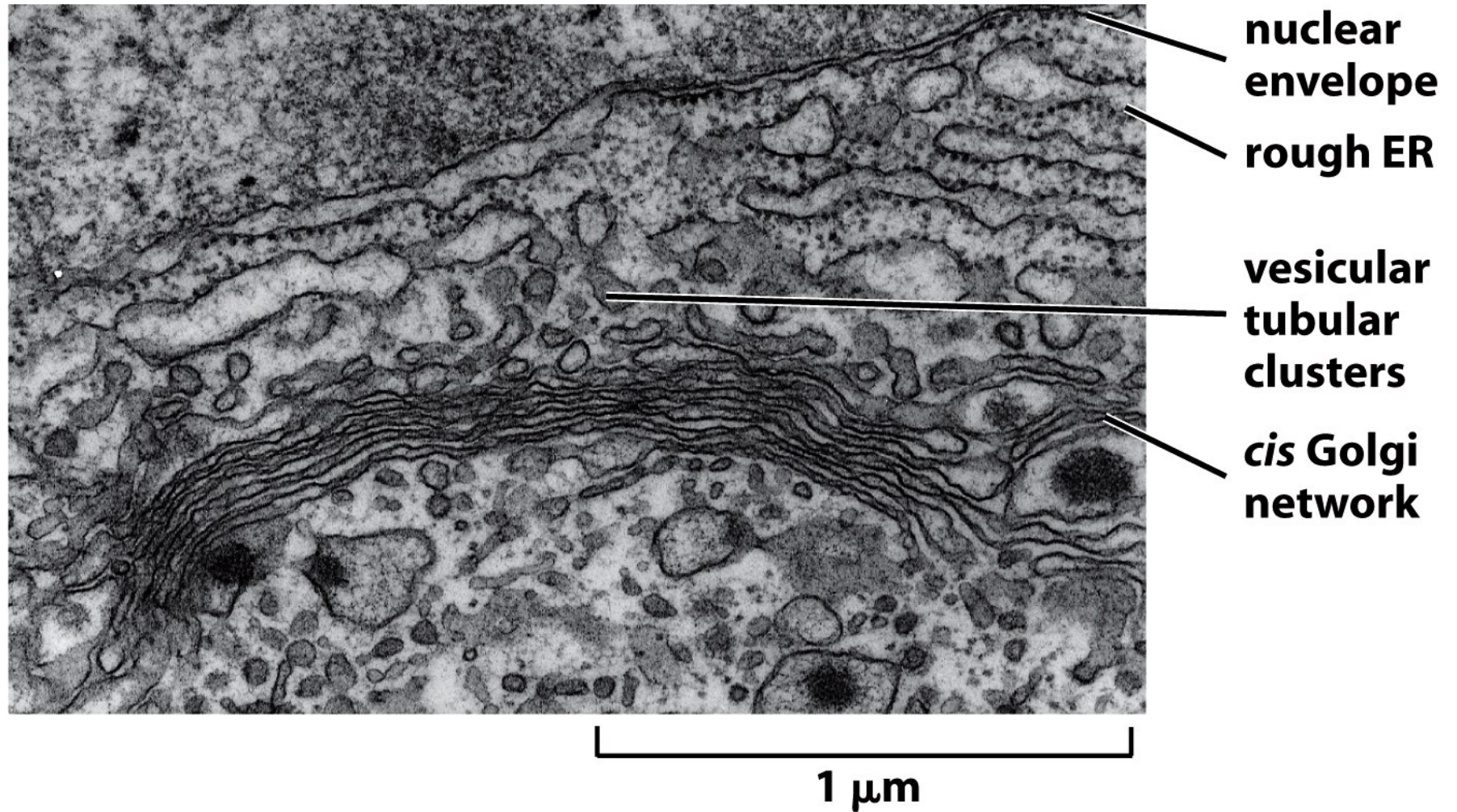


Figure 13-25b *Molecular Biology of the Cell* (© Garland Science 2008)

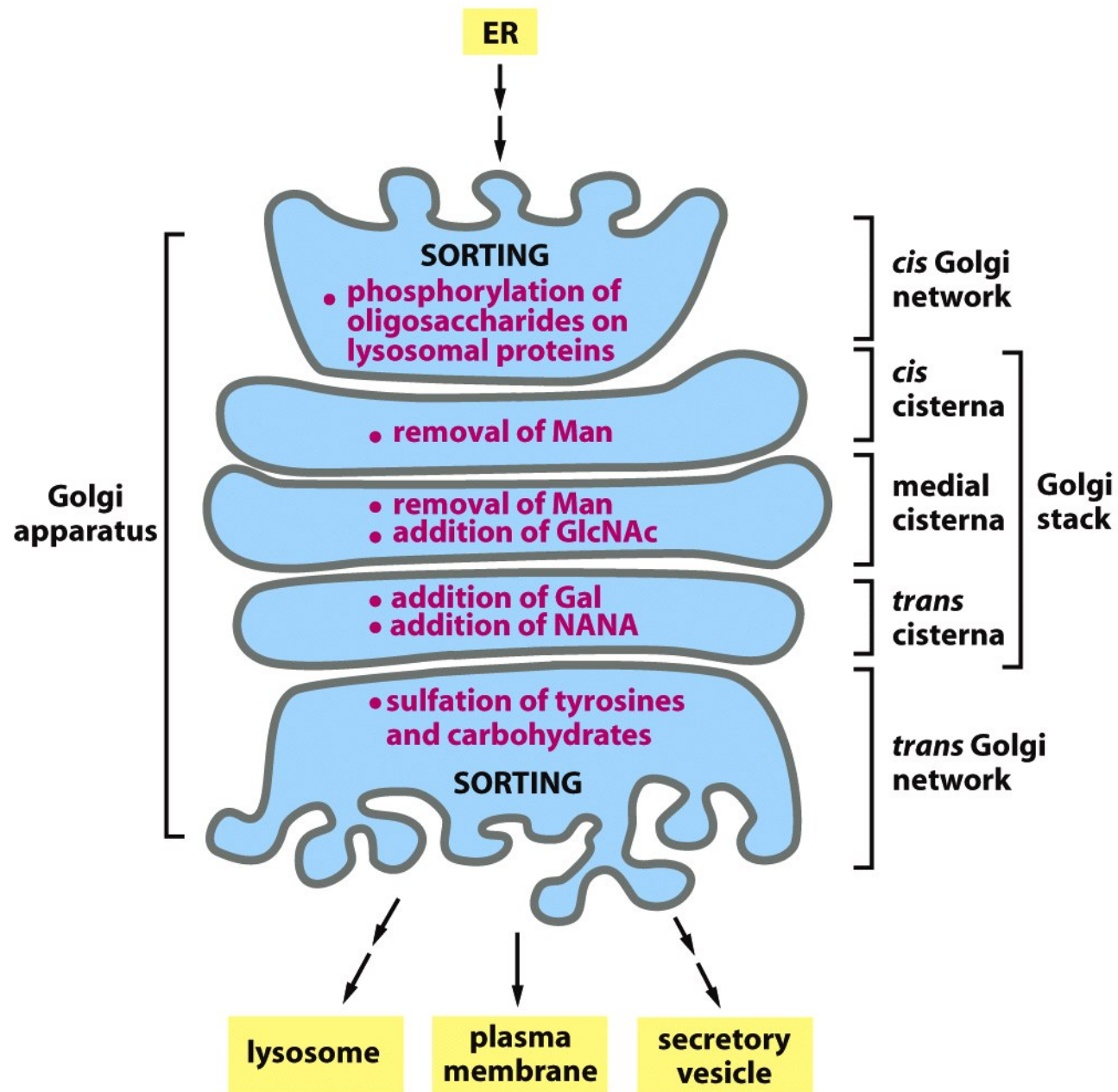


Figure 13-28 *Molecular Biology of the Cell* (© Garland Science 2008)

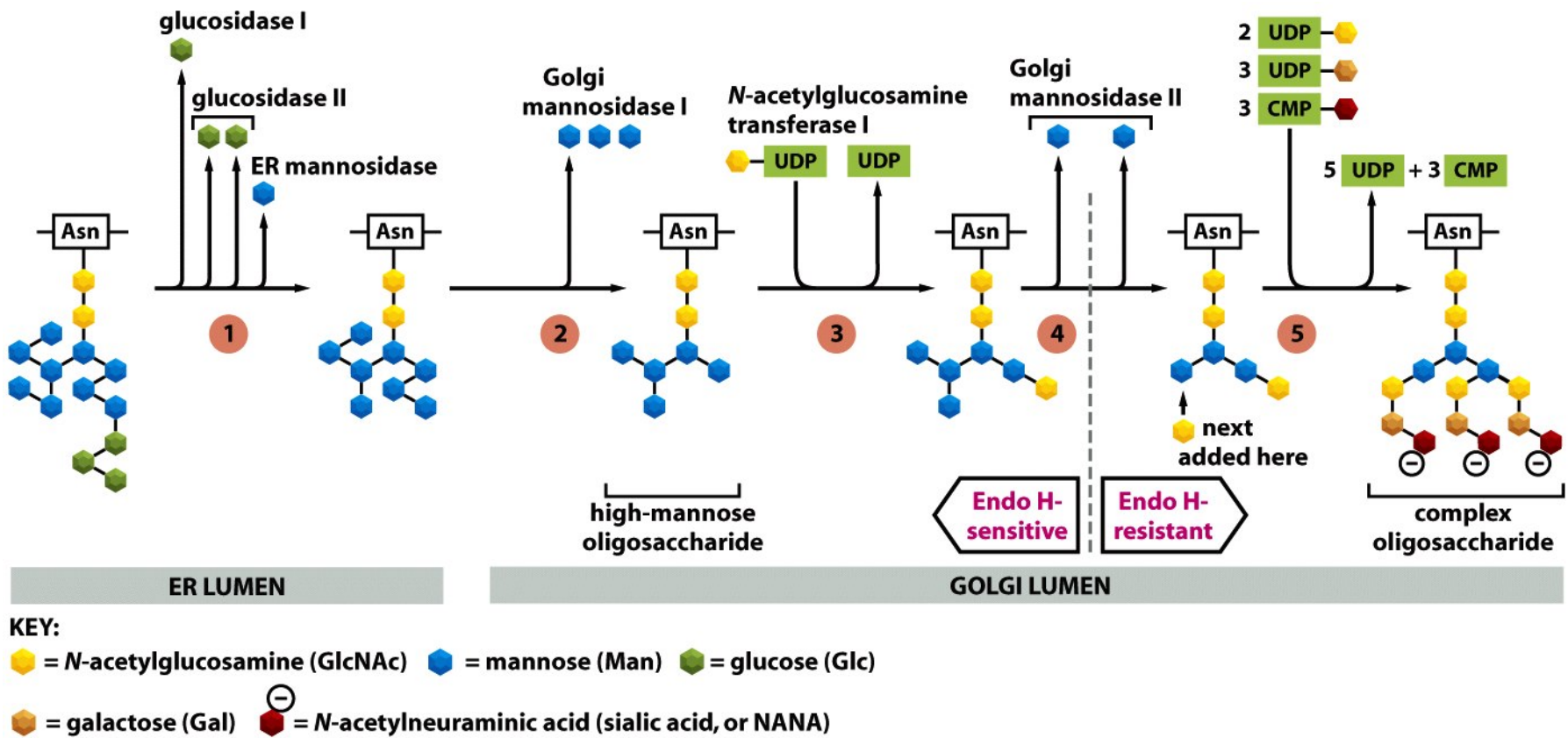
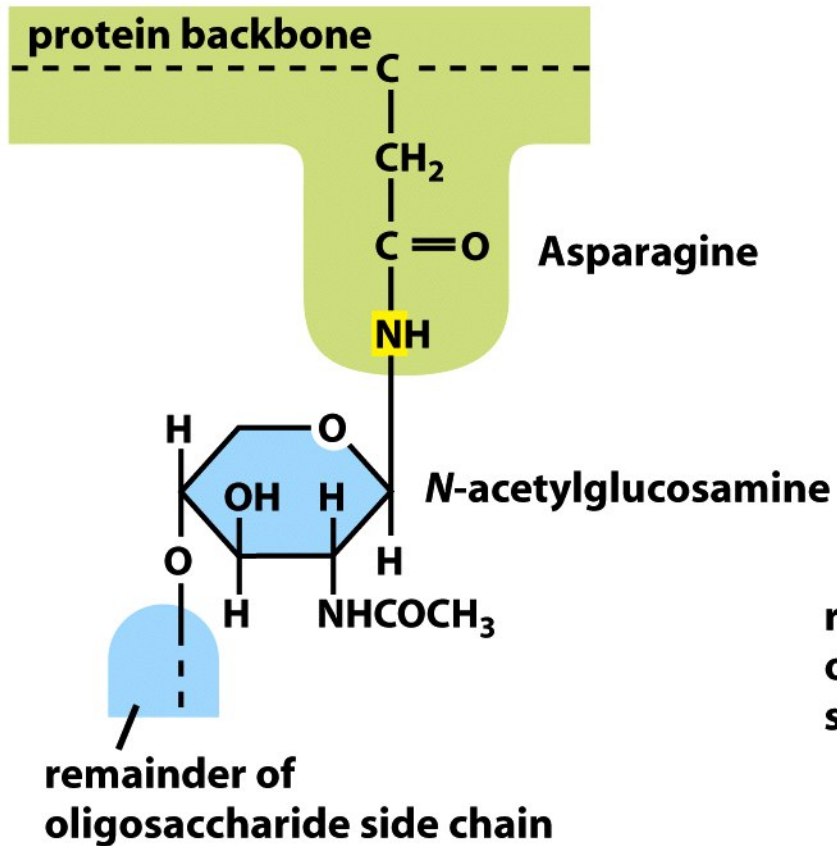
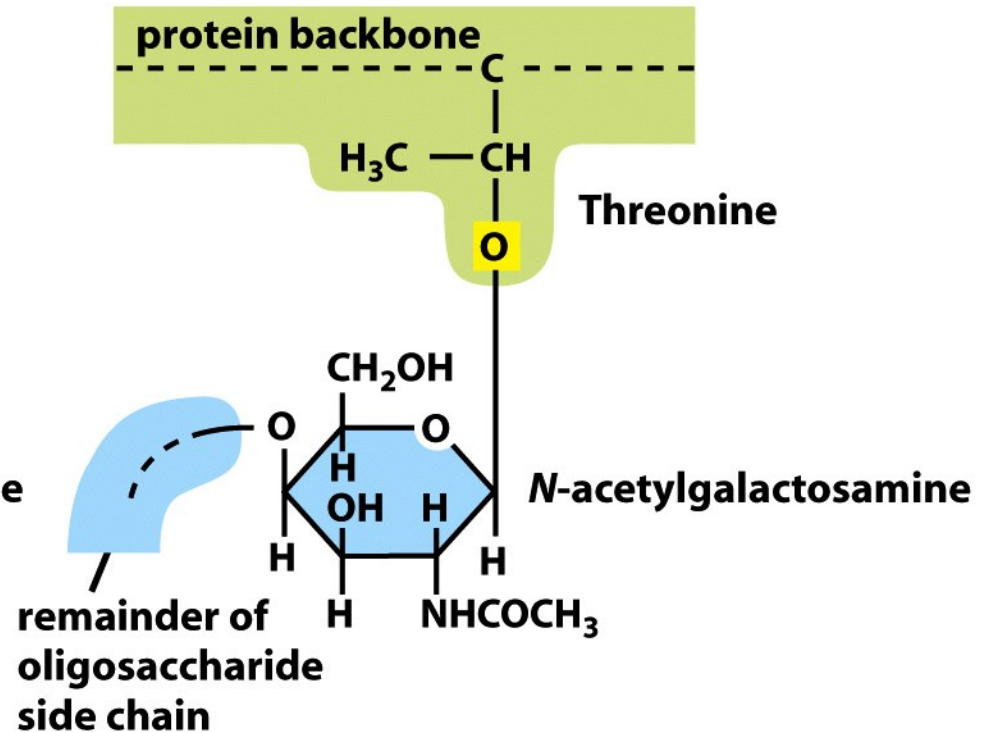


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N-LINKED GLYCOSYLATION



O-LINKED GLYCOSYLATION



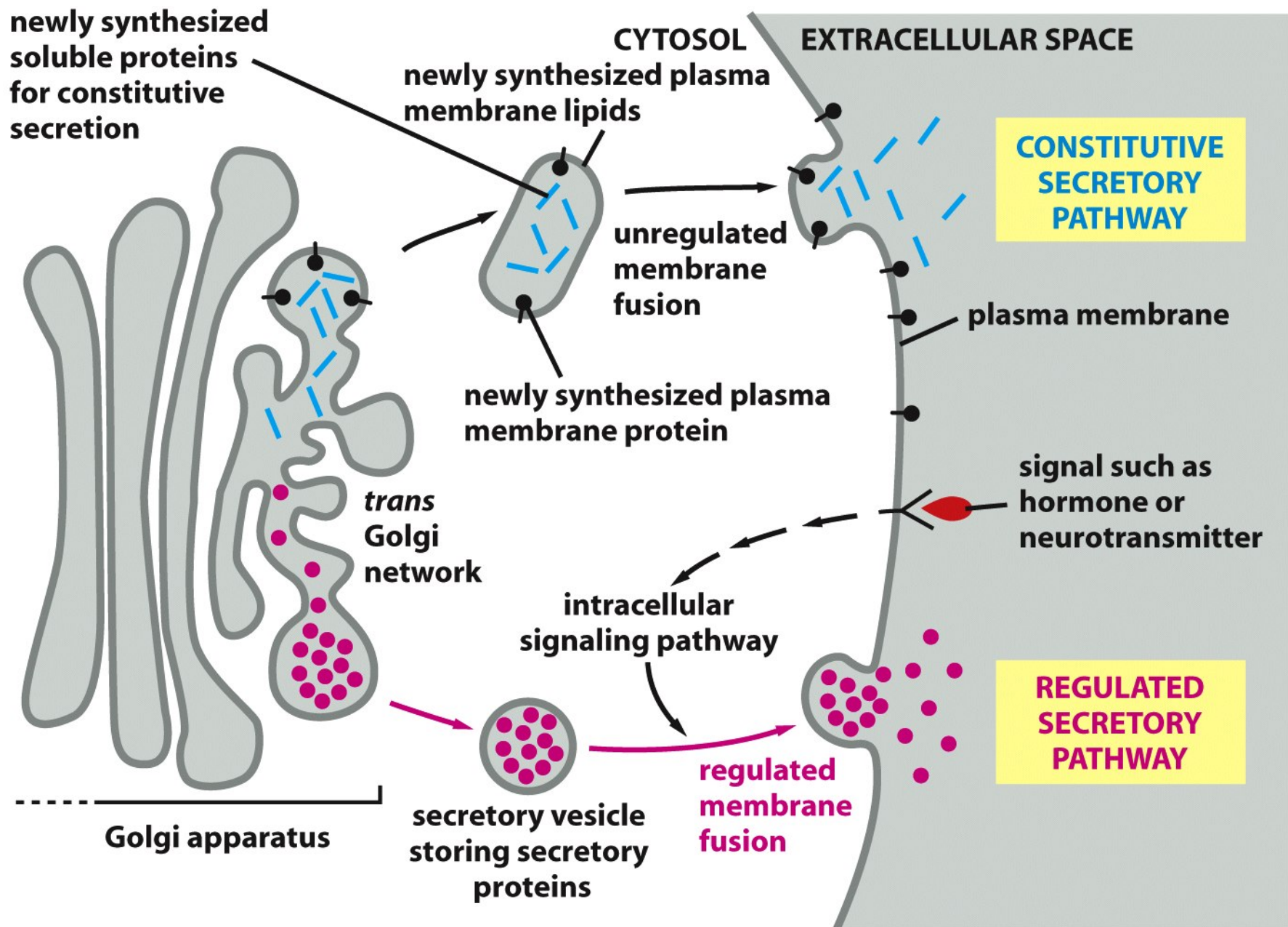
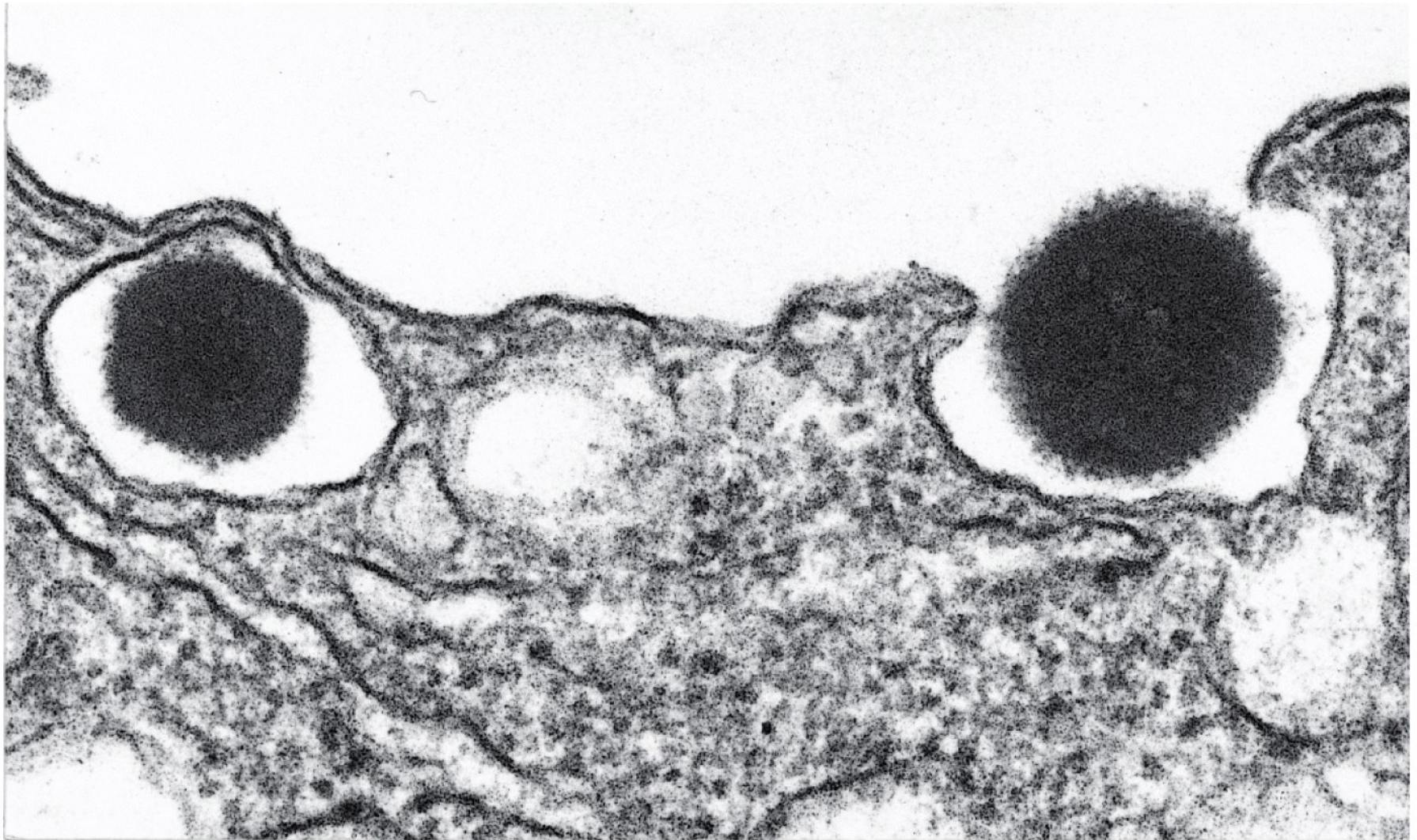


Figure 13-63 *Molecular Biology of the Cell* (© Garland Science 2008)



0.2 μm

Figure 13-66b *Molecular Biology of the Cell* (© Garland Science 2008)