

Nutrição e Metabolismo

RNM 0003



Sistema de endomembranas

Prof^a : LETICIA FRÖHLICH ARCHANGELO

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Organelas envoltas por membranas

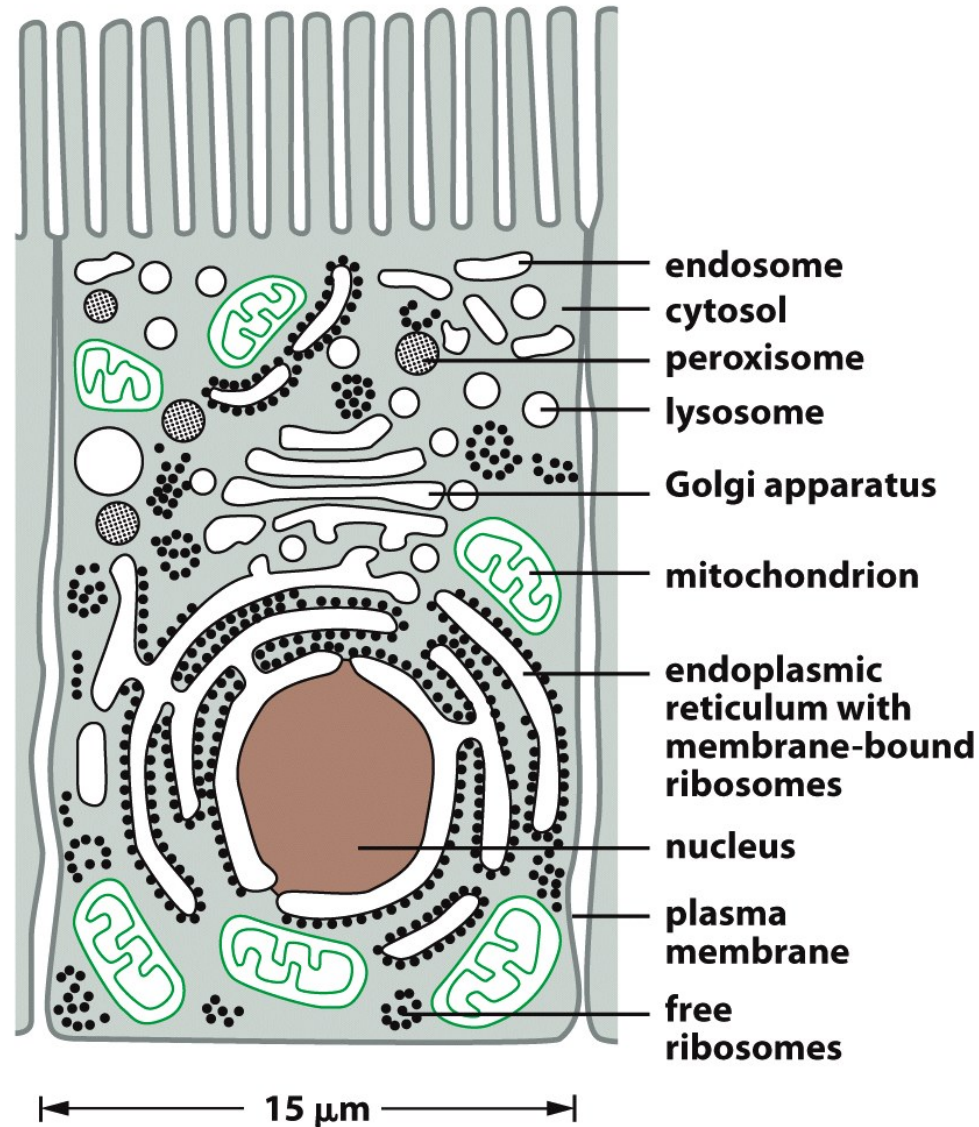


Figure 15-2 Essential Cell Biology 3/e (© Garland Science 2010)

Origem das organelas envoltas por membranas

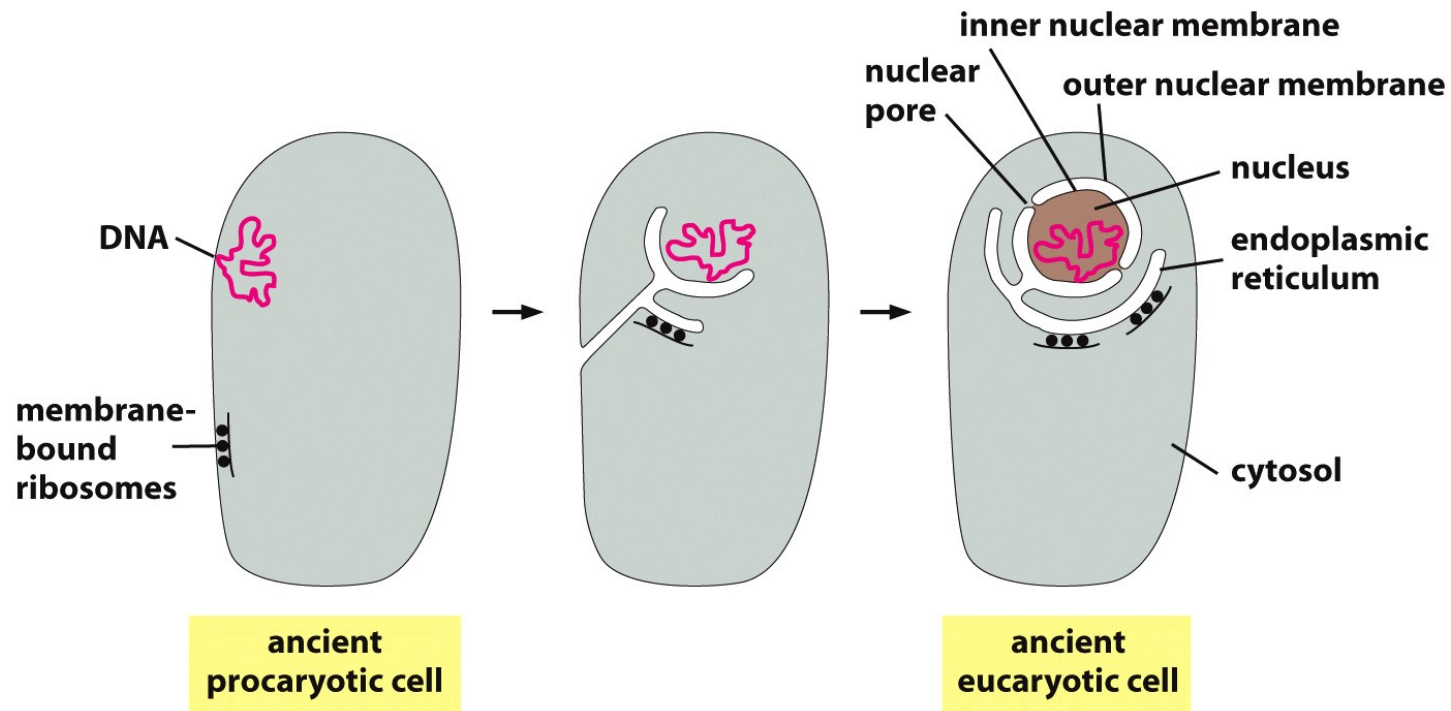


Figure 15-3 Essential Cell Biology 3/e (© Garland Science 2010)

Origem das organelas envoltas por membranas

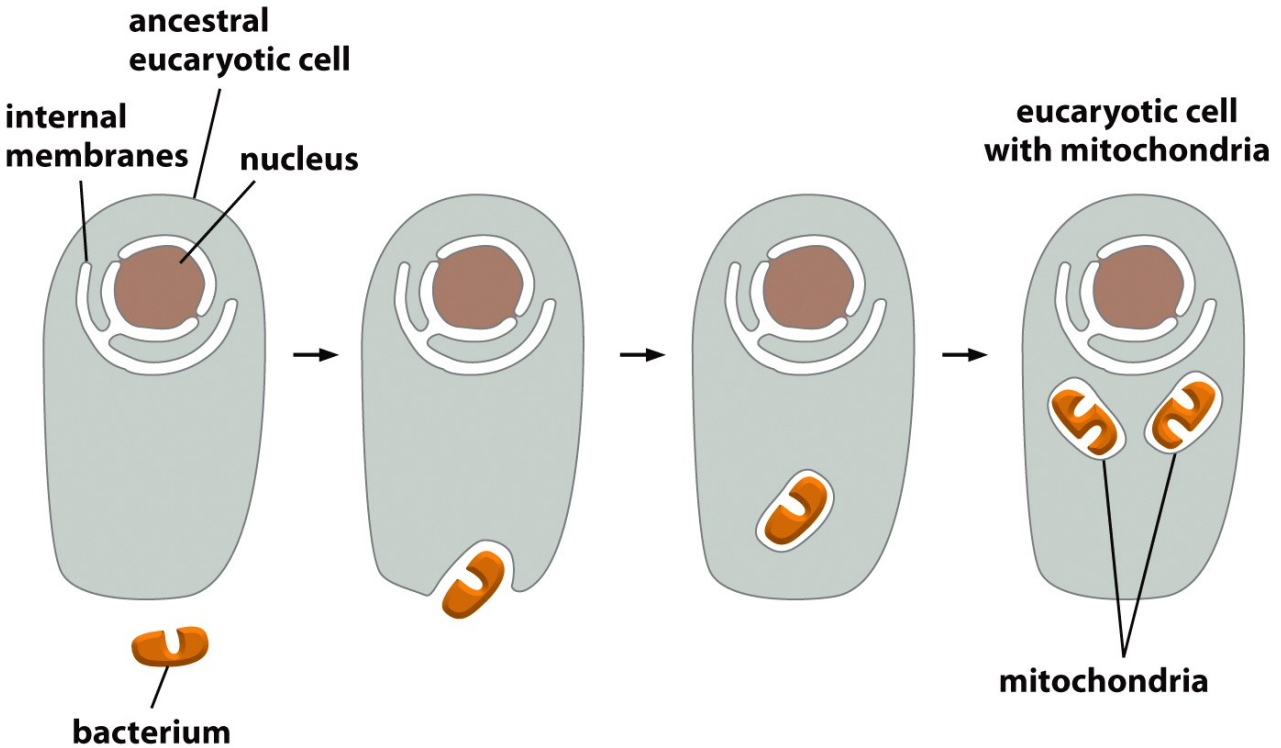


Figure 1-19 Essential Cell Biology 3/e (© Garland Science 2010)

Origem das organelas envoltas por membranas

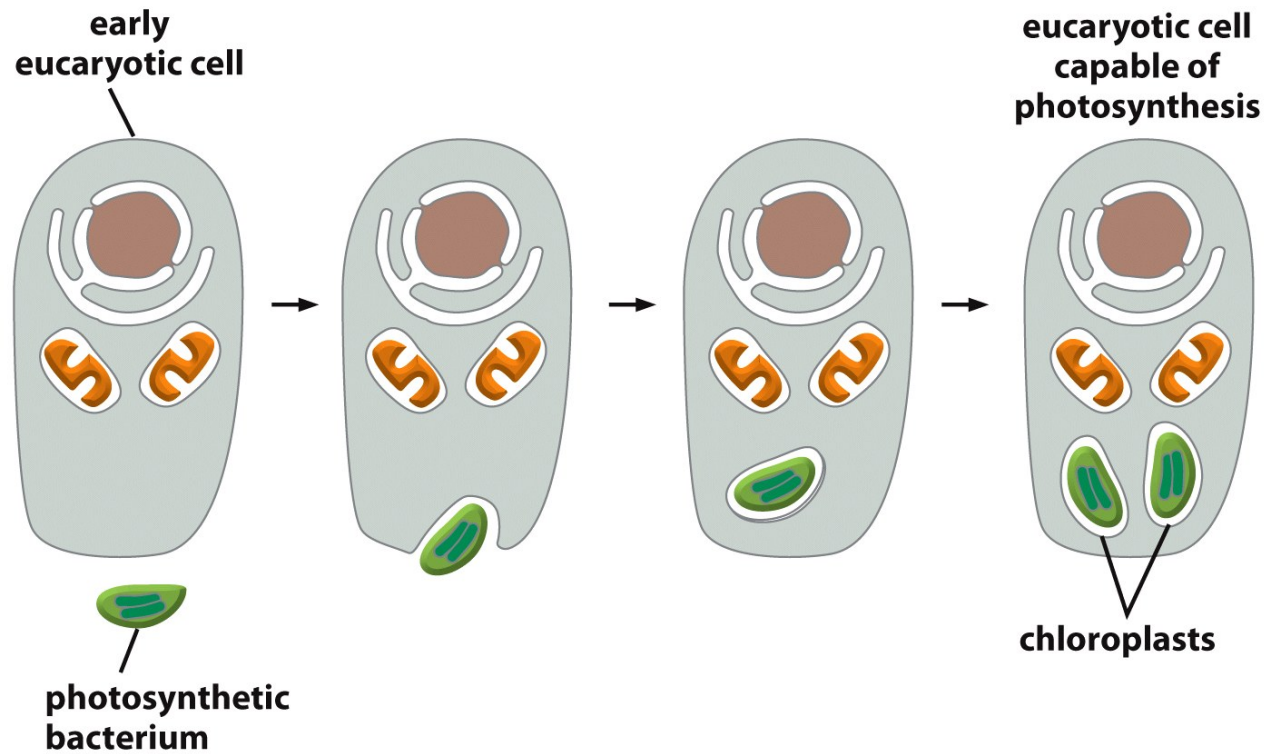


Figure 1-21 Essential Cell Biology 3/e (© Garland Science 2010)

Sistema endomembrana

Lúmen das organelas = meio extracelular

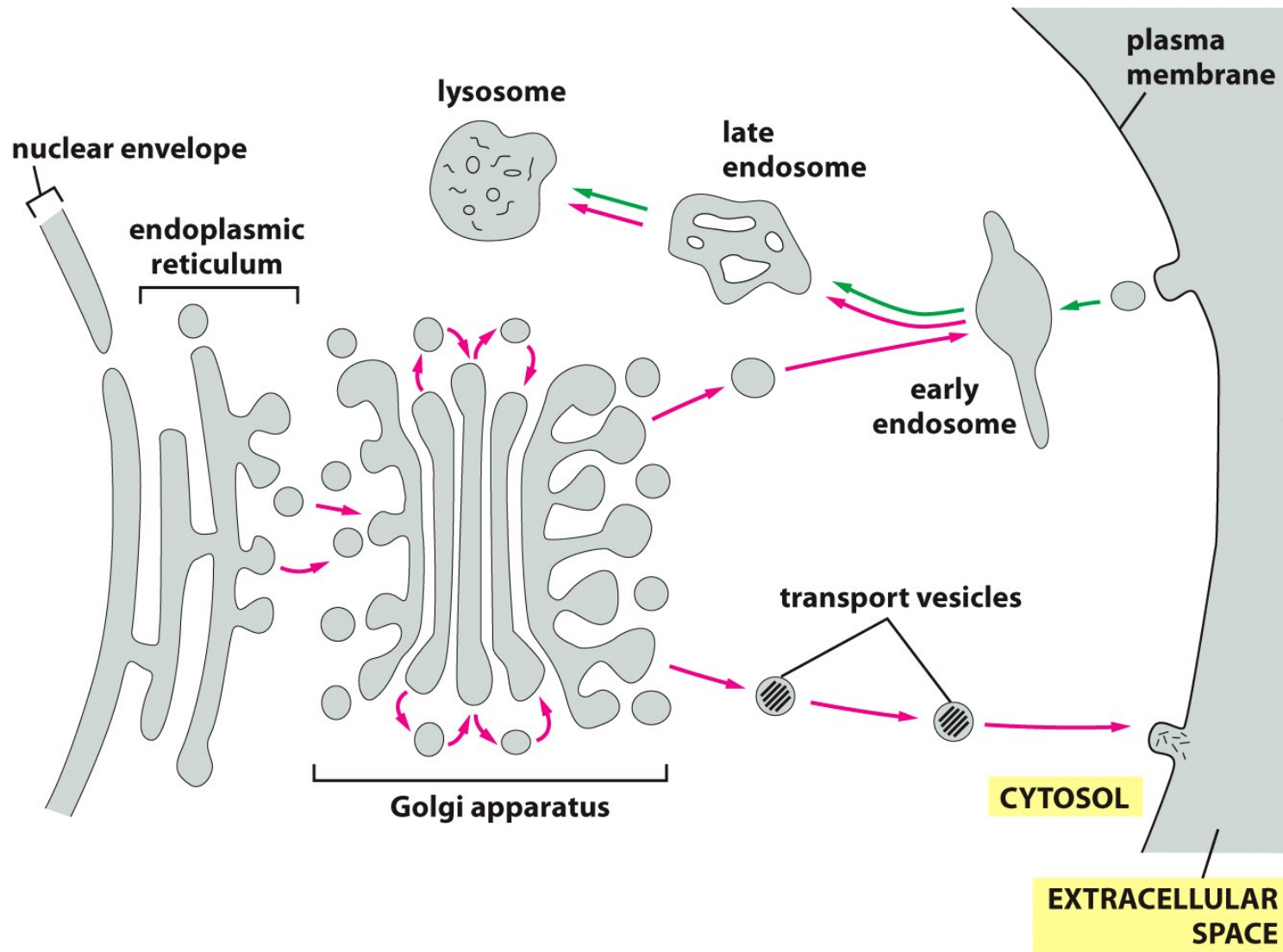
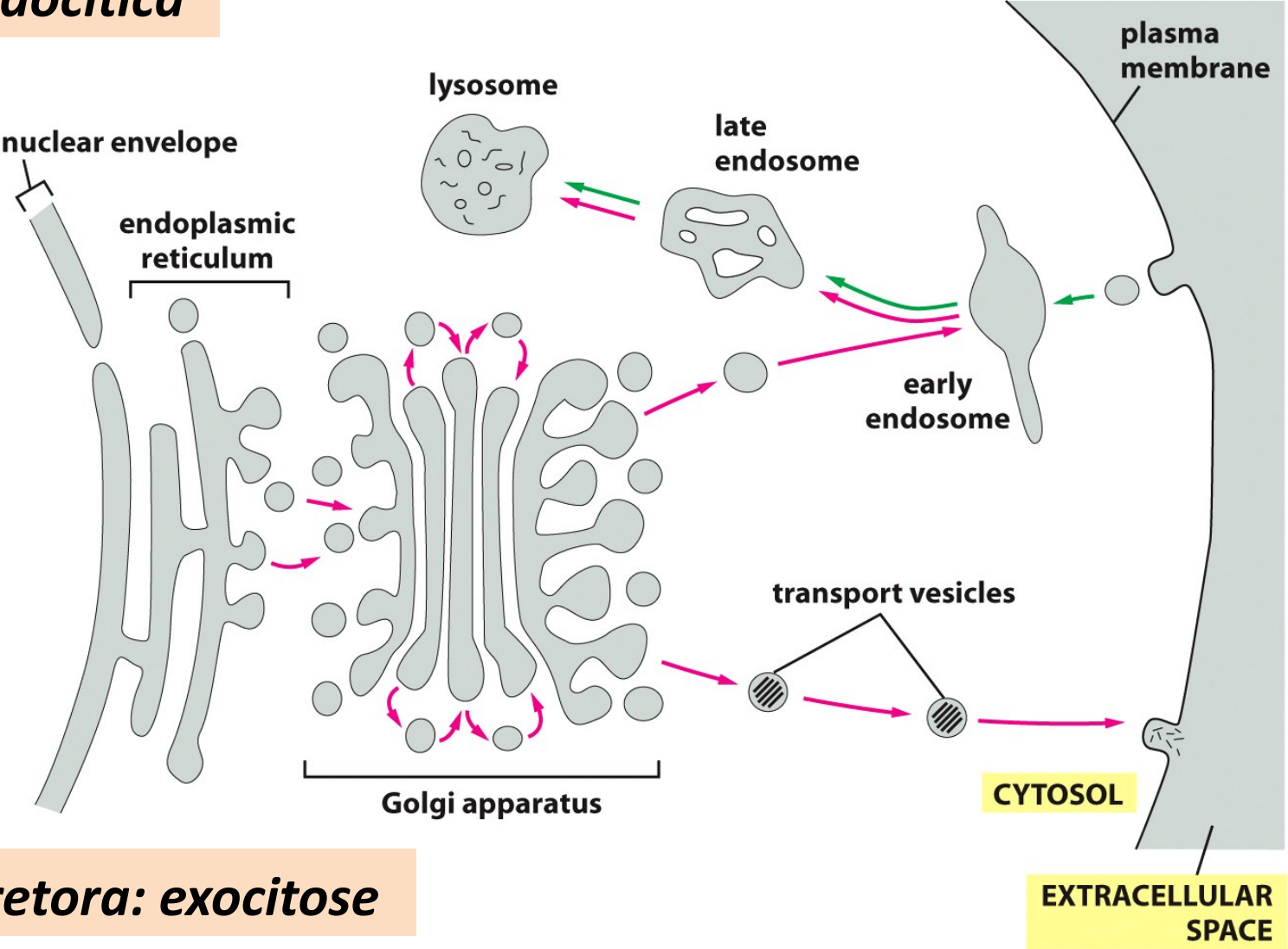


Figure 15-18 Essential Cell Biology 3/e (© Garland Science 2010)

Transporte vesicular

Via endocítica



Via secretora: exocitose

Figure 15-18 Essential Cell Biology 3/e (© Garland Science 2010)

Distribuição de proteínas

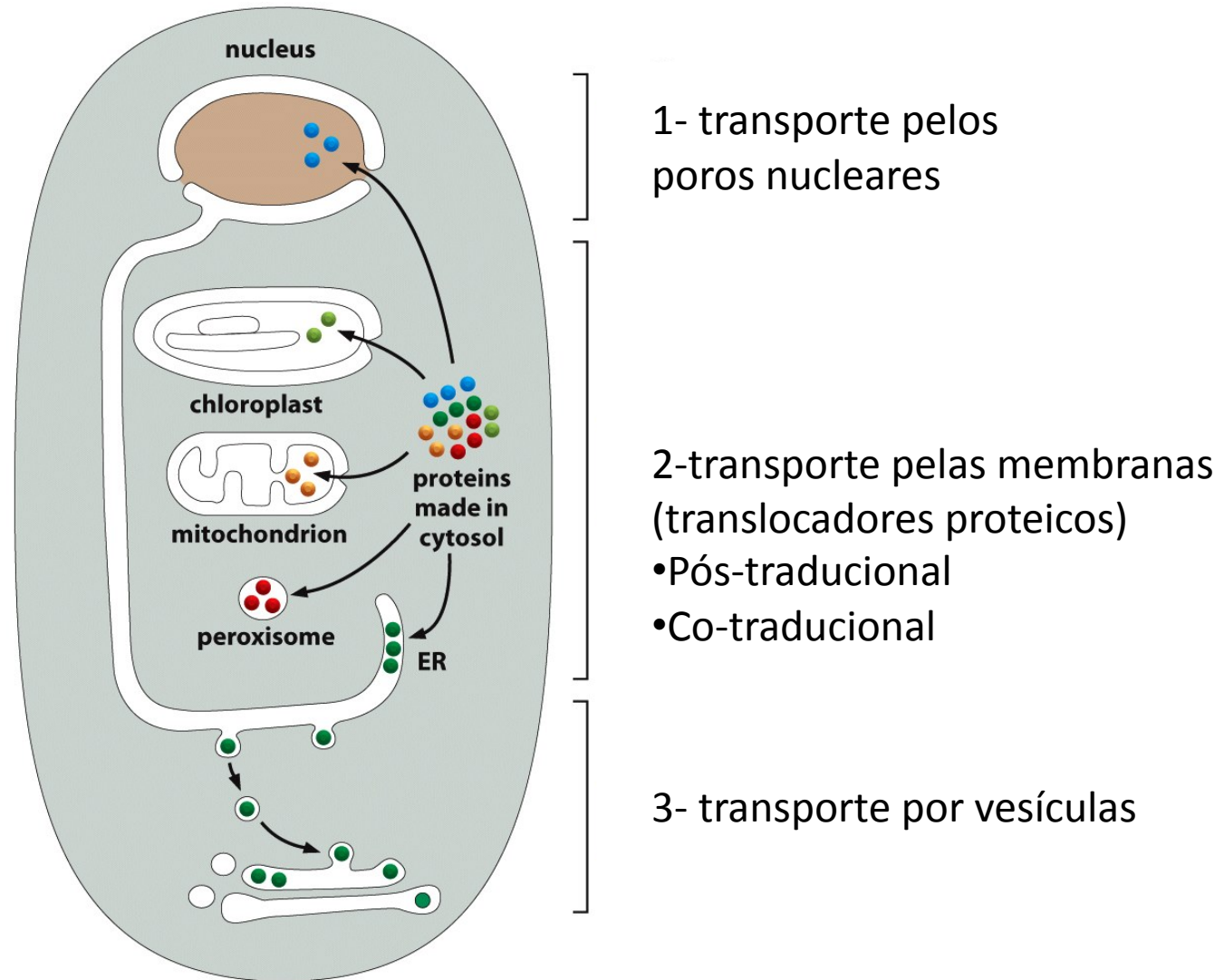
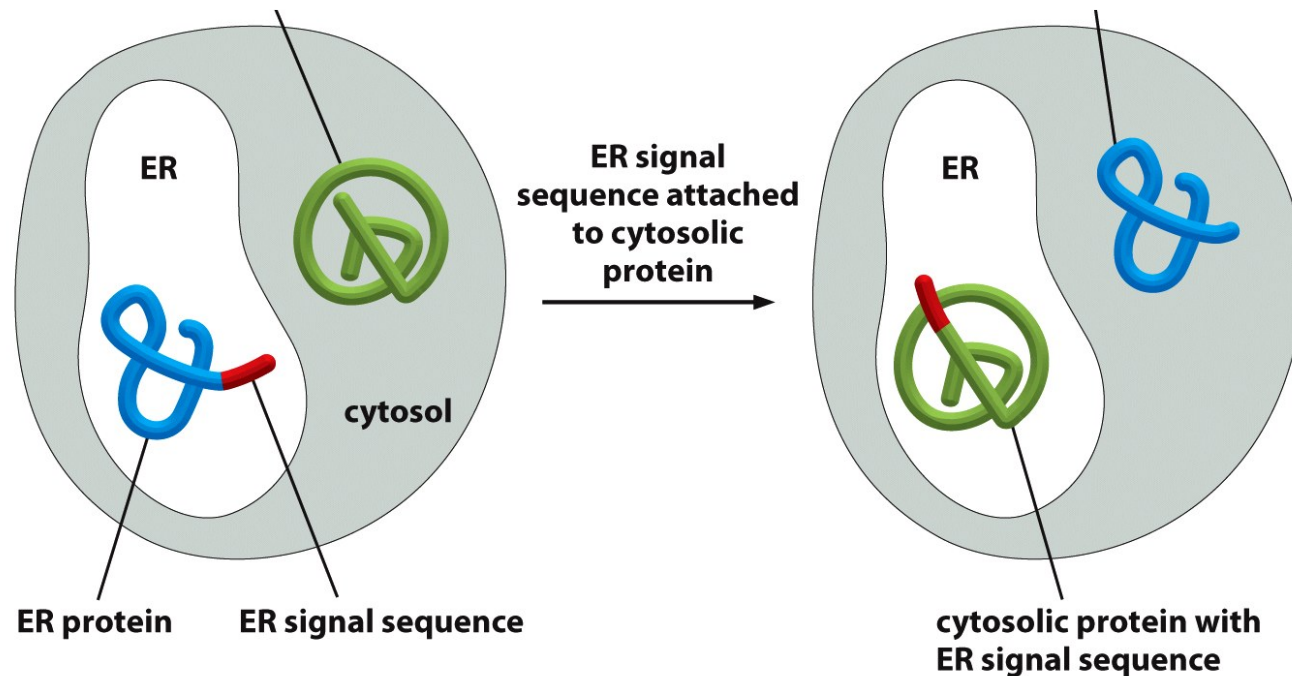


Figure 15-5 Essential Cell Biology 3/e (© Garland Science 2010)

Organelas importam proteínas por 3 mecanismos

Sequências-sinal de endereçamento direcionam proteínas para compartimentos específicos



As proteínas que possuem sinal de distribuição são endereçadas, as que não possuem ficam residentes no citoplasma

Retículo endoplasmático

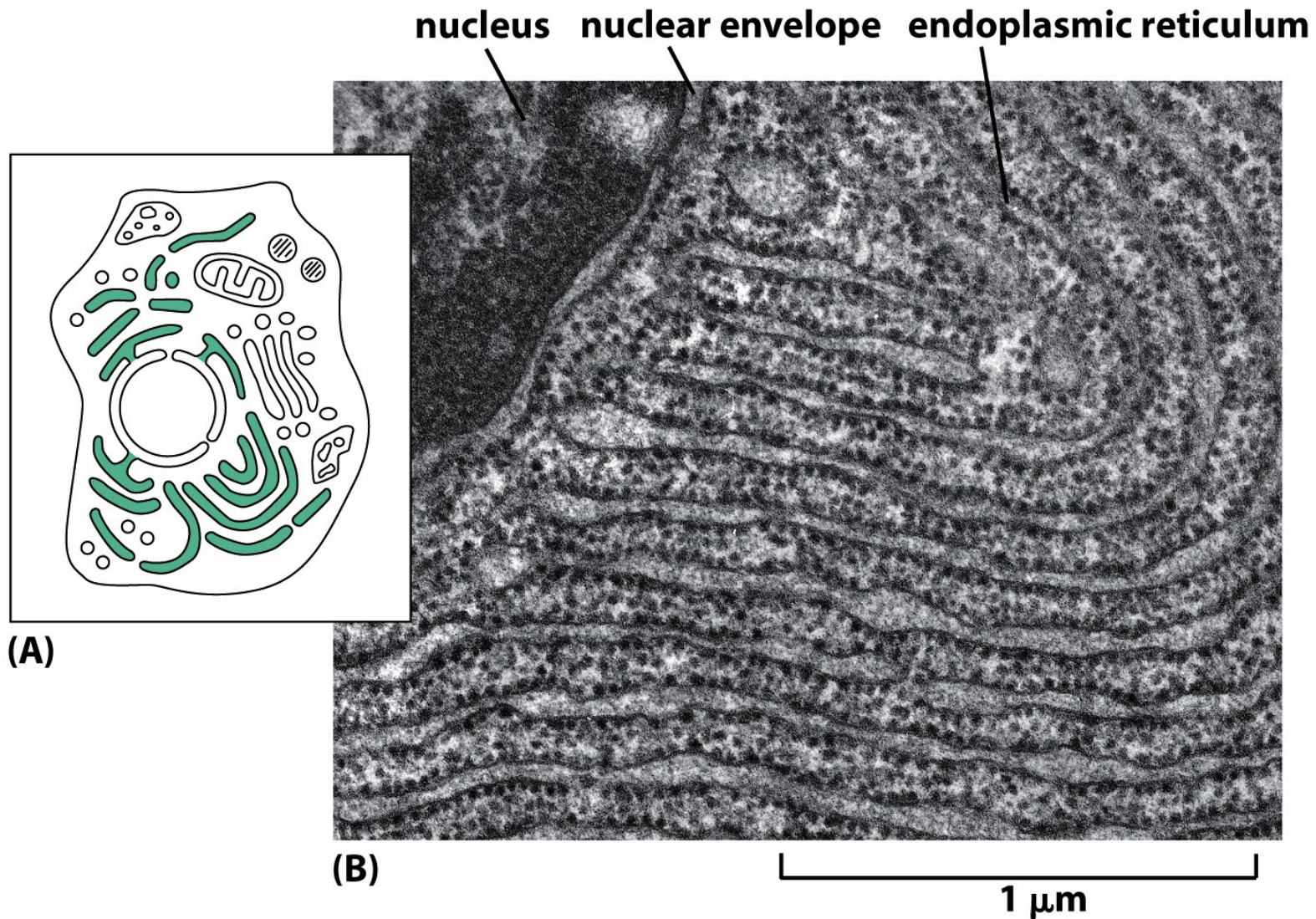
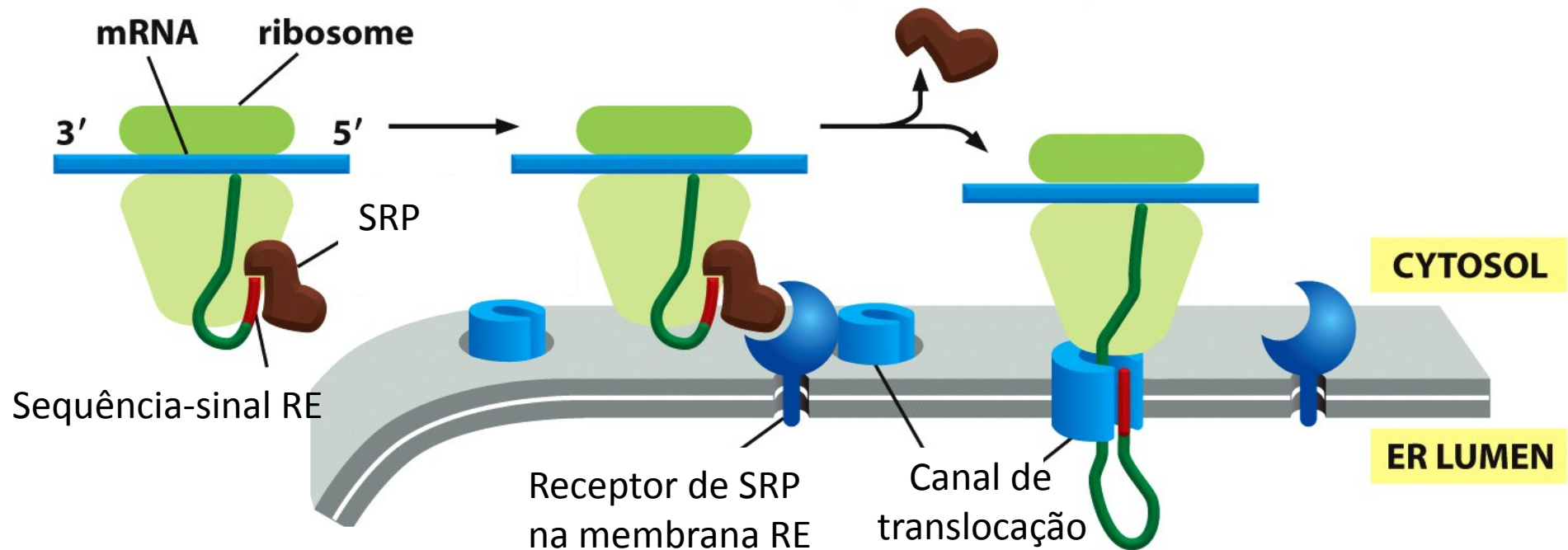


Figure 1-22 Essential Cell Biology 3/e (© Garland Science 2010)

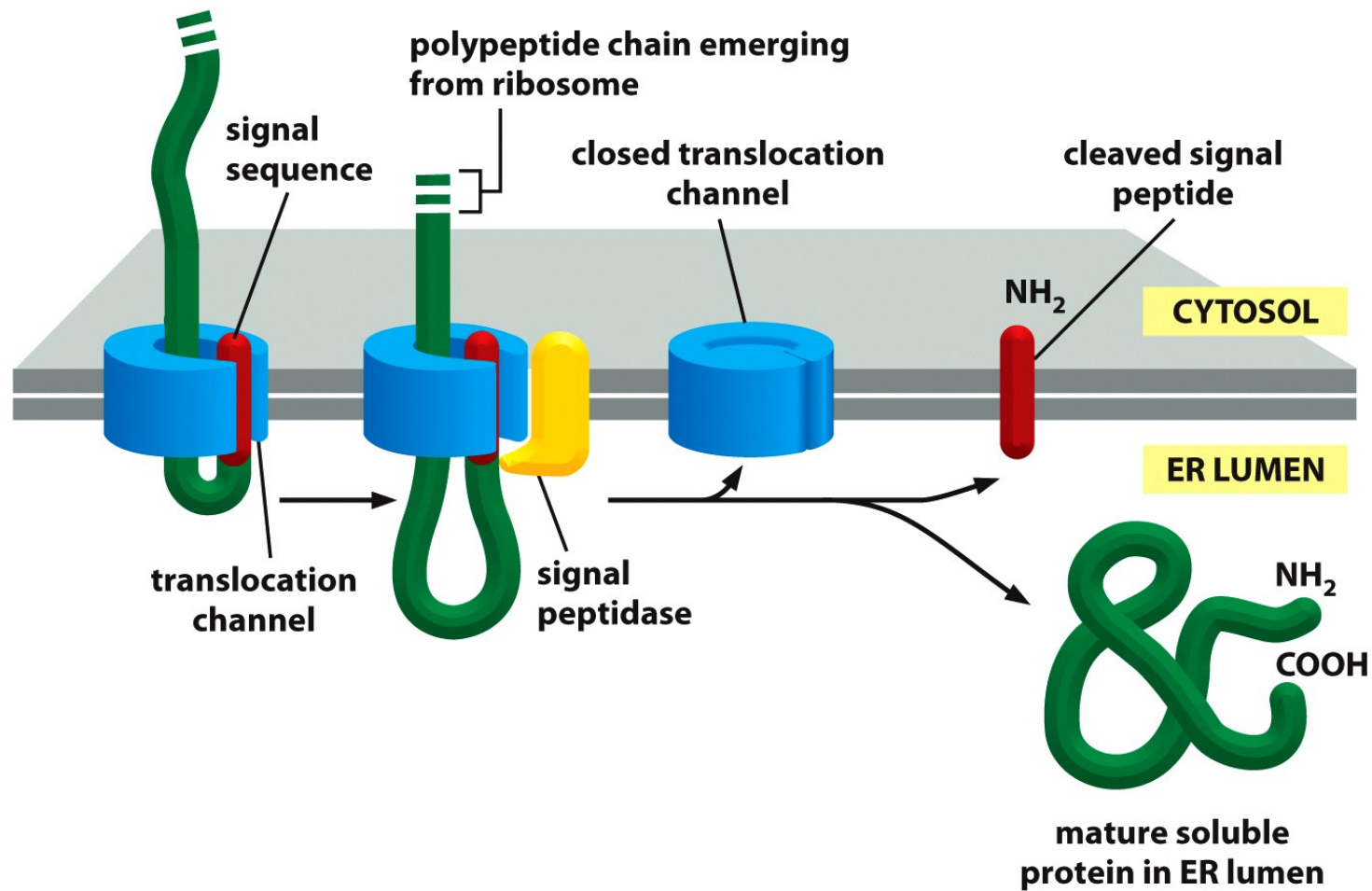
As proteínas entram no RE enquanto são sintetizadas



Sequência-sinal de RE : aminoácidos hidrofóbicos

Rota pela membrana do RE antes da cadeia polipeptídica estar completa

Proteínas solúveis são liberadas no lúmen do RE



Peptidase-sinal remove a sequencia sinal da cadeia polipeptidica

Sinais de início e de parada determinam o arranjo de proteína integral de membrana

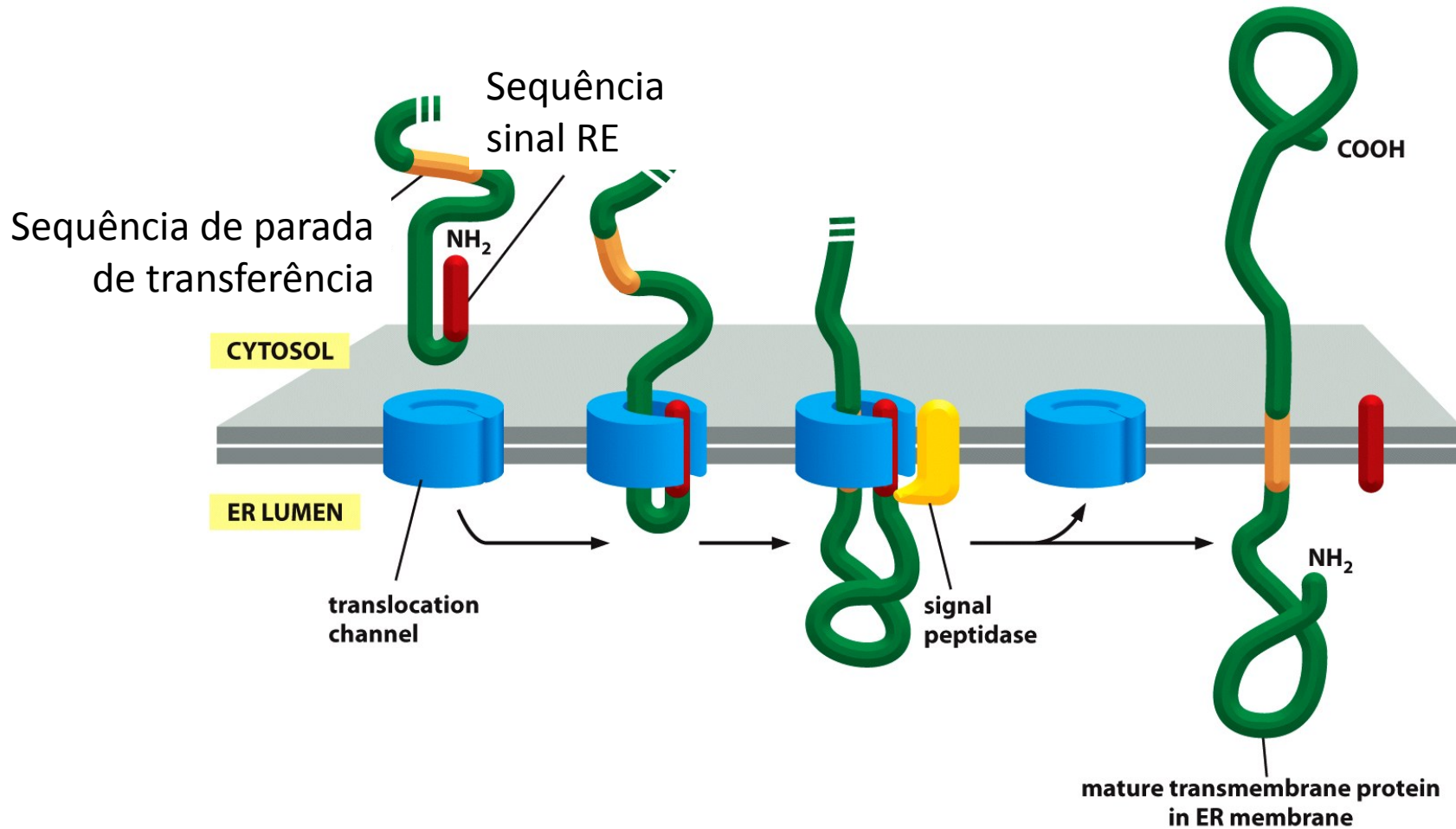
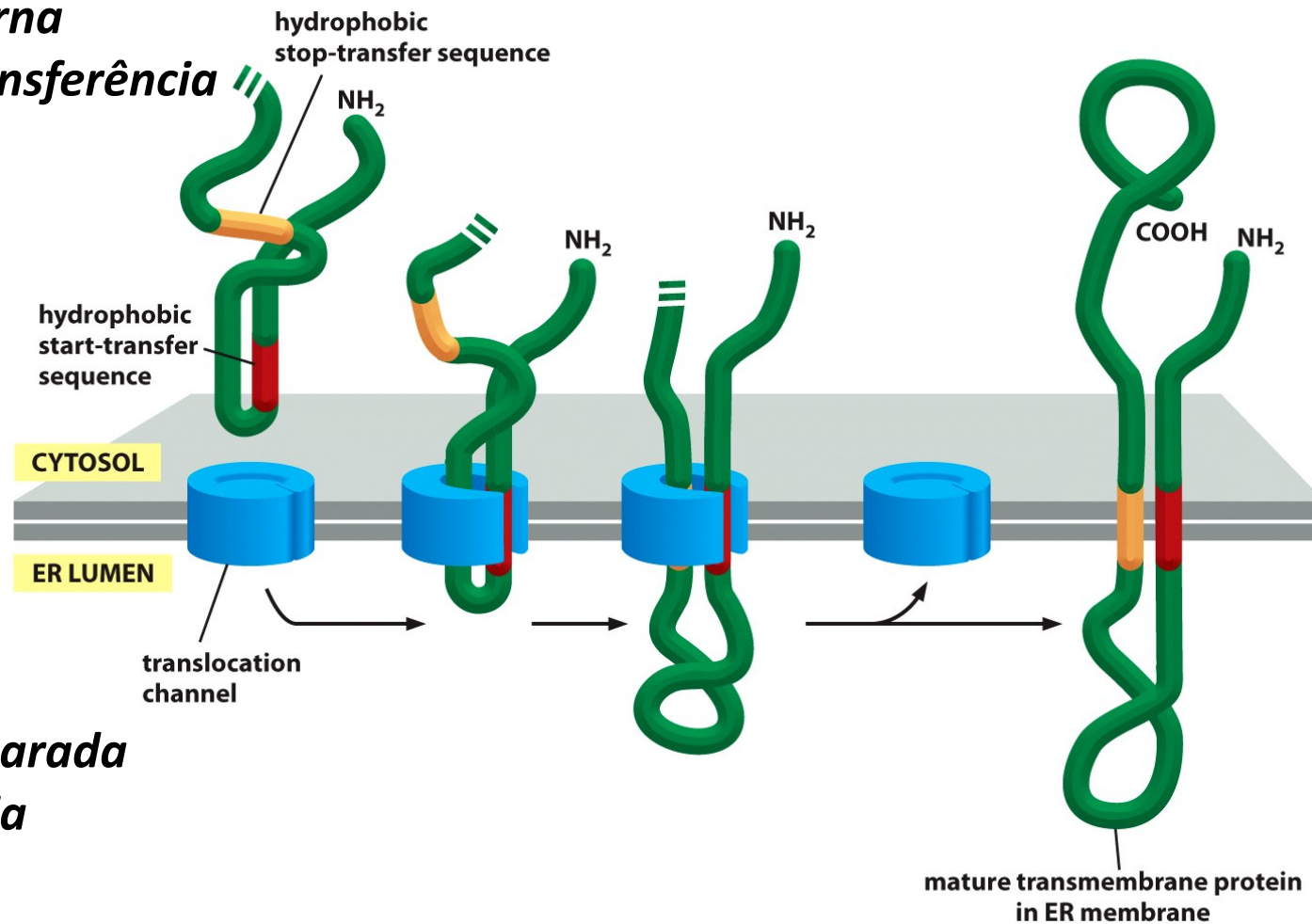


Figure 15-16 Essential Cell Biology 3/e (© Garland Science 2010)

Proteína transmembrana unipasso

Sinais de início e de parada determinam o arranjo de proteína integral de membrana

Sequência interna de início de transferência



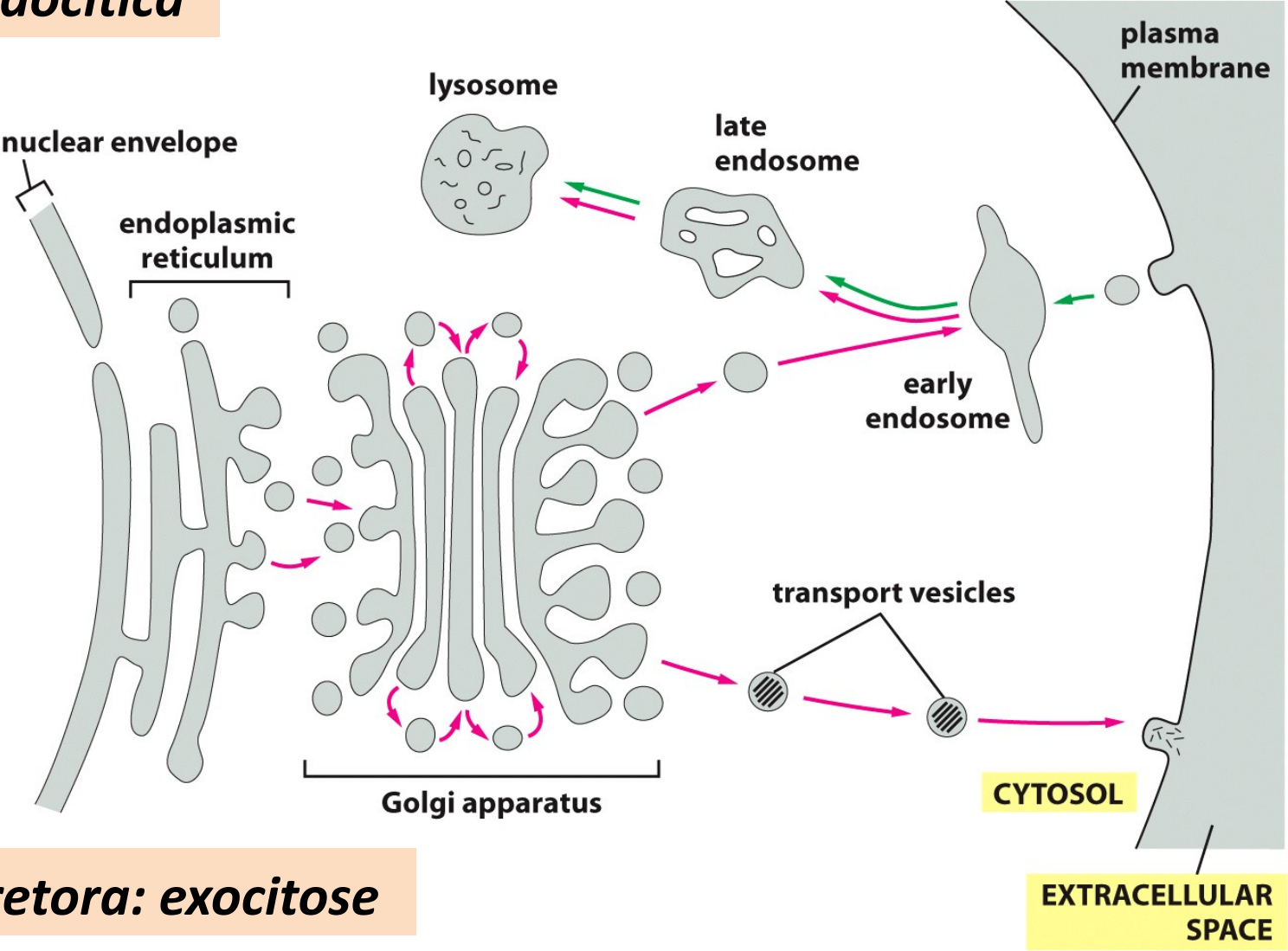
Sequência de parada de transferência

Figure 15-17 Essential Cell Biology 3/e (© Garland Science 2010)

Proteína transmembrana multipasso

Transporte vesicular

Via endocítica



Via secretora: exocitose

Figure 15-18 Essential Cell Biology 3/e (© Garland Science 2010)

Brotamento de vesículas

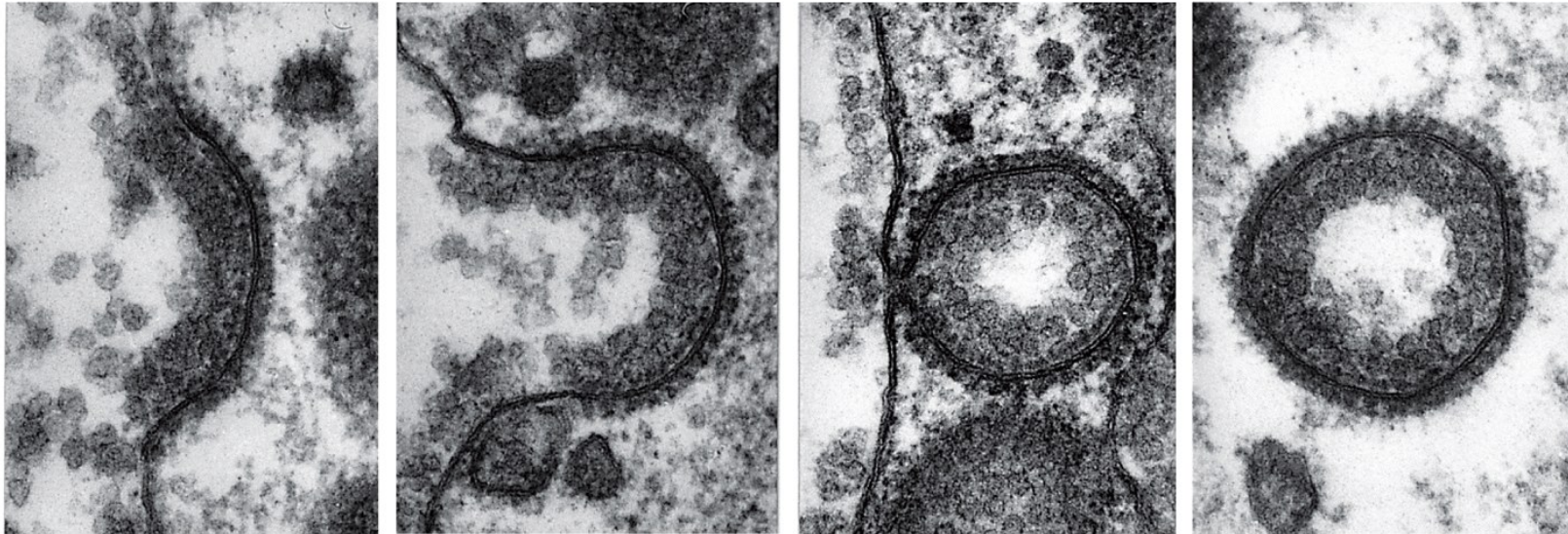
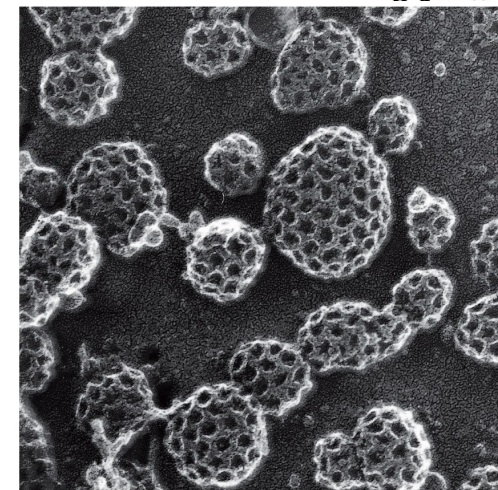


Figure 15-19a Essential Cell Biology 3/e (© Garland Science 2010)

vesículas revestidas de capa proteica



0.2 μm

Figure 15-19b Essential Cell Biology 3/e (© Garland Science 2010)

Vesículas revestidas transportam moléculas cargo

- dar forma no brotamento
- captar moléculas cargo

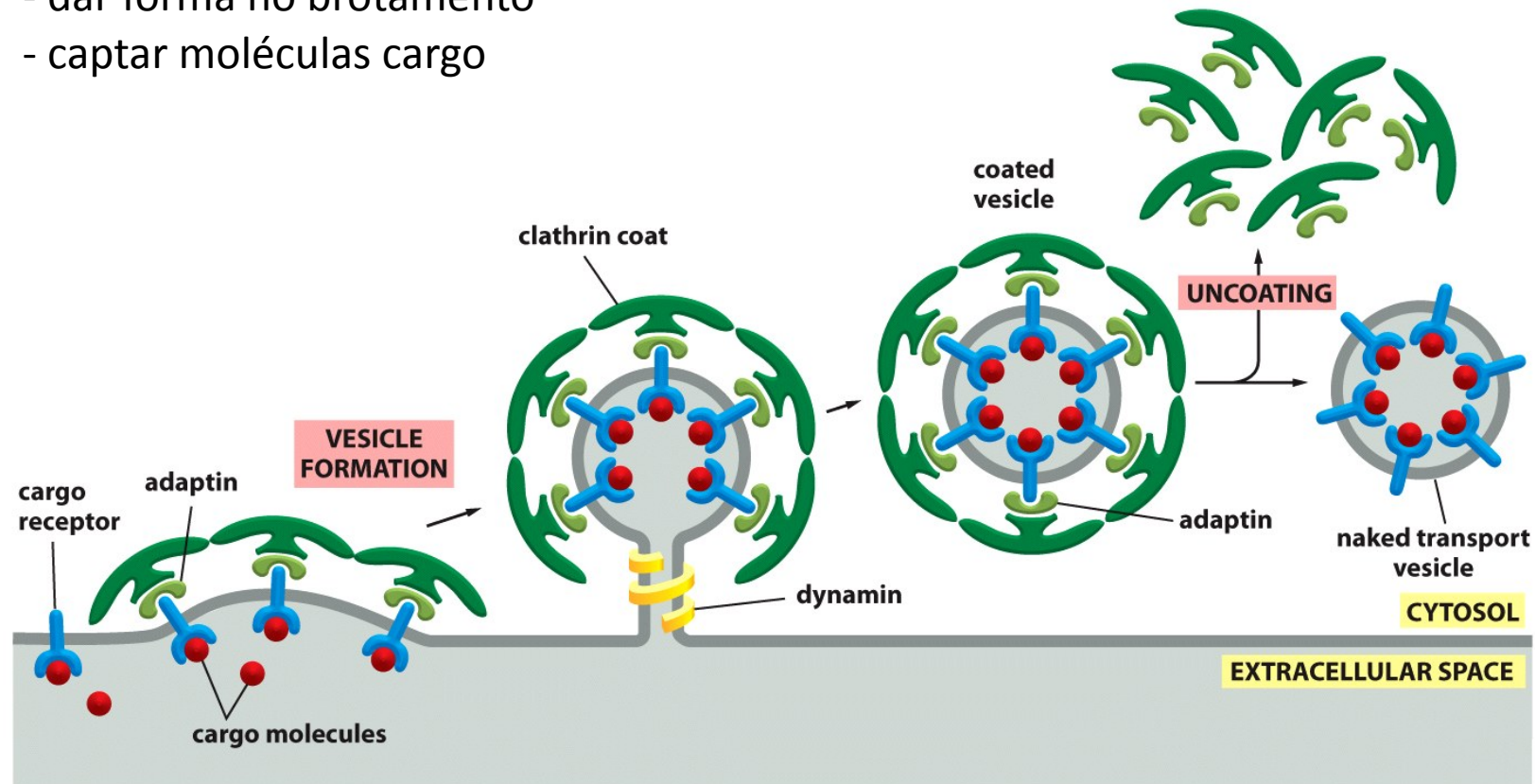


Figure 15-20 Essential Cell Biology 3/e (© Garland Science 2010)

Ancoramento de vesículas depende de aprisionamento e SNAREs

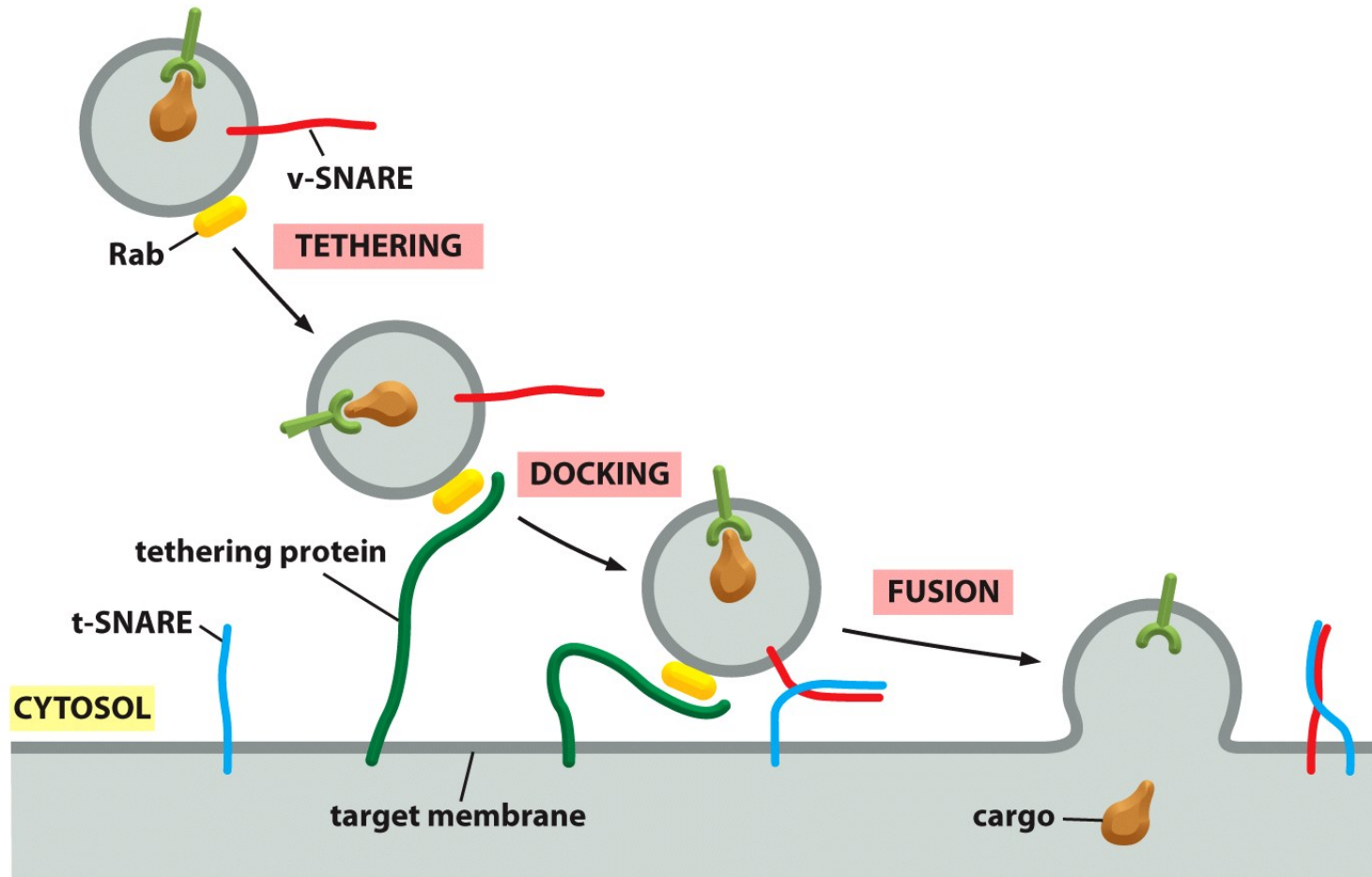


Figure 15-21 Essential Cell Biology 3/e (© Garland Science 2010)

SNAREs auxiliam na fusão das membranas

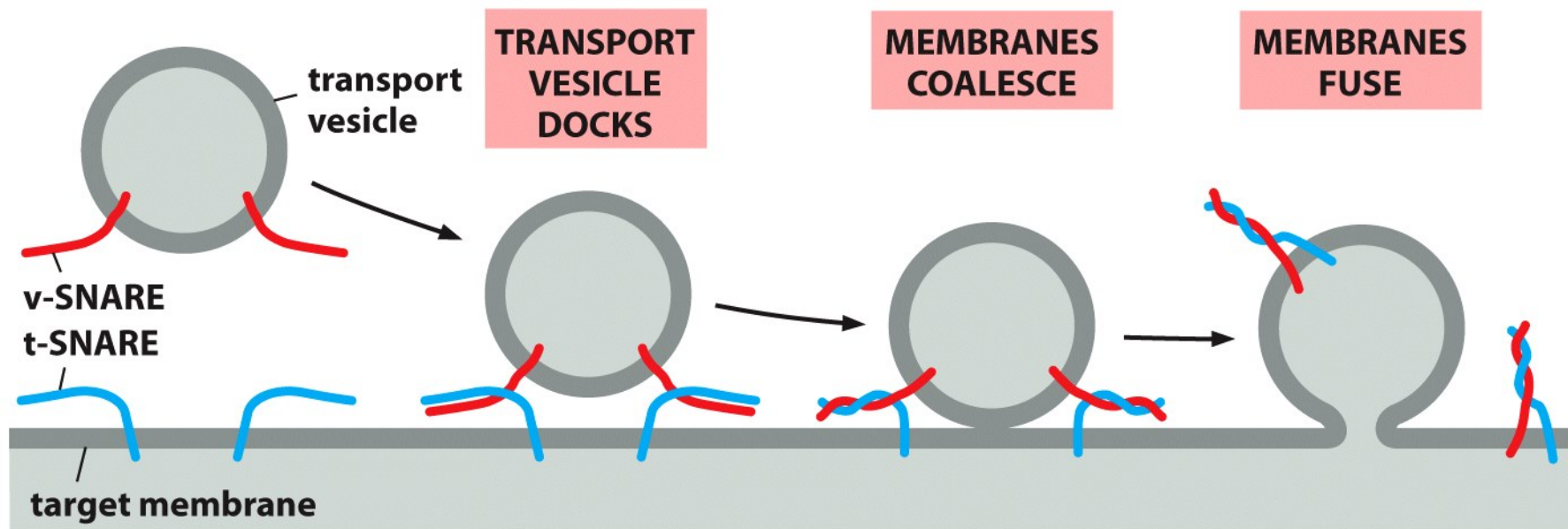
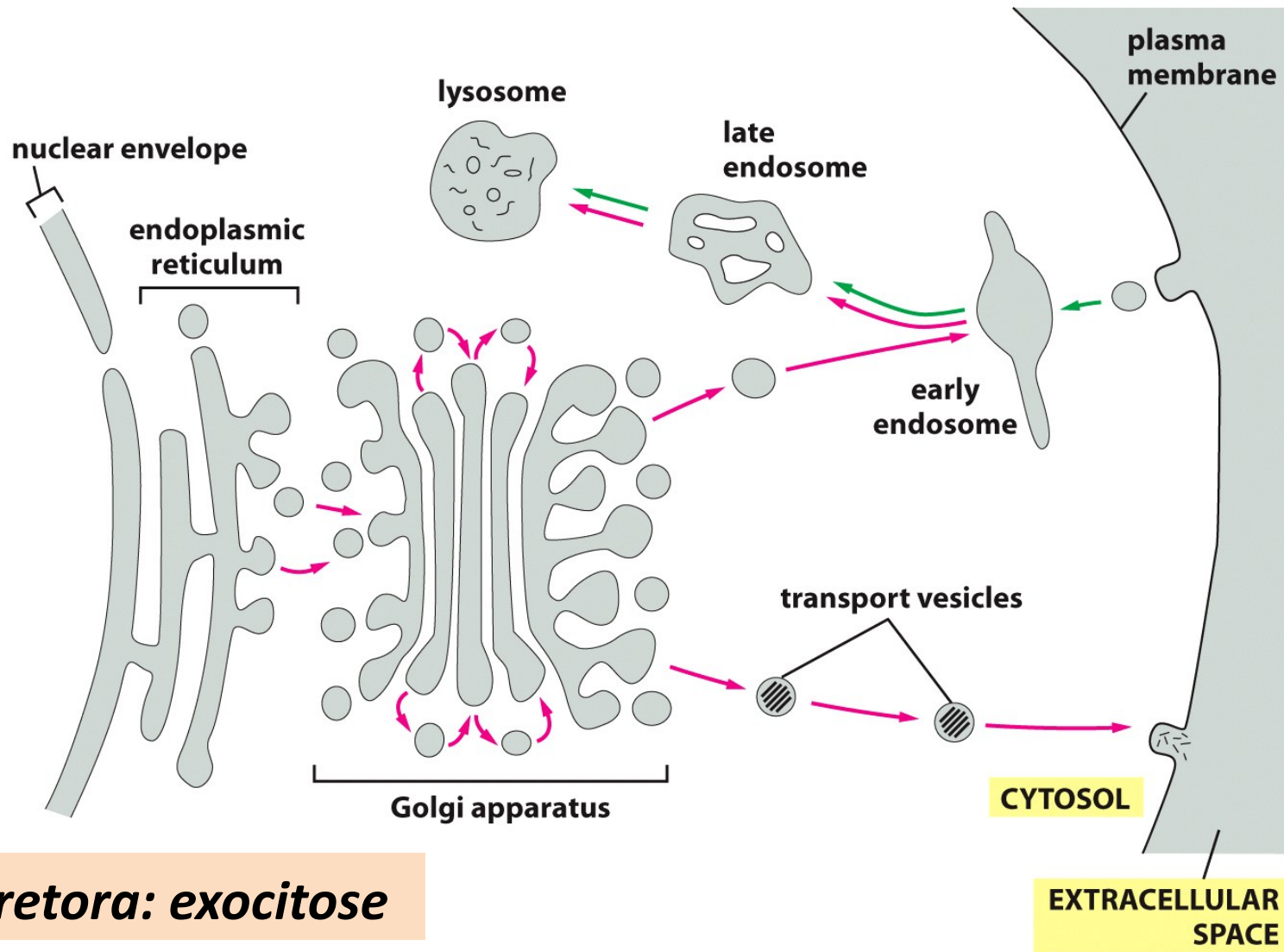


Figure 15-22 Essential Cell Biology 3/e (© Garland Science 2010)

Via secretora



Via secretora: exocitose

Figure 15-18 Essential Cell Biology 3/e (© Garland Science 2010)

Vias secretoras: Proteínas modificadas covalentemente no RE

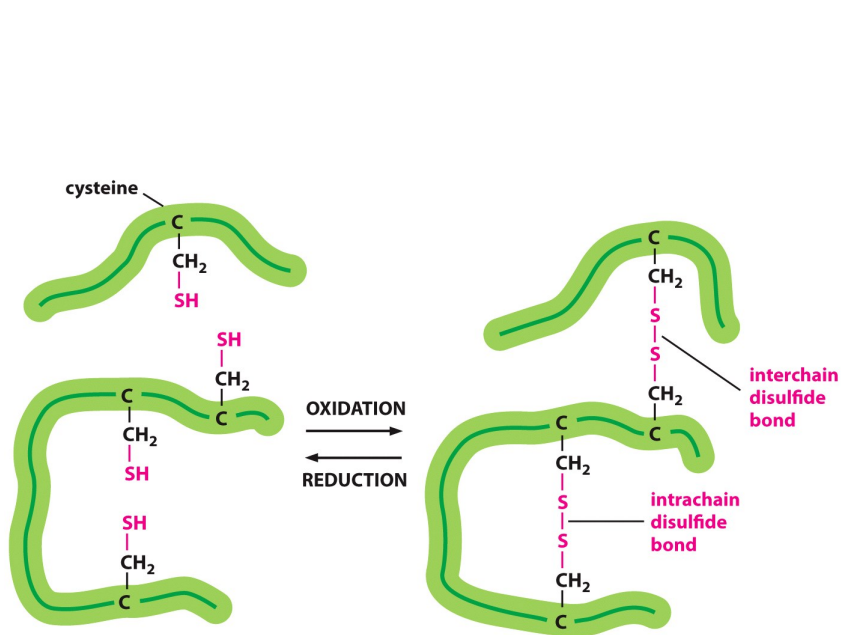


Figure 4-26 Essential Cell Biology 3/e (© Garland Science 2010)

Pontes dissulfeto

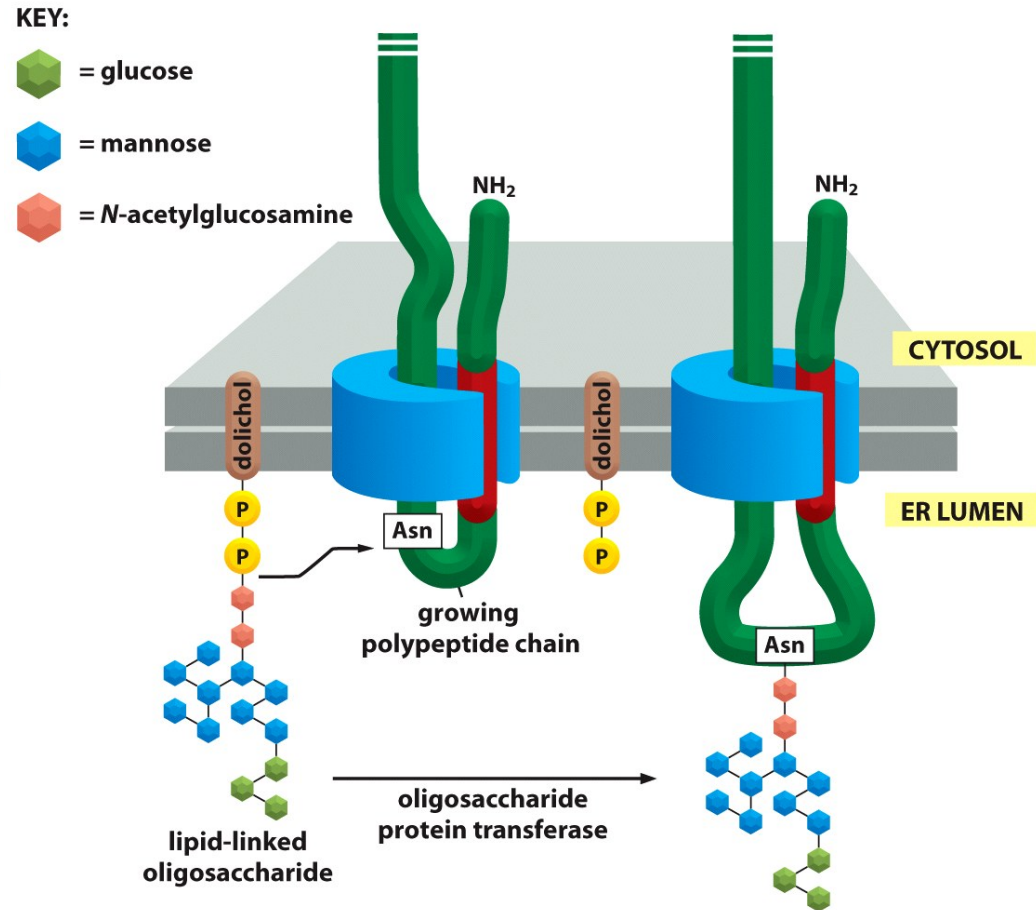


Figure 15-23 Essential Cell Biology 3/e (© Garland Science 2010)

Glicosilação

oligosacarídeos N-ligados

Vias secretoras: controle de qualidade no RE

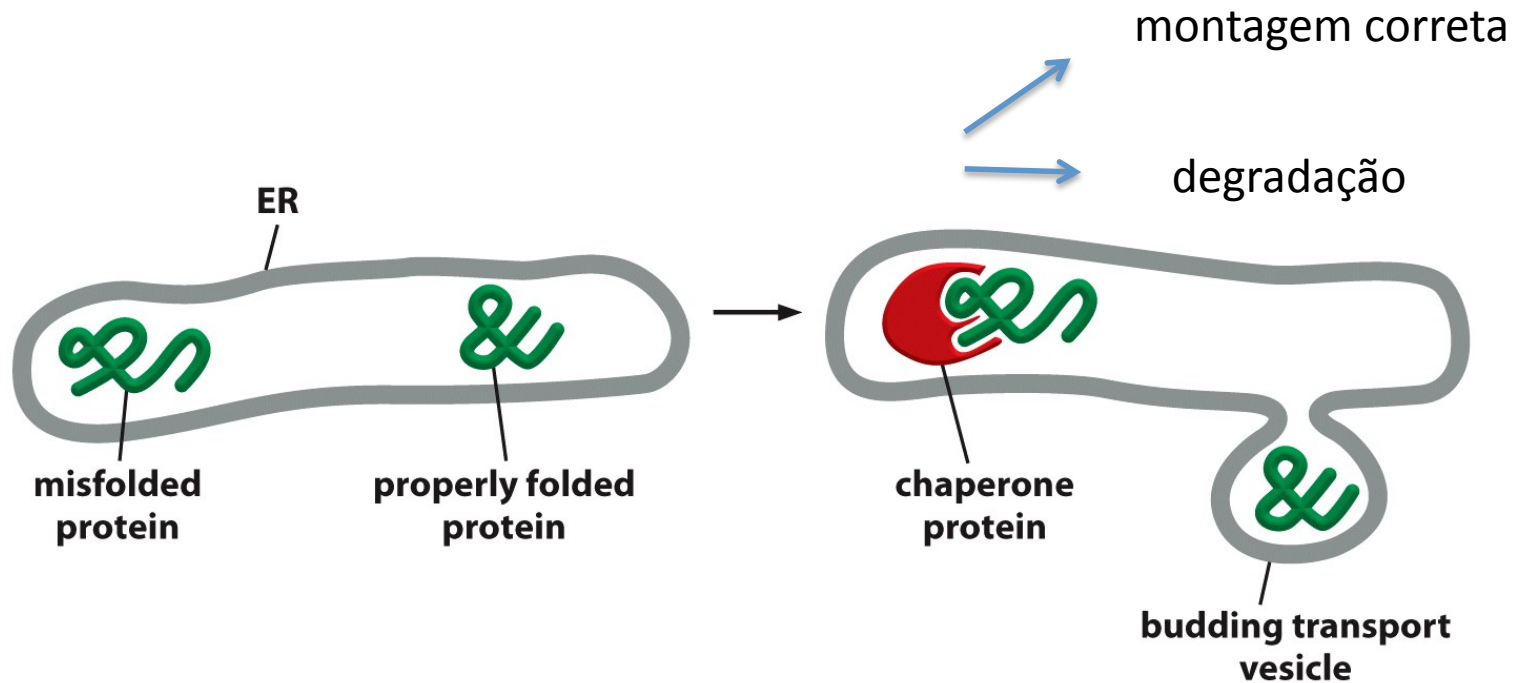
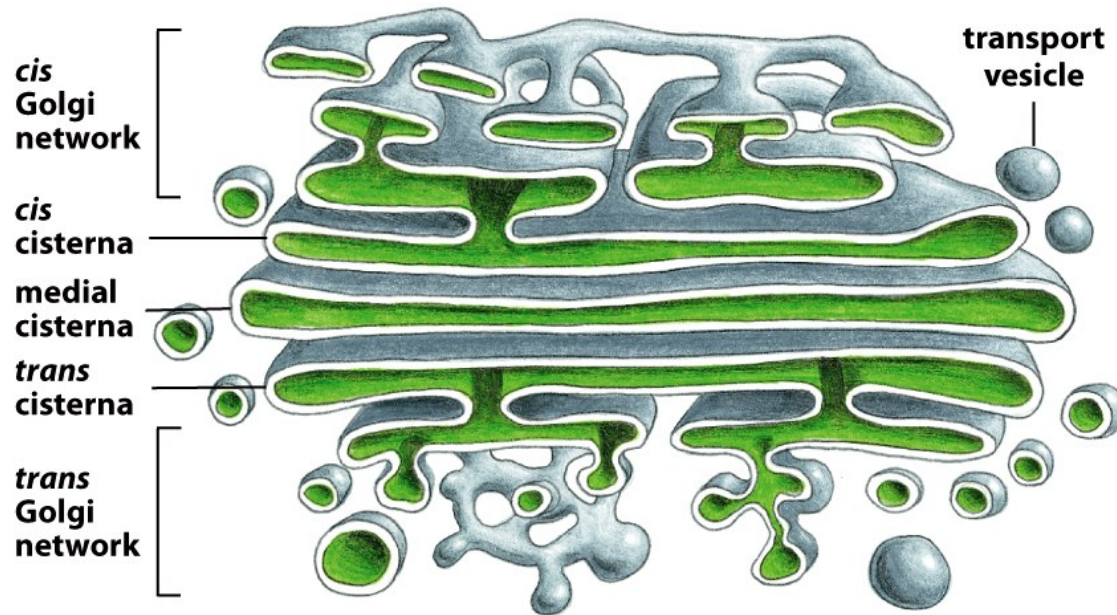


Figure 15-24 Essential Cell Biology 3/e (© Garland Science 2010)

Proteínas com falha na montagem são retidas no RE por chaperonas

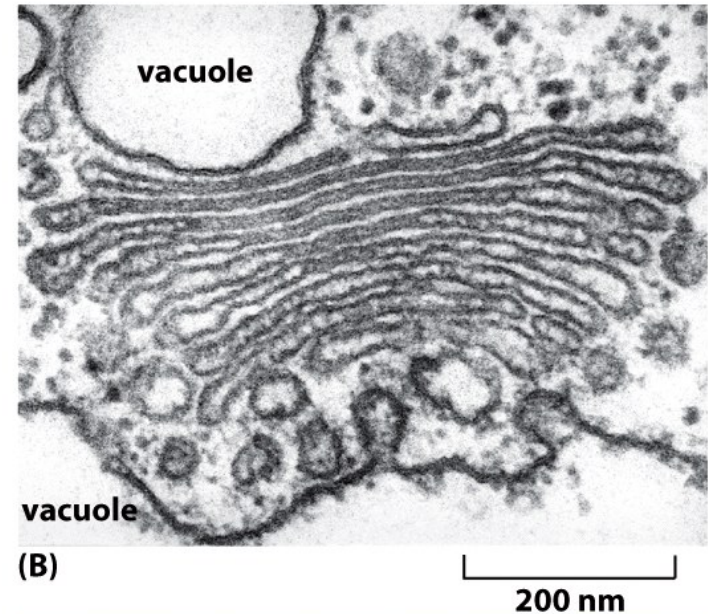
Vias secretoras: Proteína é posteriormente modificada no Golgi

cis: face de entrada



(A)

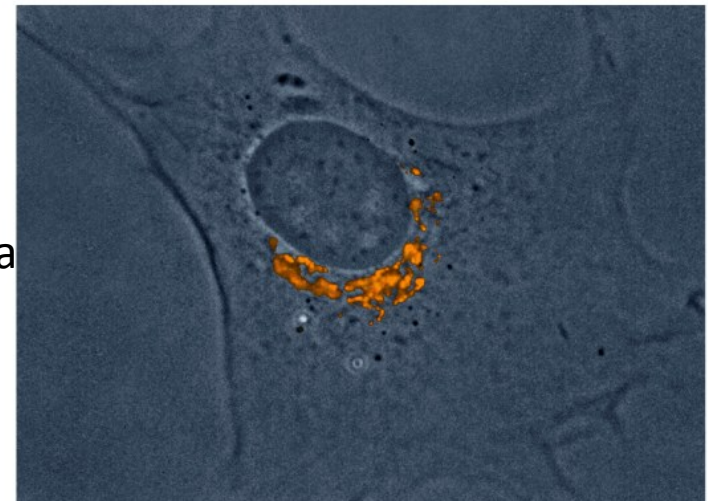
trans: face de saída



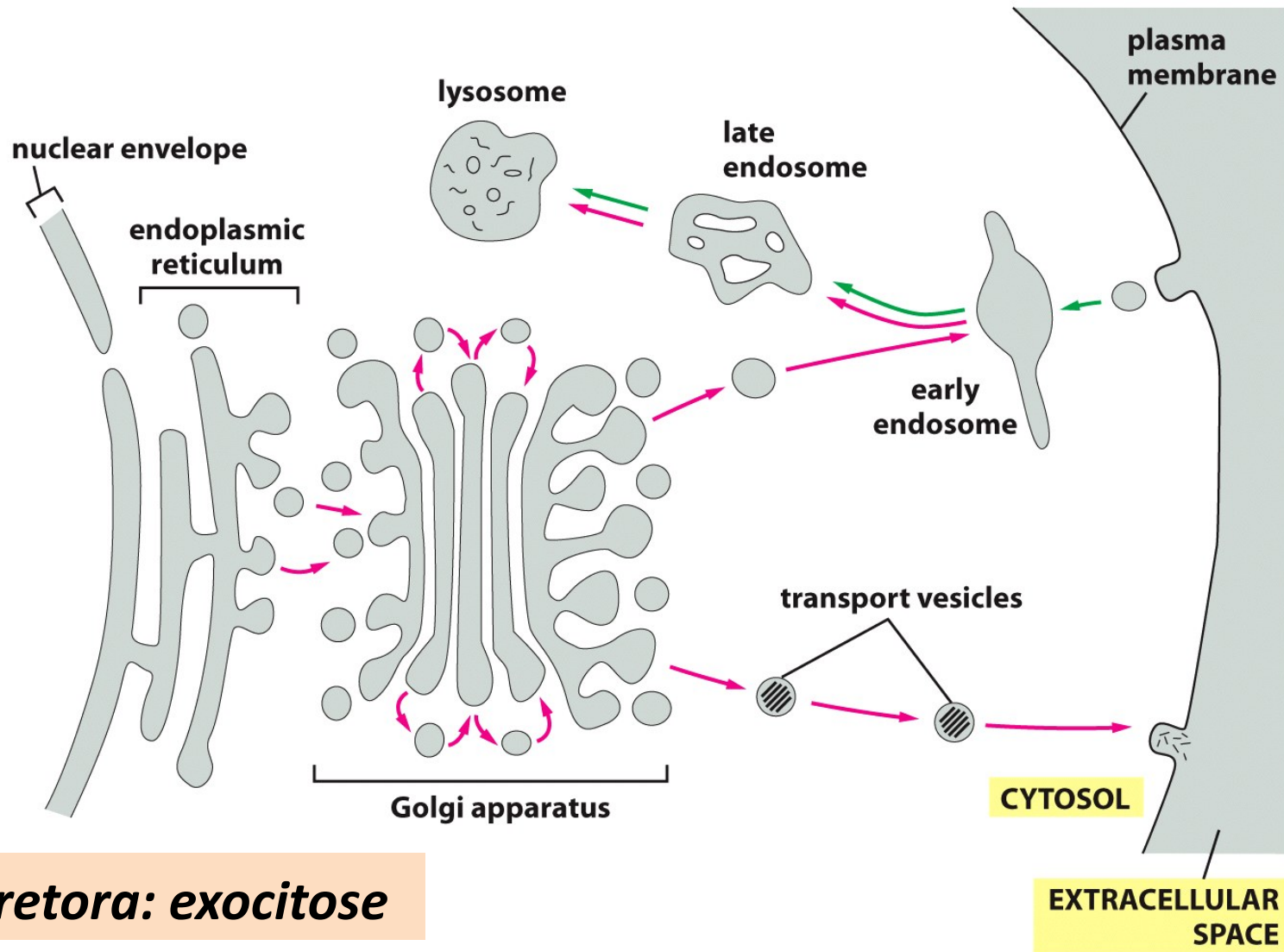
(B)

200 nm

Açúcares são adicionados e removidos por uma série de enzimas que atuam em sequência rigidamente ordenada



Proteínas saem da rede *Trans* Golgi e são distribuídas



Via secretora: exocitose

Figure 15-18 Essential Cell Biology 3/e (© Garland Science 2010)

Vias secretoras: Proteína são secretadas da célula por exocitose

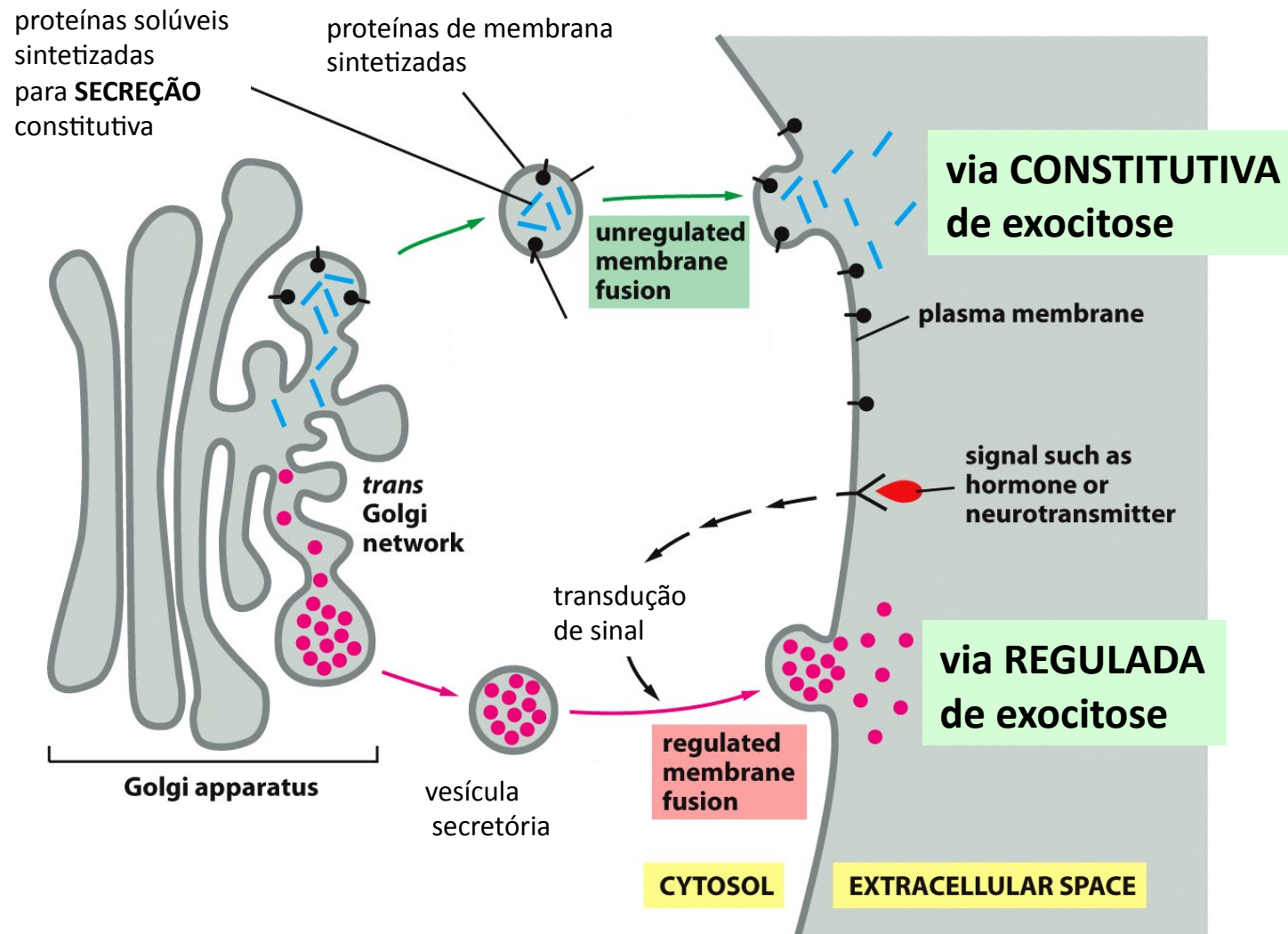


Figure 15-27 Essential Cell Biology 3/e (© Garland Science 2010)

Equilíbrio do volume da membrana

Via endocítica

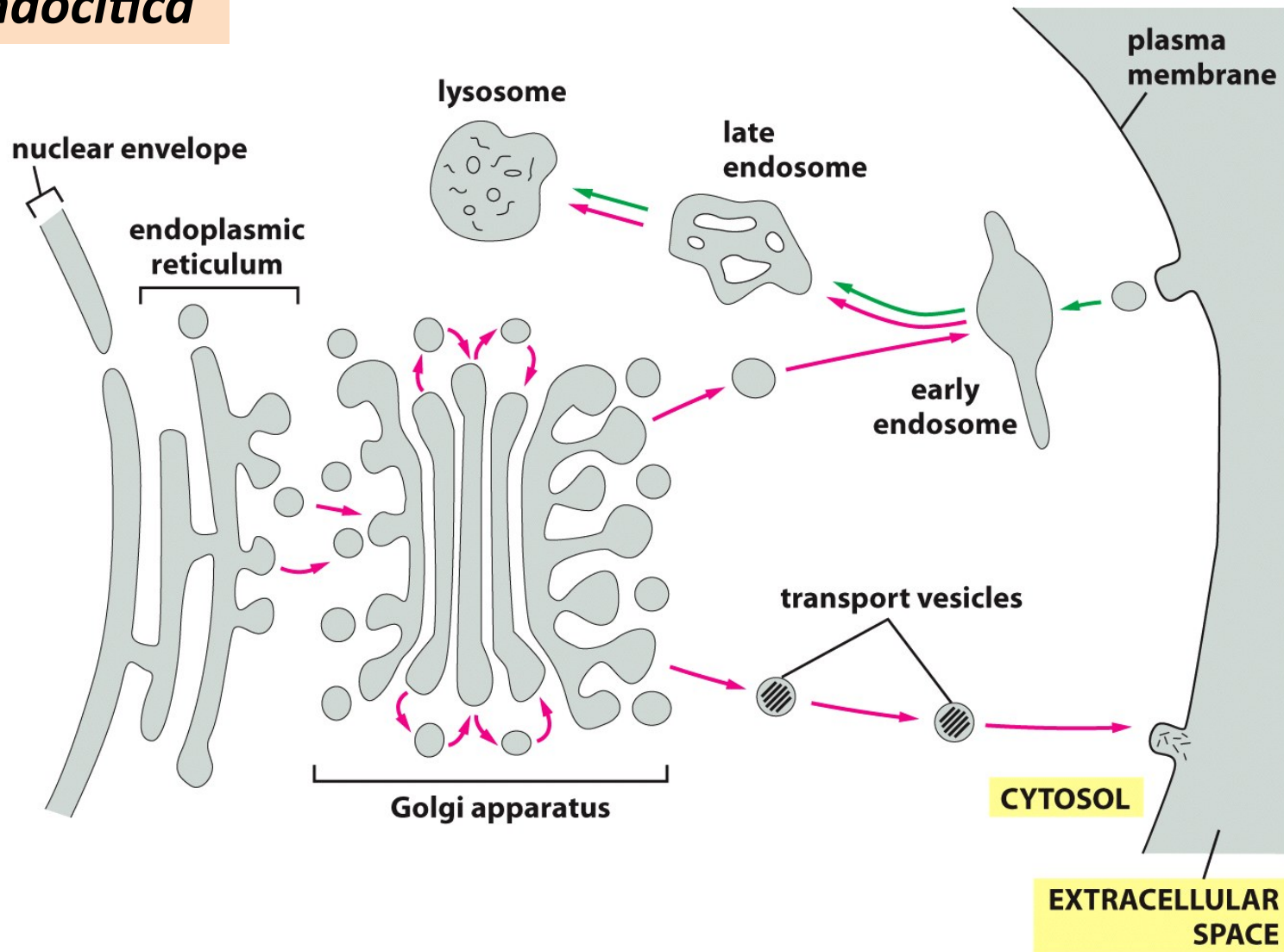
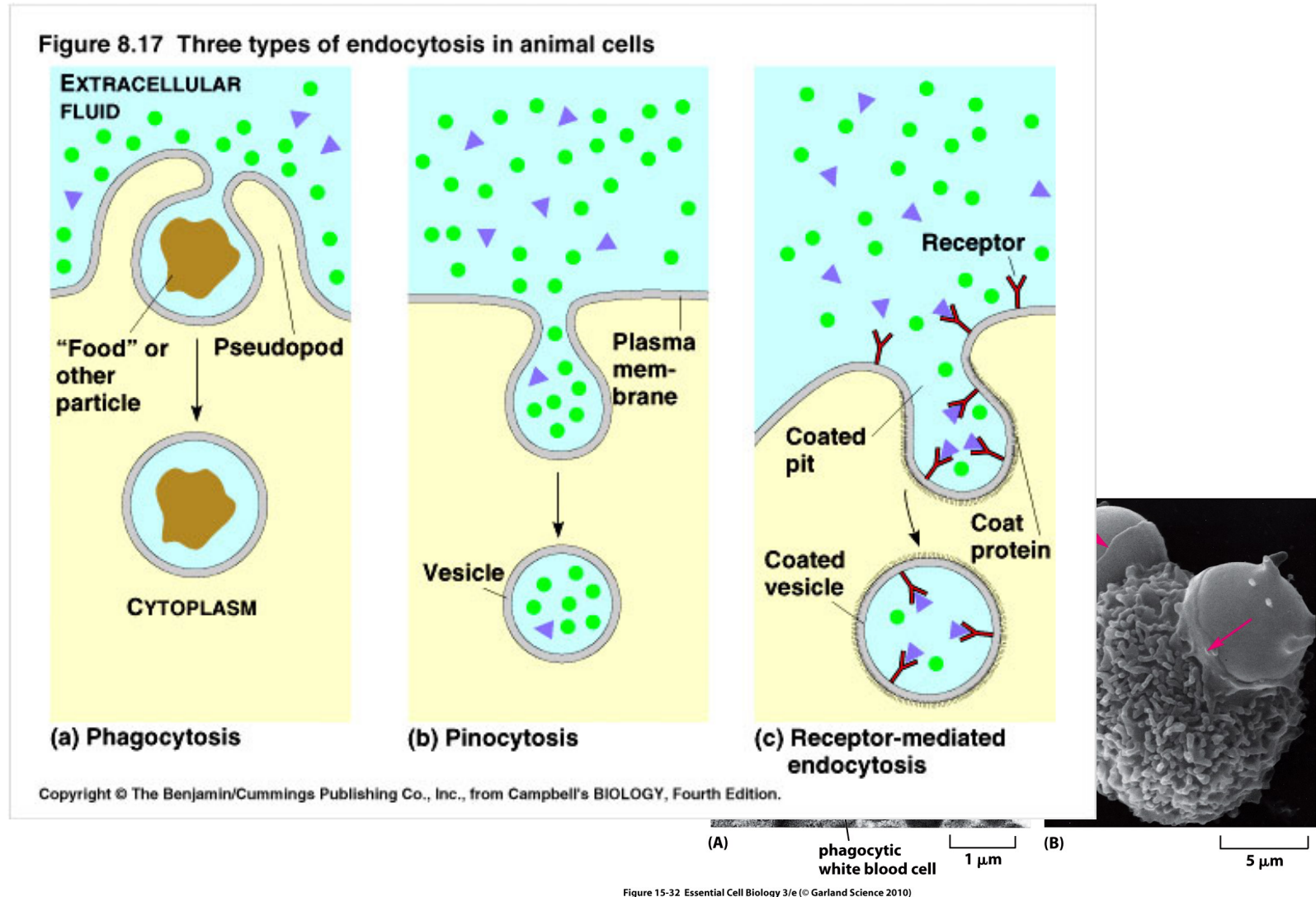


Figure 15-18 Essential Cell Biology 3/e (© Garland Science 2010)

Vias endocíticas: pinocitose e fagocitose



Mesma quantidade de membrana adicionada à superfície (exocitose) é removida por endocitose

Fagocitose

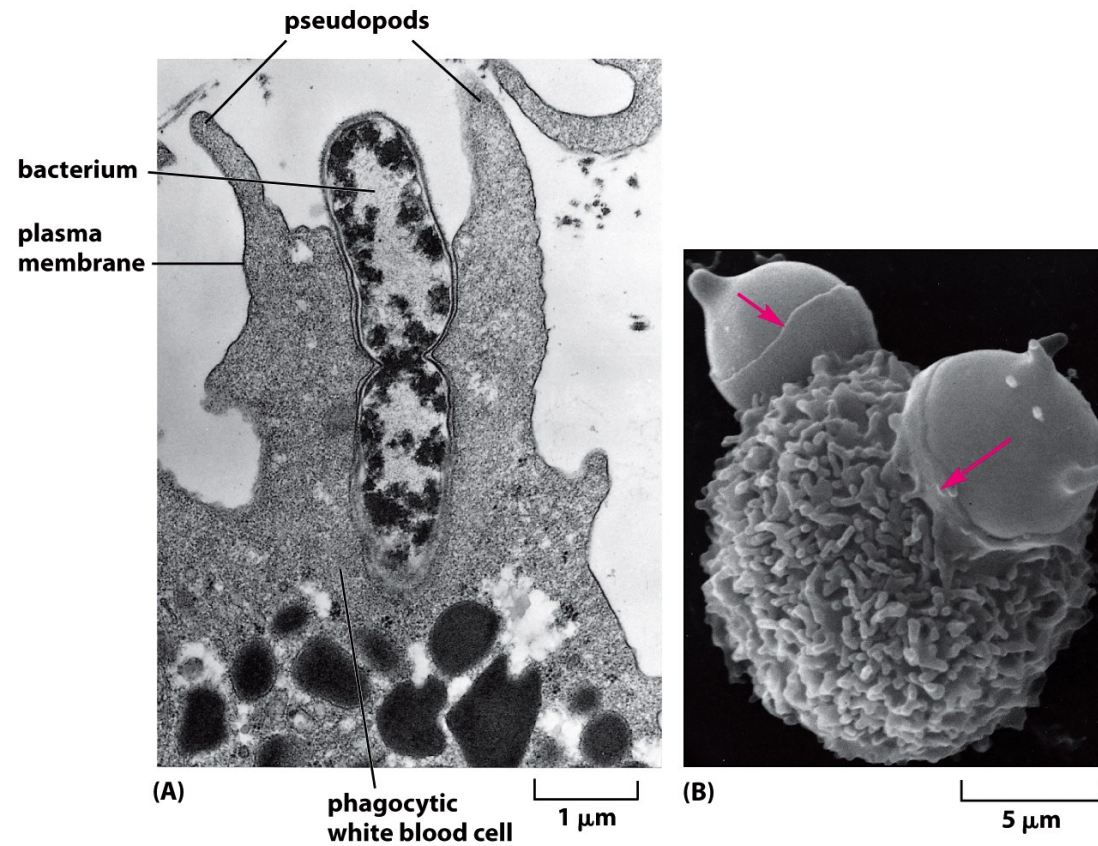
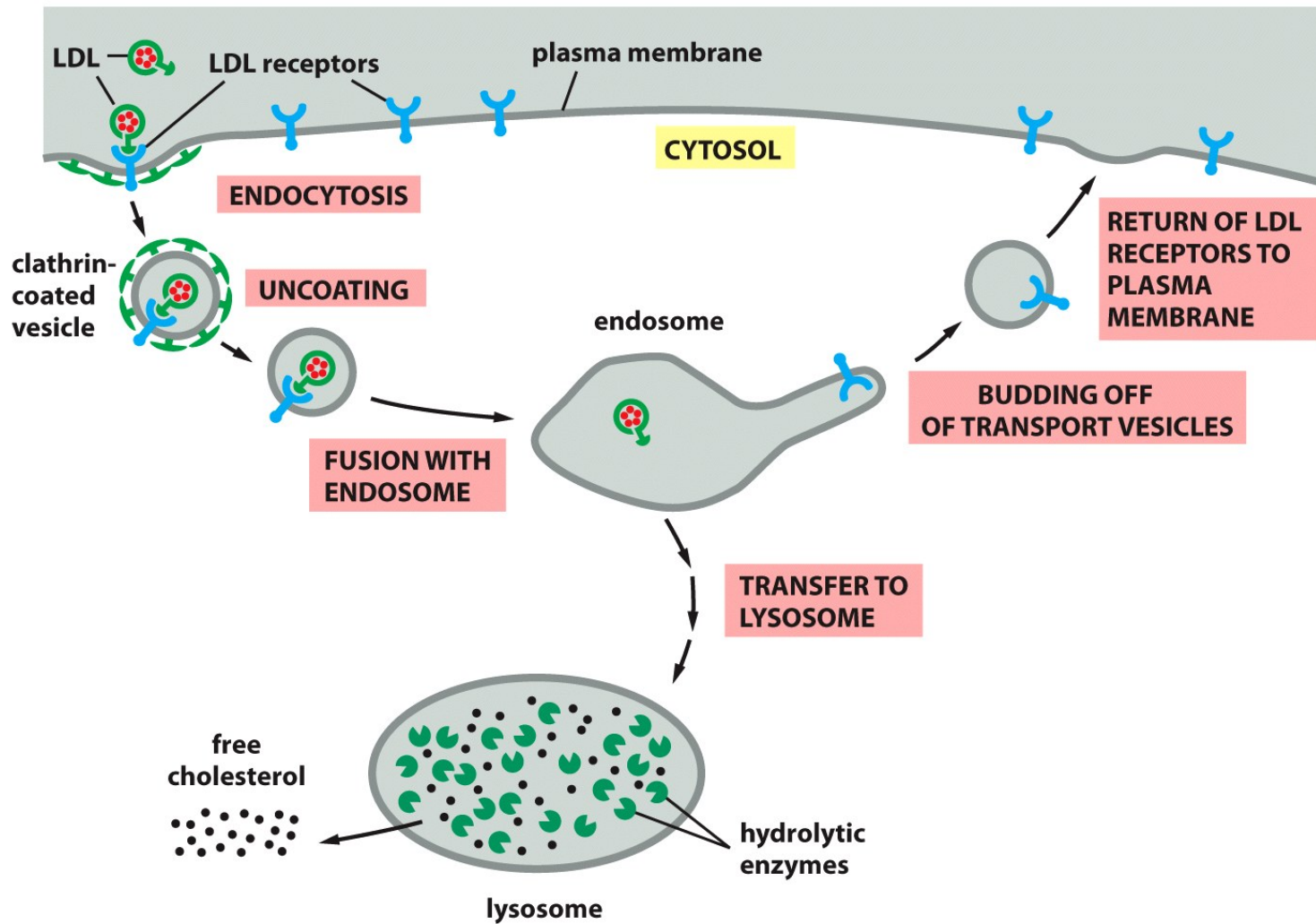


Figure 15-32 Essential Cell Biology 3/e (© Garland Science 2010)

Defesa contra microorganismos invasores e limpeza de células mortas restos celulares

Vias endocíticas: endocitose mediada por receptores



Forma de pinocitose controlada: captura de moléculas específicas
Mecanismo de concentração seletiva de substâncias

Os lisossomos são os principais sítios de digestão intracelular

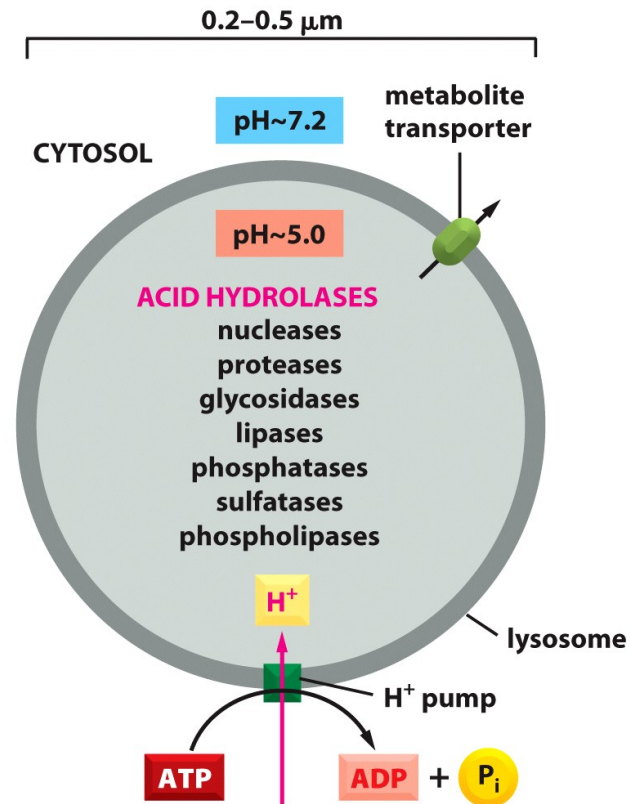


Figure 15-35 Essential Cell Biology 3/e (© Garland Science 2010)

Vias endocíticas: endocitose mediada por receptores

