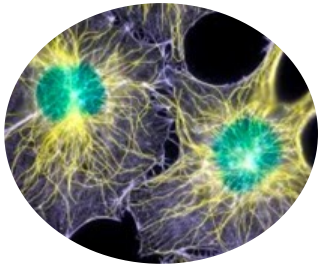

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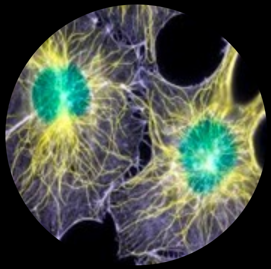
T5 Transporte de proteinas na célula

Cristina Cruz



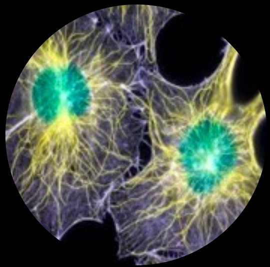
Functions of cholesterol

- Makes the bilayer more impermeable
- Thickens the bilayer
- Sphingolipids and cholesterol associate with each other

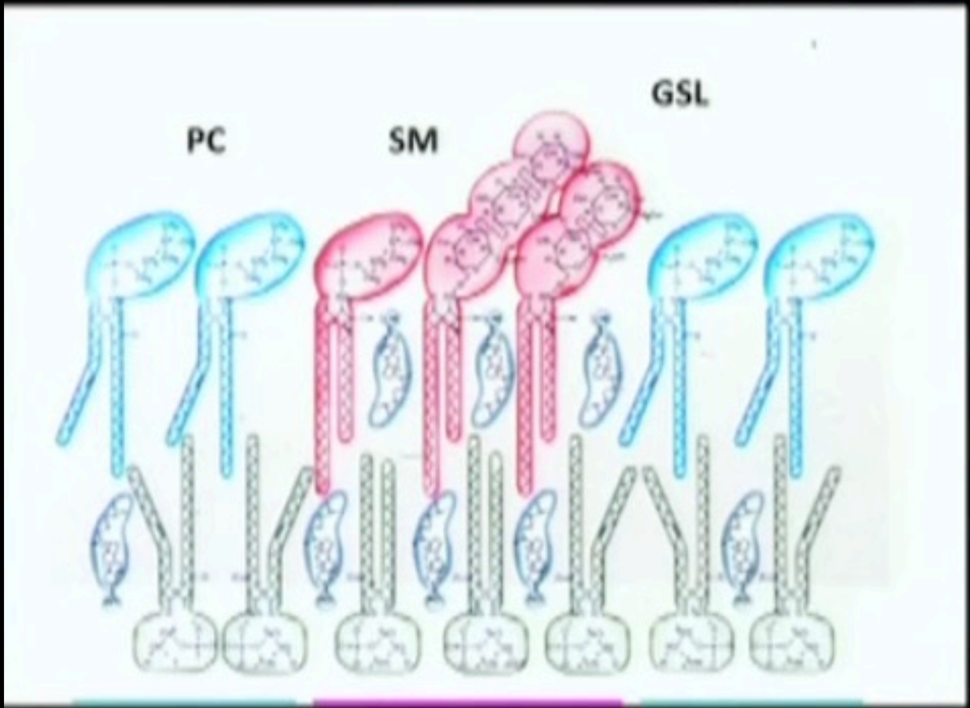
Fisiologia Celular e Molecular

MEMBRANE

The fluid mosic model



Sphingolipid-cholesterol rafts



Simons & Ikonen, 1997

liquid ordered– more tightly packed

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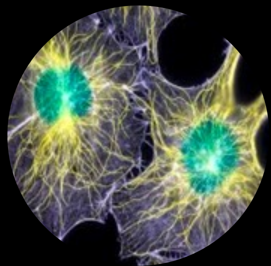
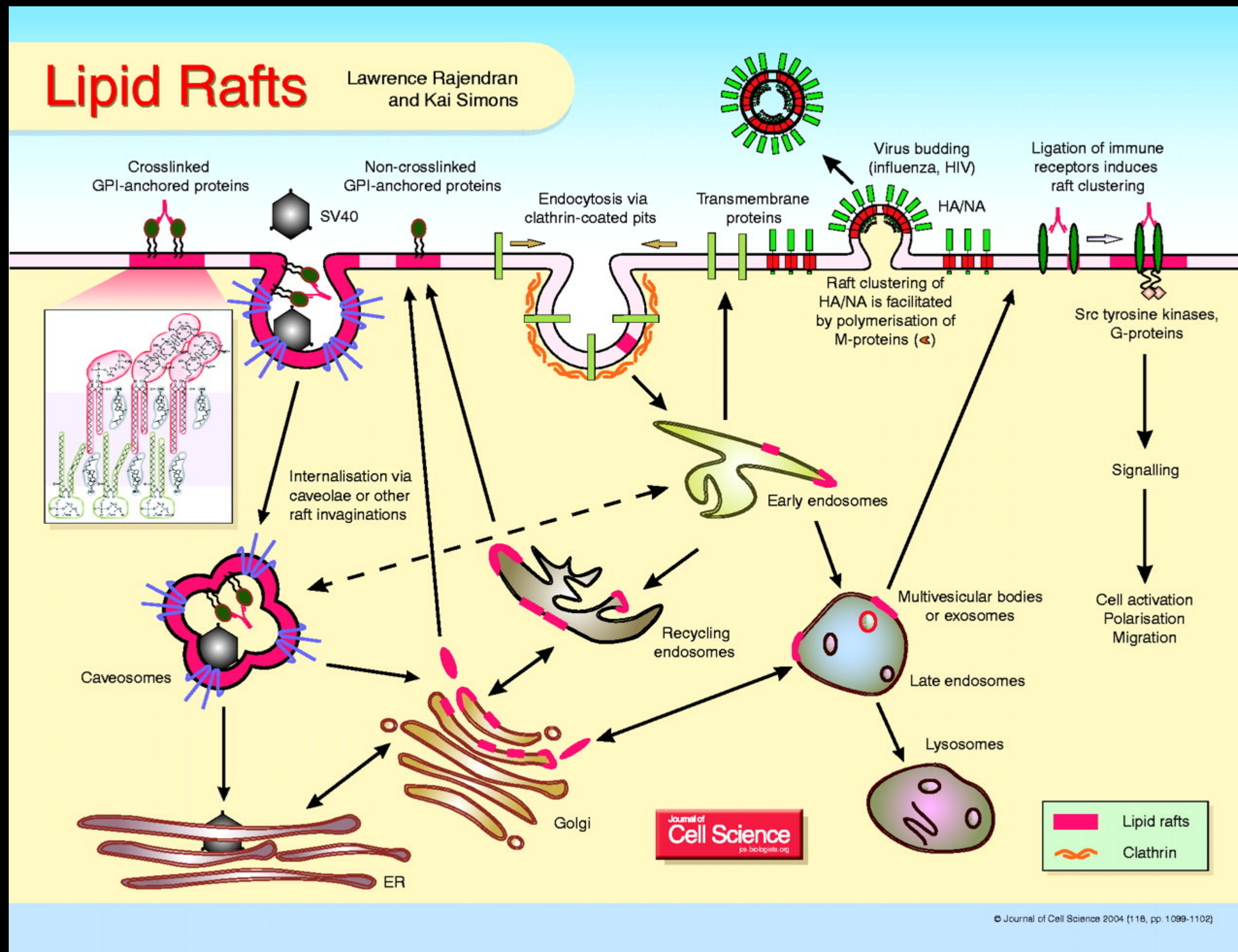
The fluid mosic model





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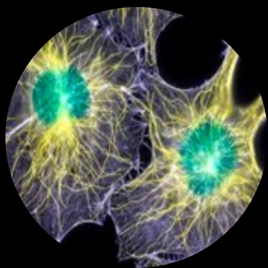
The fluid mosic model



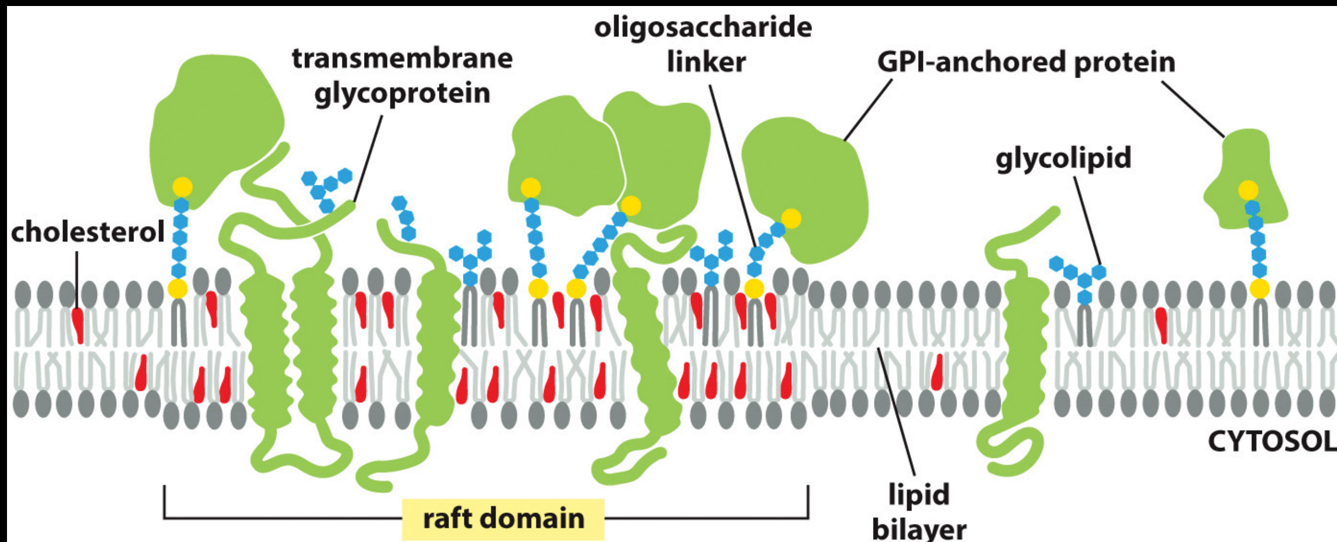


Figure 10-13
Adapted from D. Lingwood and K. Simons, *Science* 327:46–50, 2010.

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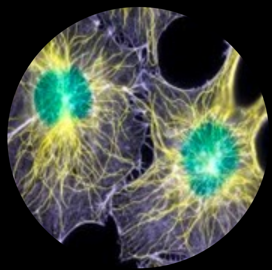
The fluid mosic model



Editorial: Role of Lipid Rafts in Anti-microbial Immune Response

Maria Cristina Gagliardi[1†], Kazuhisa Iwabuchi[2,3†] and Chih-Ho Lai[4,5,6,7*]

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[2]Graduate School of Health Care and Nursing, Juntendo University, Urayasu, Japan
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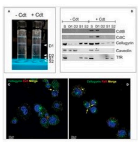
[4]Graduate Institute of Biomedical Sciences, Department of Microbiology and Immunology, College of Medicine, Chang Gung University, Taoyuan, Taiwan
[5]Department of Medical Research, School of Medicine, China Medical University and Hospital, Taichung, Taiwan
[6]Department of Nursing, Asia University, Taichung, Taiwan
[7]Department of Pediatrics, Molecular Infectious Disease Research Center, Chang Gung Memorial Hospital, Taoyuan, Taiwan

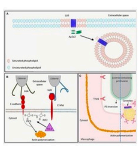


Internalization and Intoxication of Human Macrophages by the Active Subunit of the Aggregatibacter actinomycetemcomitans Cytolethal Distending Toxin Is Dependent Upon Cellugyrin (Synaptogyrin-2)

Kathleen Boesze-Battaglia, Anuradha Dhingra , Lisa M. Walker, Ali Zekavat and Bruce J. Shenker

Original Research The Aggregatibacter actinomycetemcomitans cytolethal distending toxin (Cdt) is a heterotrimeric AB2 toxin capable of inducing cell cycle arrest and apoptosis in lymphocytes and other cell types. Recently, we have demonstrated that human macrophages ...

Published on 16 June 2020
Front. Immunol. doi: 10.3389/fimmu.2020.01262

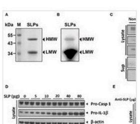


Host Lipid Rafts as the Gates for Listeria monocytogenes Infection: A Mini-Review

Yu-Huan Tsai and Wei-Lin Chen

Mini Review Listeria monocytogenes is a Gram-positive foodborne bacterial pathogen capable of interacting and crossing the intestinal barrier, blood–brain barrier, and placental barrier to cause deadly infection with high mortality. L. monocytogenes is an ...

Published on 11 August 2020
Front. Immunol. doi: 10.3389/fimmu.2020.01666



Membrane Cholesterol Is Crucial for Clostridium difficile Surface Layer Protein Binding and Triggering Inflammasome Activation

Yu Chen , Kai Huang , Liang-Kuei Chen, Hui-Yu Wu, Chih-Yu Hsu , Yau-Sheng Tsai

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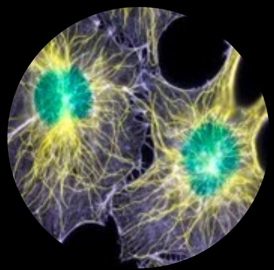
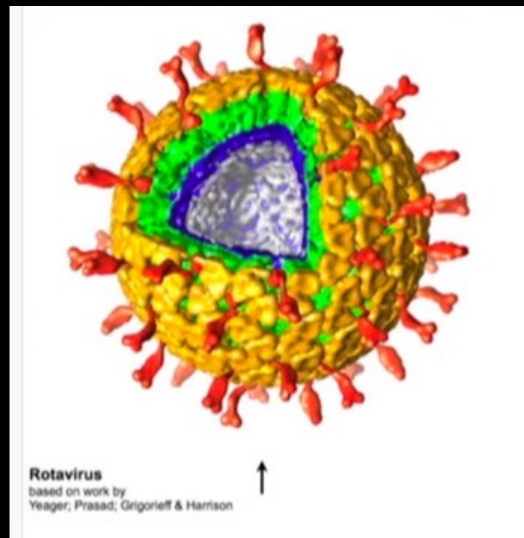
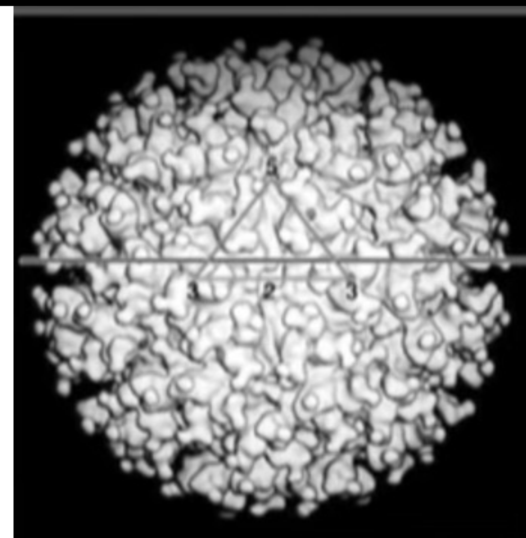
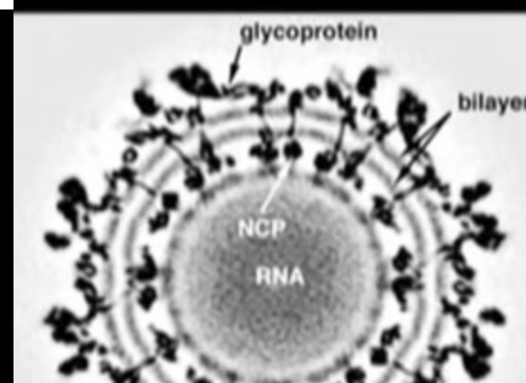
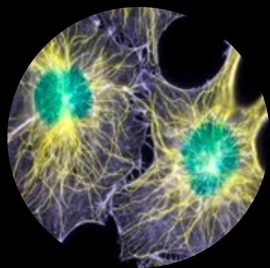
The fluid mosic model











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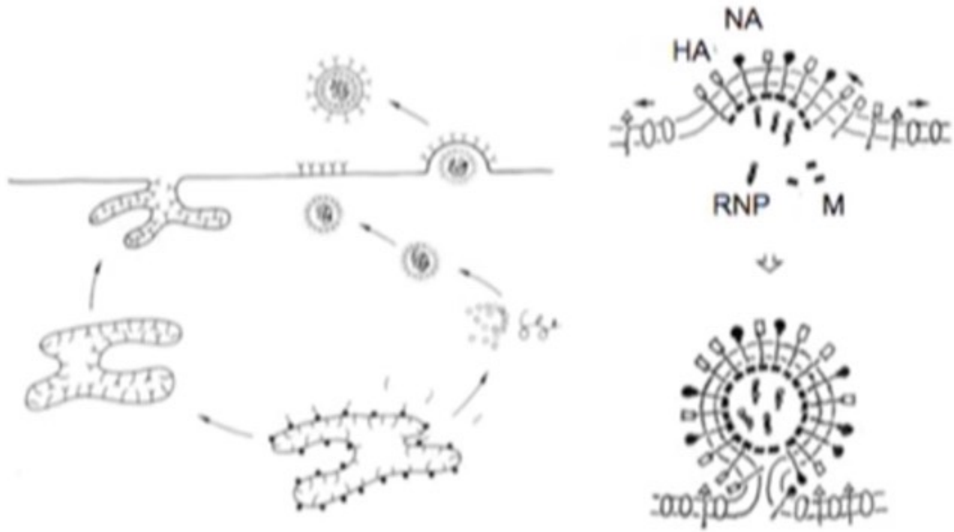
The fluid mosic model

Enveloped viruses acquire membrane by budding



alphaviruses
(e.g., Sinbdis virus)

influenza virus

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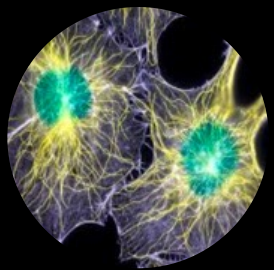
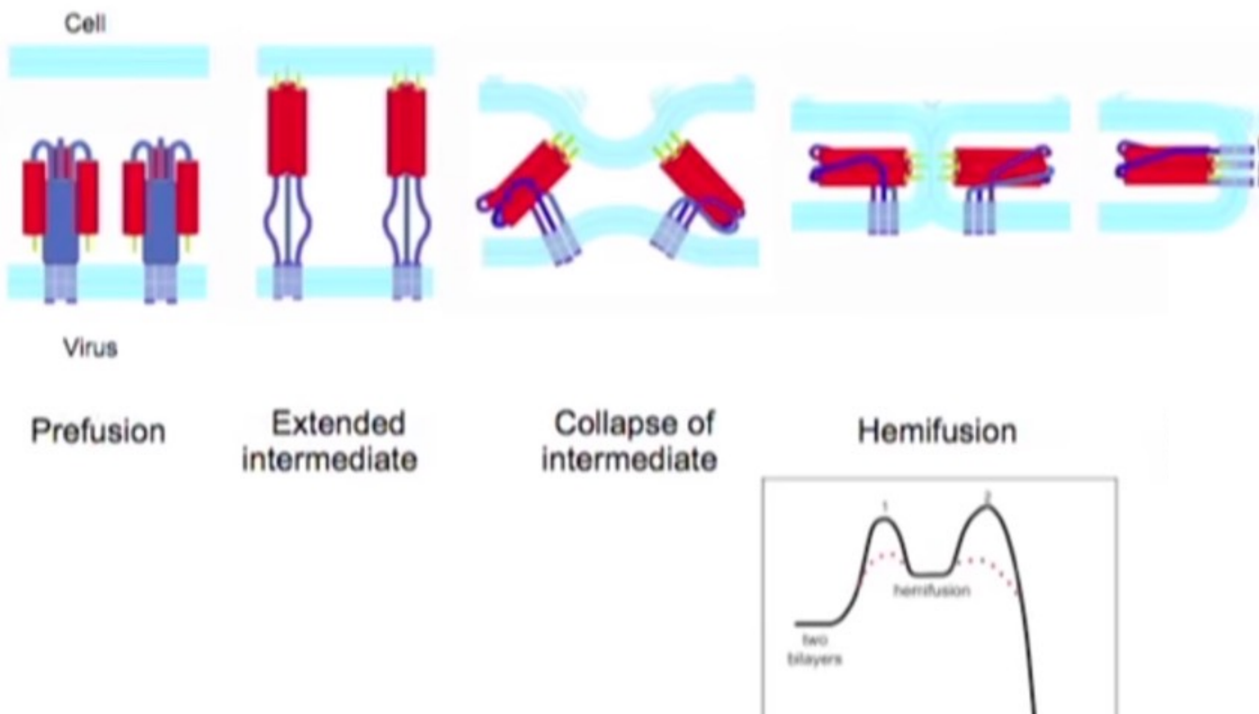
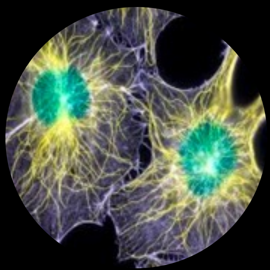
The fluid mosic model

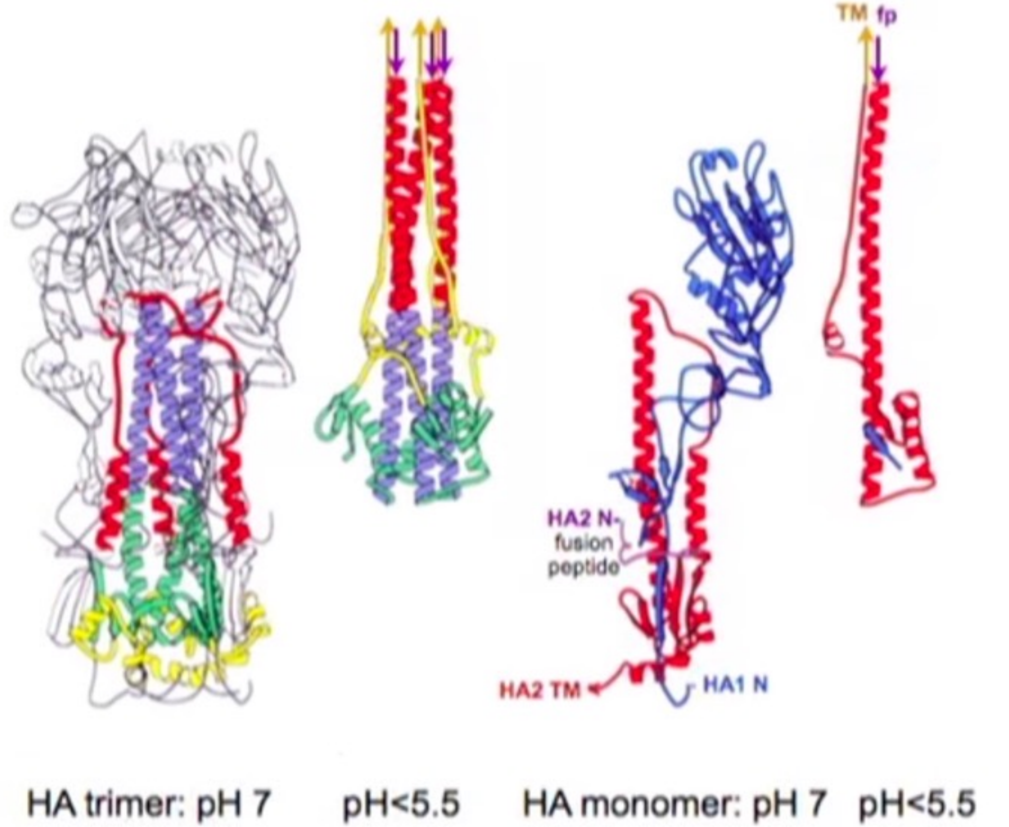


Sequence of events in viral membrane fusion





Low-pH triggered conformational change



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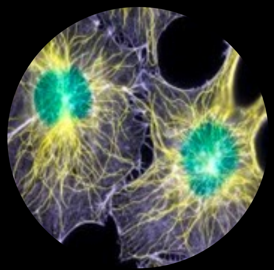
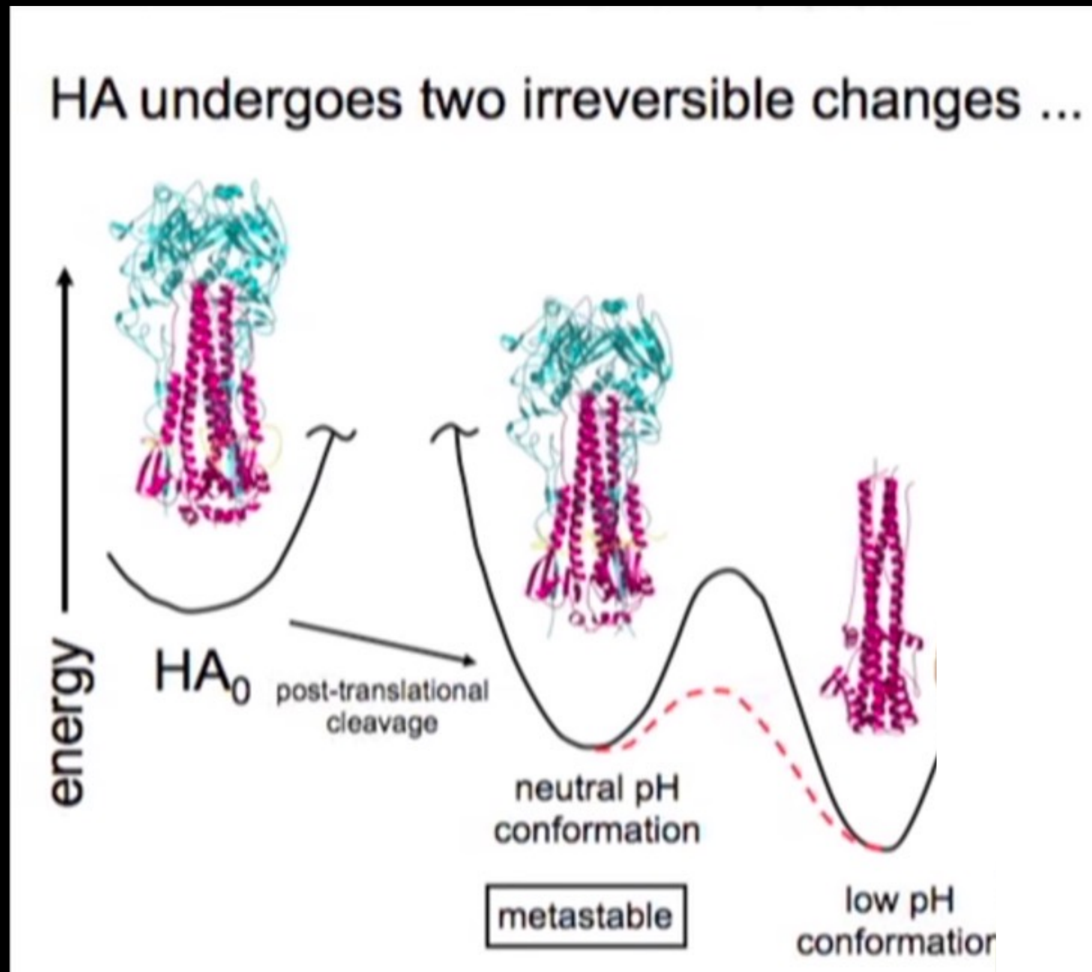
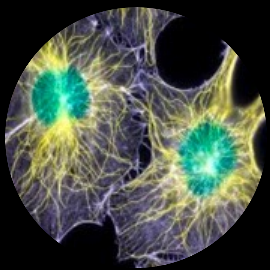


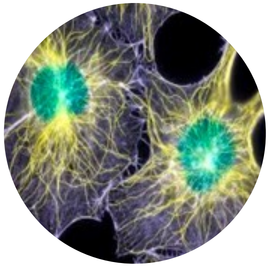




hemagglutinin (HA):

three functions

1. receptor binding
2. antigenic variation
3. fusion



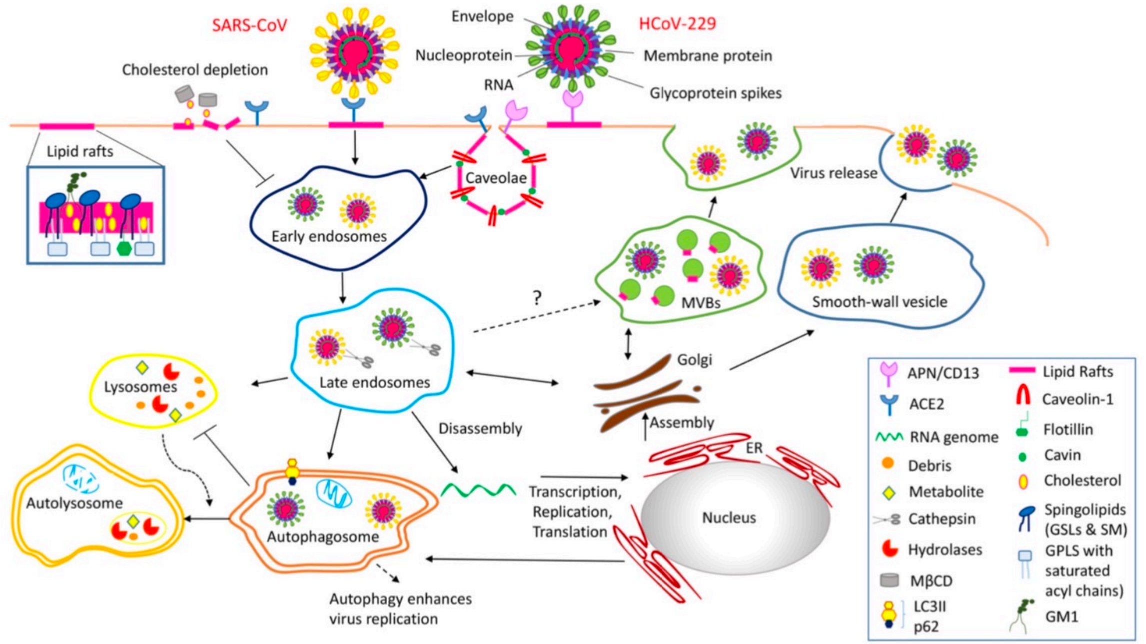
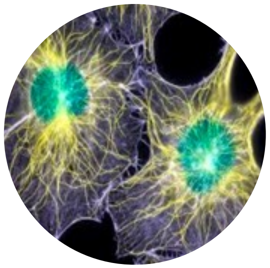


FIGURE 1 | Schematic representation of the role of lipid rafts in Coronavirus infection of the host cells is a multistep endocytic process characterized by a series of complex events tightly regulated in space and time. Step 1 Entry process of coronavirus into the host cells is initiated by the binding of the spike glycoprotein with the specific receptor (ACE2, APN/CD13) located into lipid rafts/caveolae. This interaction causes conformational changes of the viral particle, which trigger specific signaling events necessary for the viral entry mechanism. Step 2 Lipid rafts/caveolae-mediated endocytosis is followed by intracellular trafficking of virus particles in transport vesicles (early and late endosomes). The low pH in late endosomes induces a conformational change in coronavirus that mediates fusion of the viral envelope with the endosomal membrane. Step 3 Viral genomes are translated in two polyproteins, pp1a and pp1ab, which encode the non-structural viral proteins that form the replication transcription complex. This complex produces genomic RNA as well as multiple subgenomic mRNAs encoding structural proteins. Translation of mRNA encoding for the nucleocapsid proteins occurs in the cytoplasm where the newly synthesized proteins interact with new genomes to form ribonucleoprotein particles. In contrast, matrix, envelope and spike proteins translation occurs into the ER. Coronavirus uses also the autophagy machinery for replication and has evolved strategies to avoid autophagy-induced lysosomal degradation. Step 4 After assembly the progeny viral particles, virus-containing vesicles (smooth-wall vesicles) are budded and released into the extracellular environment through fusion with the plasma membrane (exocytosis). Alternatively, we speculate that coronavirus might utilize multivescicular bodies (MVBs) and take advantage of the exosomal pathway for egress.



Fusion mechanism

A. Cleave precursor ("prime")

B. Localize virus to cell
(by receptor binding)

C. Trigger refolding
(by co-receptor, low pH, etc.)

1. Expose fusion peptide
2. Insert fusion peptide into target membrane
3. Fold back to bring together target and viral membranes

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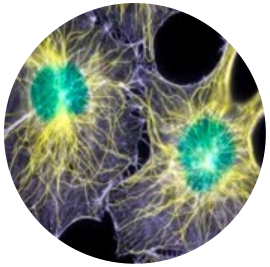
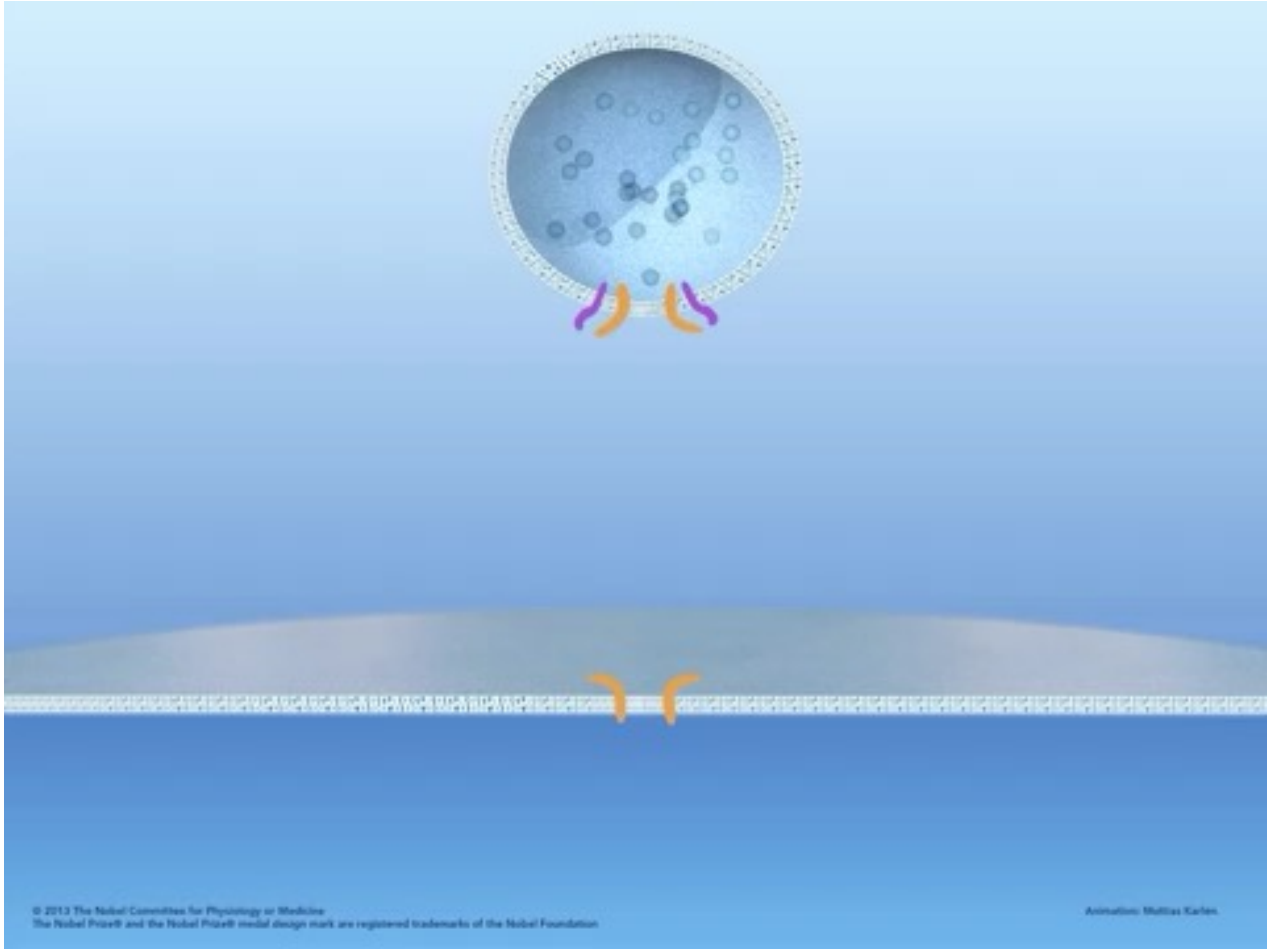
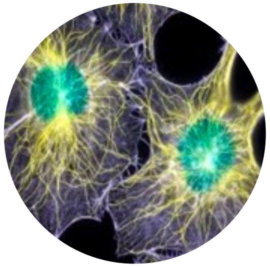
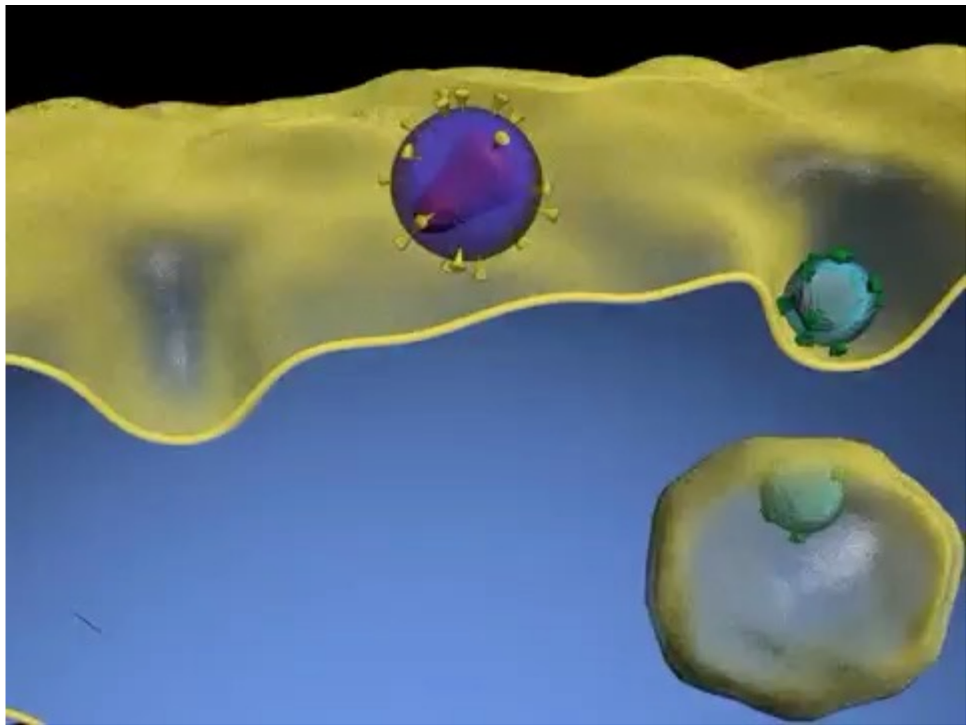
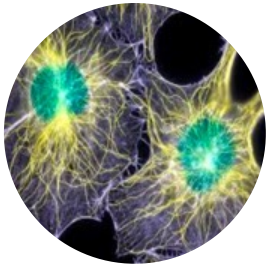










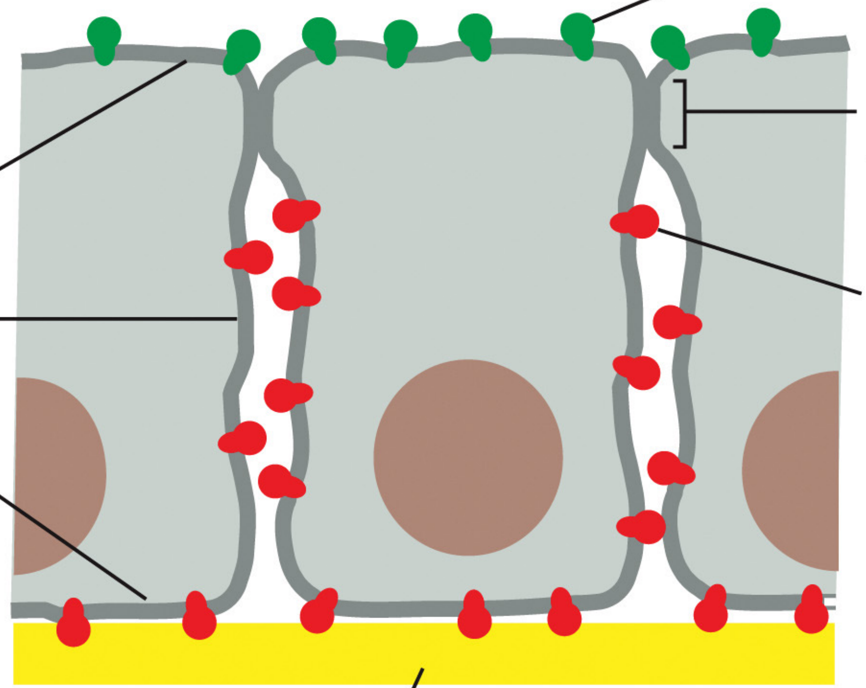
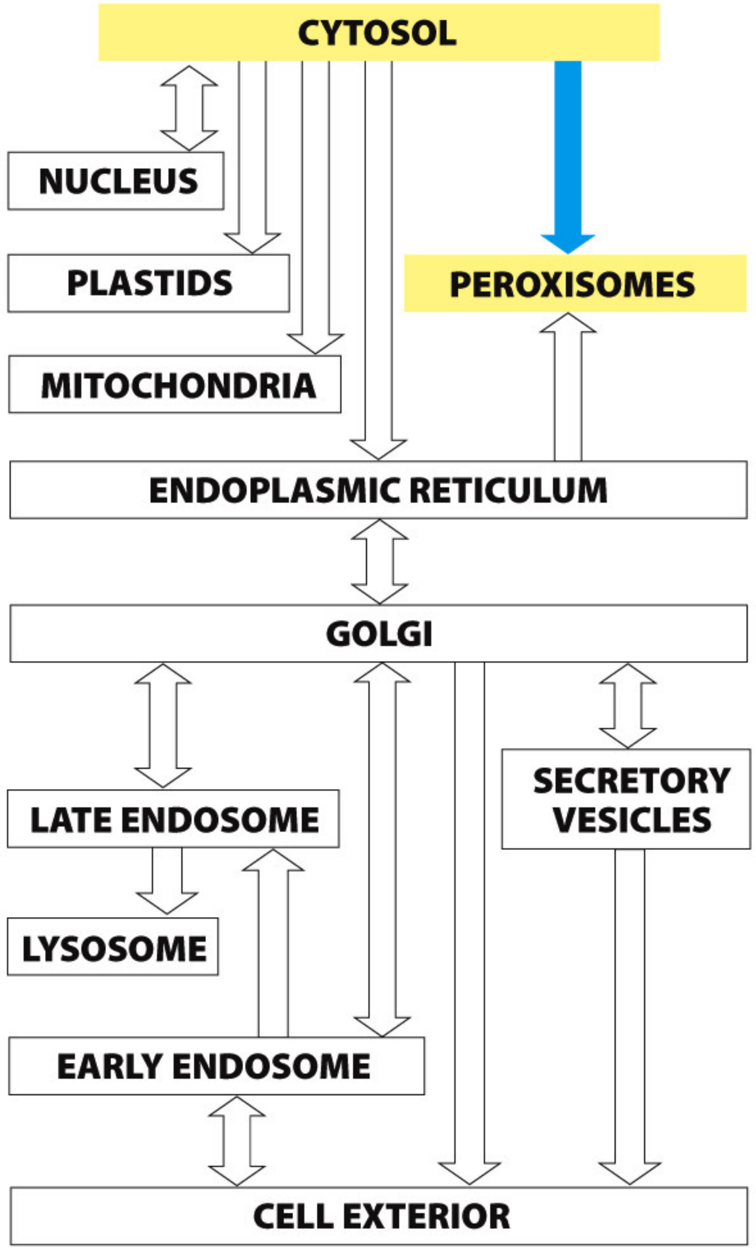

protein A
tight junction
apical plasma membrane
lateral plasma membrane
protein B
basal plasma membrane
basal lamina

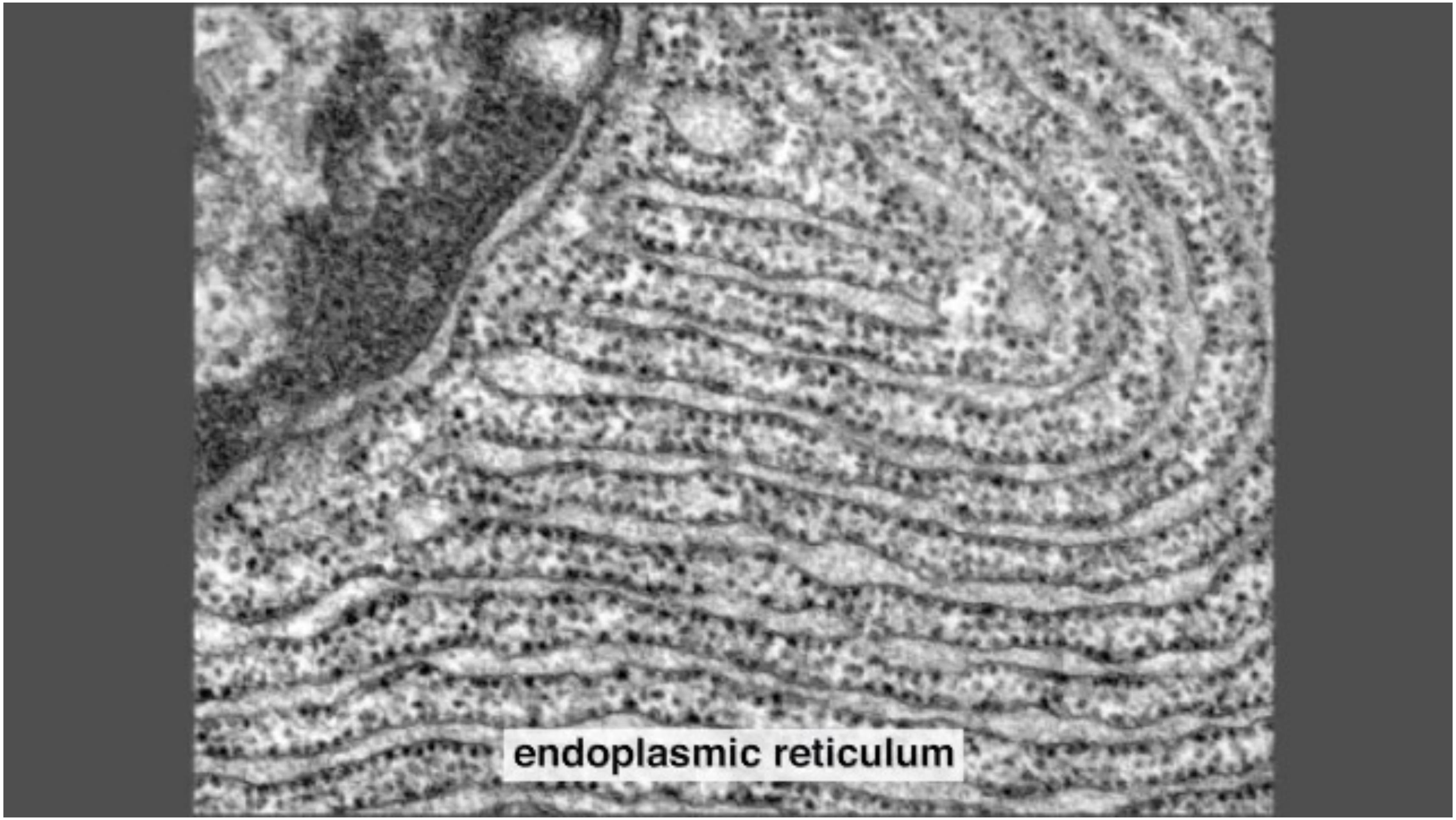
Figure 10-34

Introduction



Unnumbered 12 p666 Molecular Biology of the Cell 6e (© Garland Science 2015)

Introduction



https://www.google.pt/search?q=endoplasmic+reticulum+cell+clips&source=lmns&tbm=vid&bih=762&biw=1440&hl=en&sa=X&ved=2ahUKEwjRhcCVq8T9AhUUWKQEHQkRCqEQ_AUoAnoECAEQAg#fpstate=ive&vld=cid:7ff82298,vid:TmQKHHB51P8

Introduction

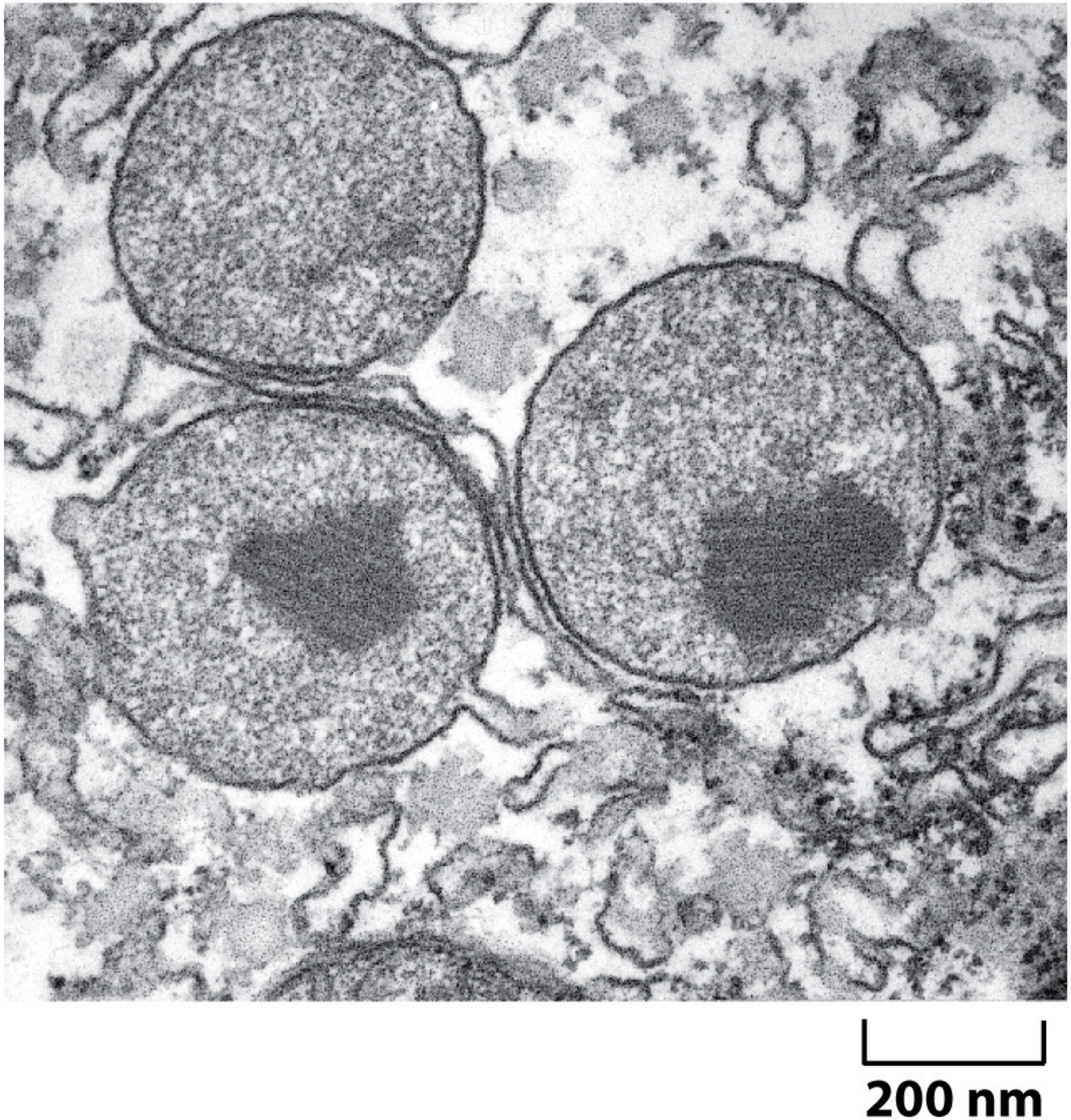


Figure 12-27 Molecular Biology of the Cell 6e (© Garland Science 2015)

Peroxisomes Use Molecular Oxygen and Hydrogen Peroxide to Perform Oxidation Reactions

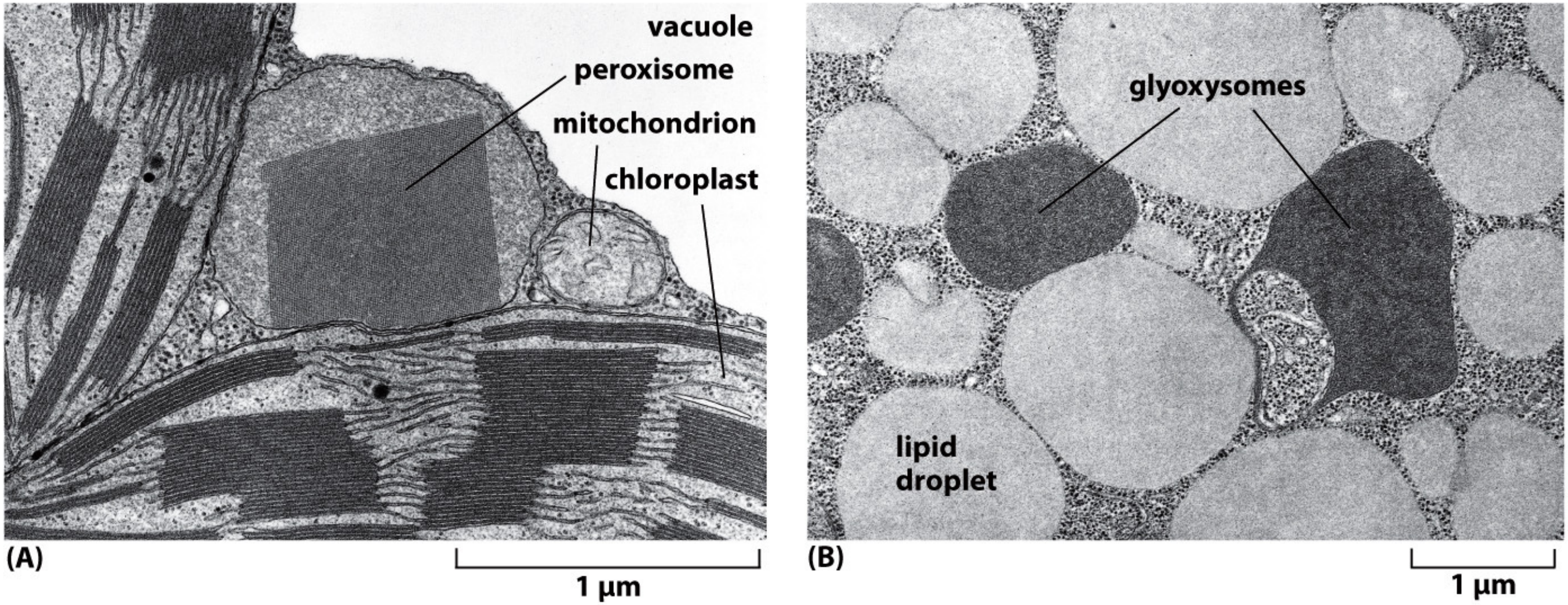


Figure 12-29 Molecular Biology of the Cell 6e (© Garland Science 2015)

A Short Signal Sequence Directs the Import of Proteins into Peroxisomes

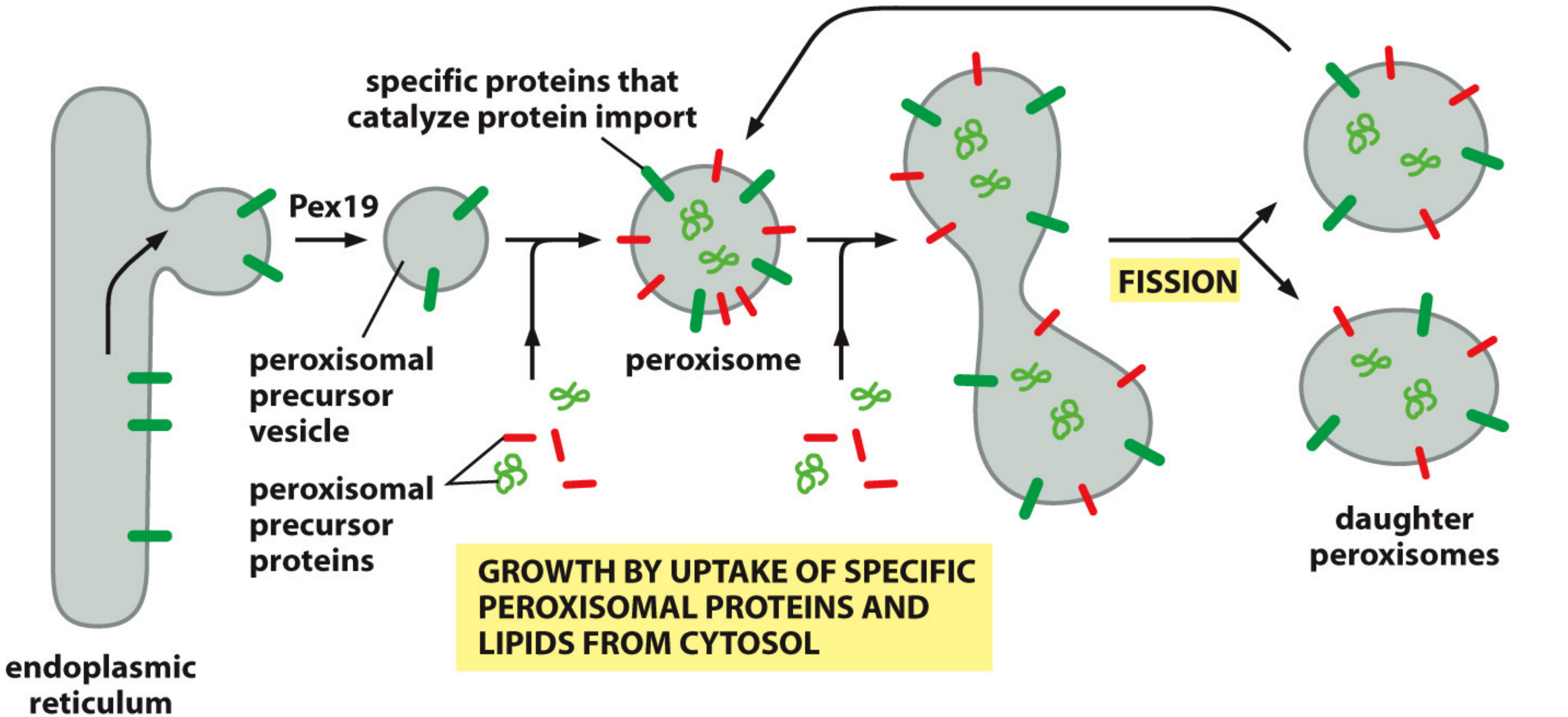
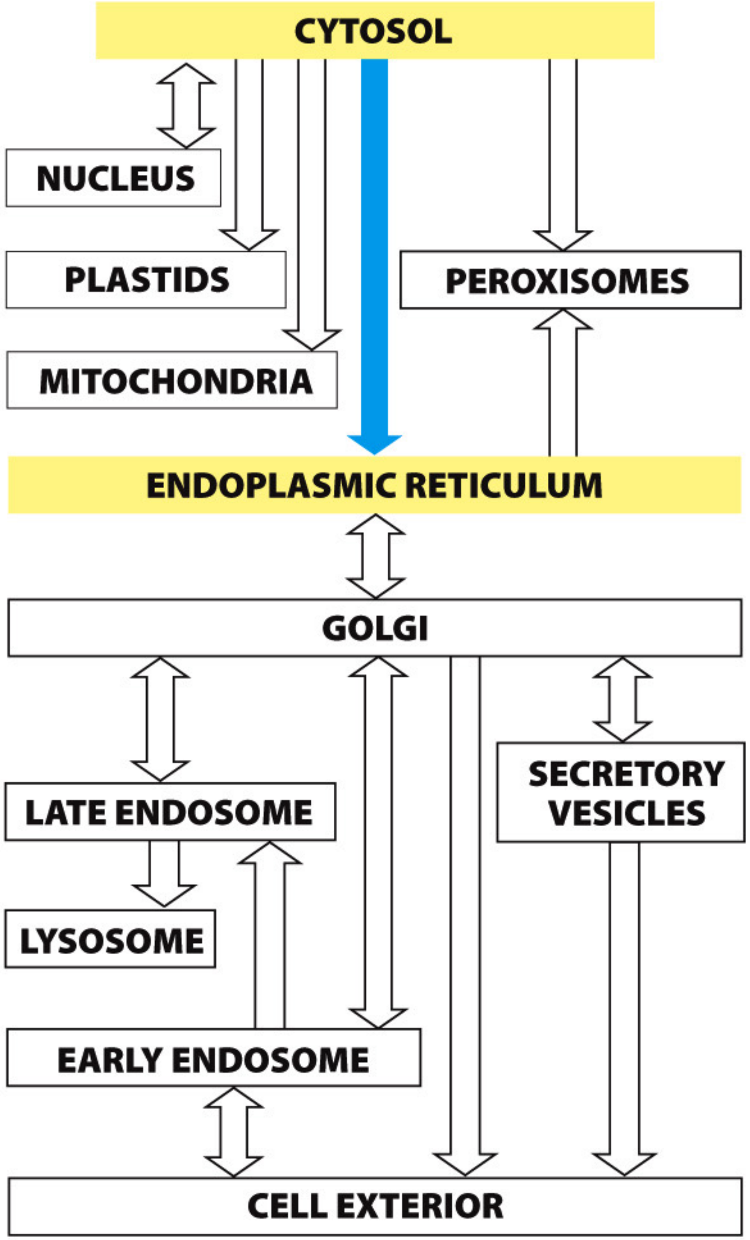


Figure 12-30 Molecular Biology of the Cell 6e (© Garland Science 2015)

Introduction



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Introduction

- Cell membrane
- Endosomes
- Lysosomes

https://www.youtube.com/watch?v=TmQKHHB51P8&t=135s

The ER Is Structurally and Functionally Diverse

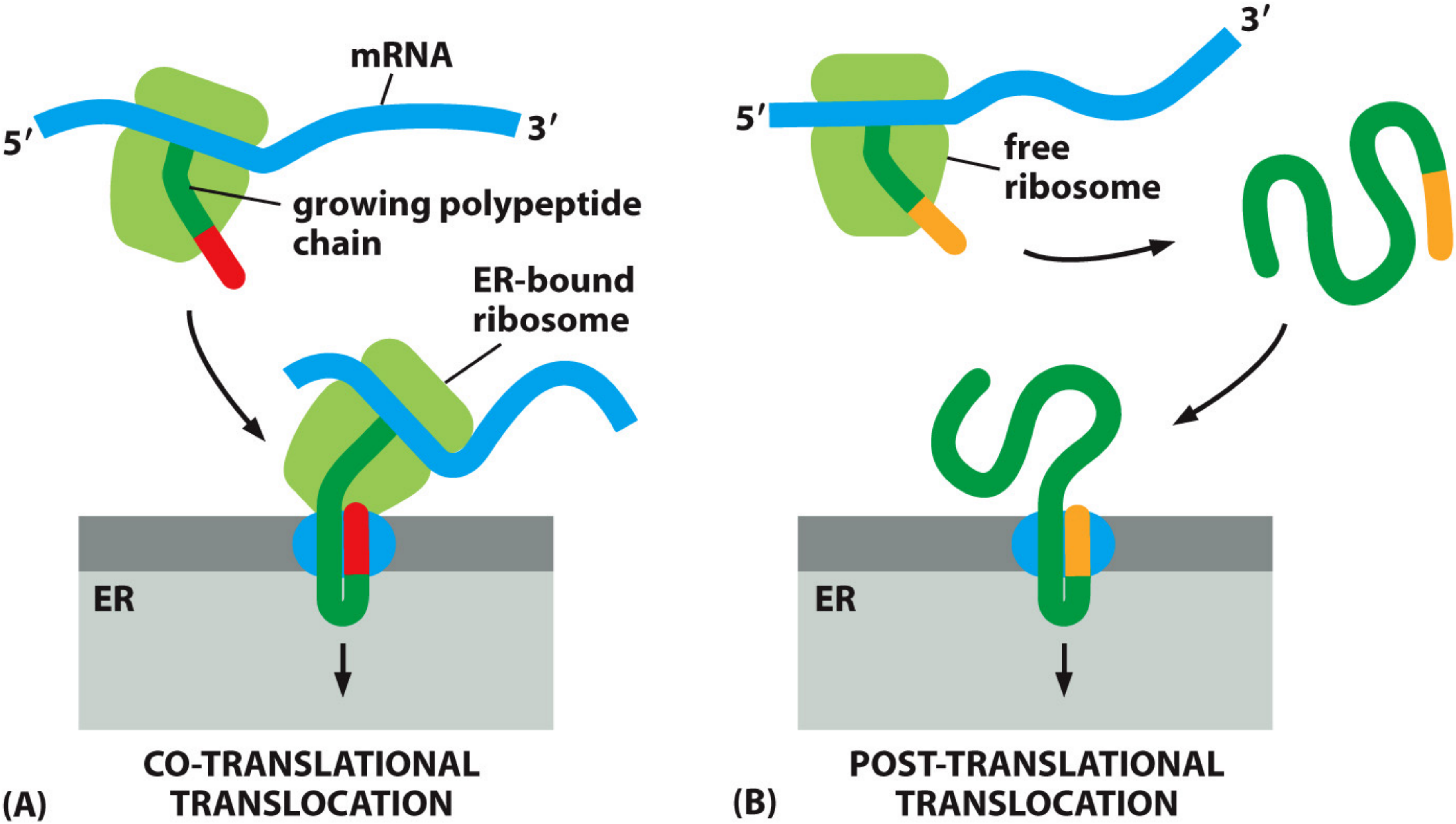

Figure 12-32 Molecular Biology of the Cell 6e (© Garland Science 2015)

The ER Is Structurally and Functionally Diverse

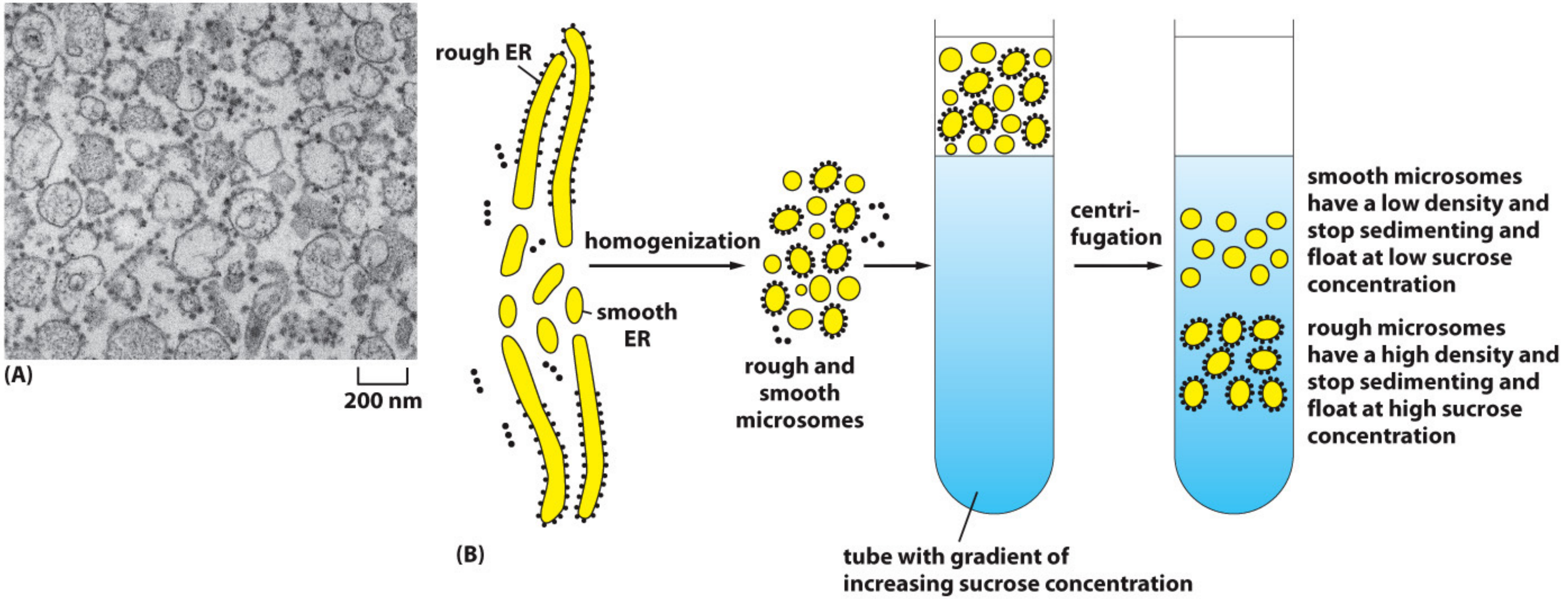

Figure 12-34 Molecular Biology of the Cell 6e (© Garland Science 2015)

Signal Sequences Were First Discovered in Proteins Imported into the Rough ER

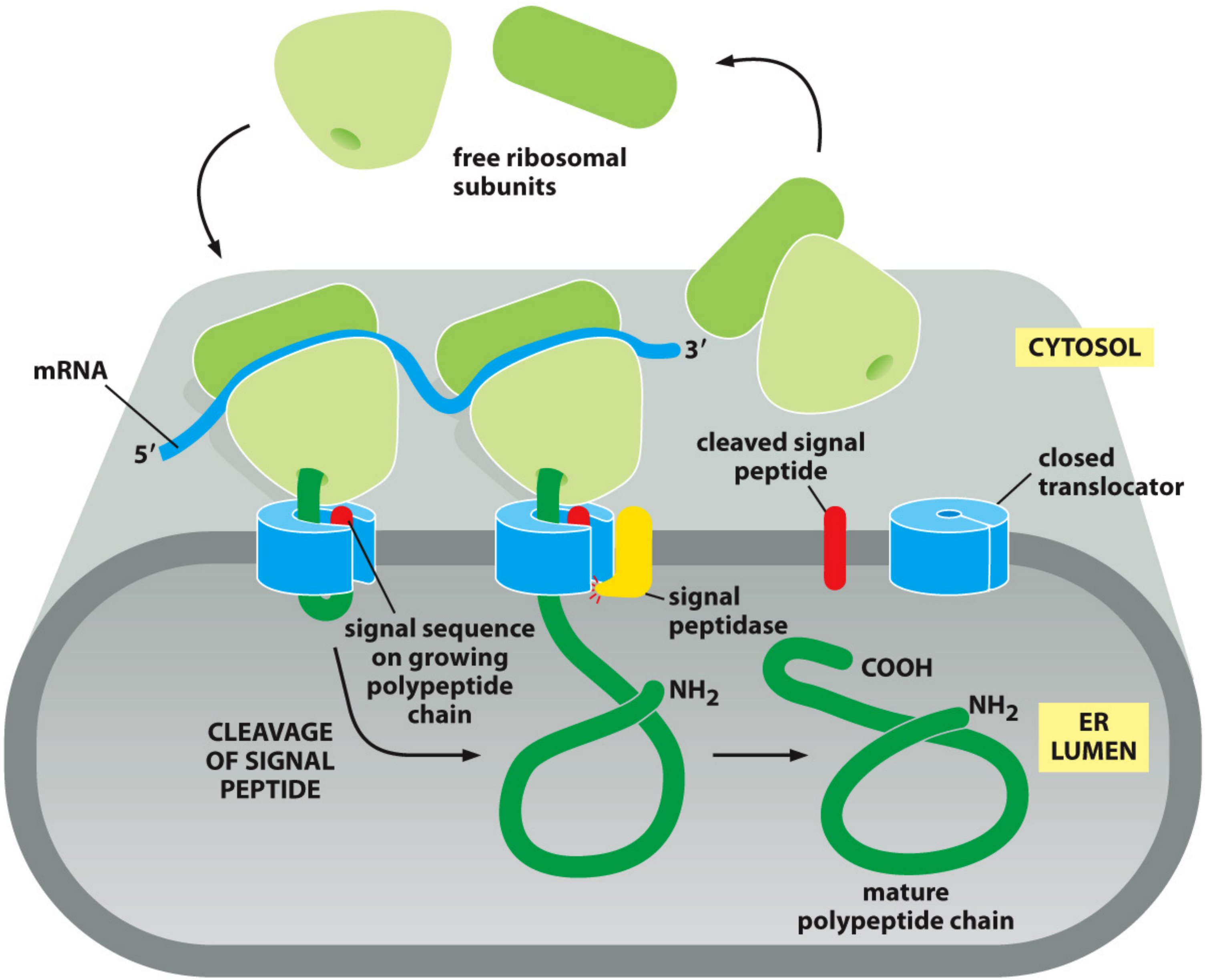

Figure 12-35 Molecular Biology of the Cell 6e (© Garland Science 2015)

Translocation Across the ER Membrane Does Not Always Require Ongoing Polypeptide Chain Elongation

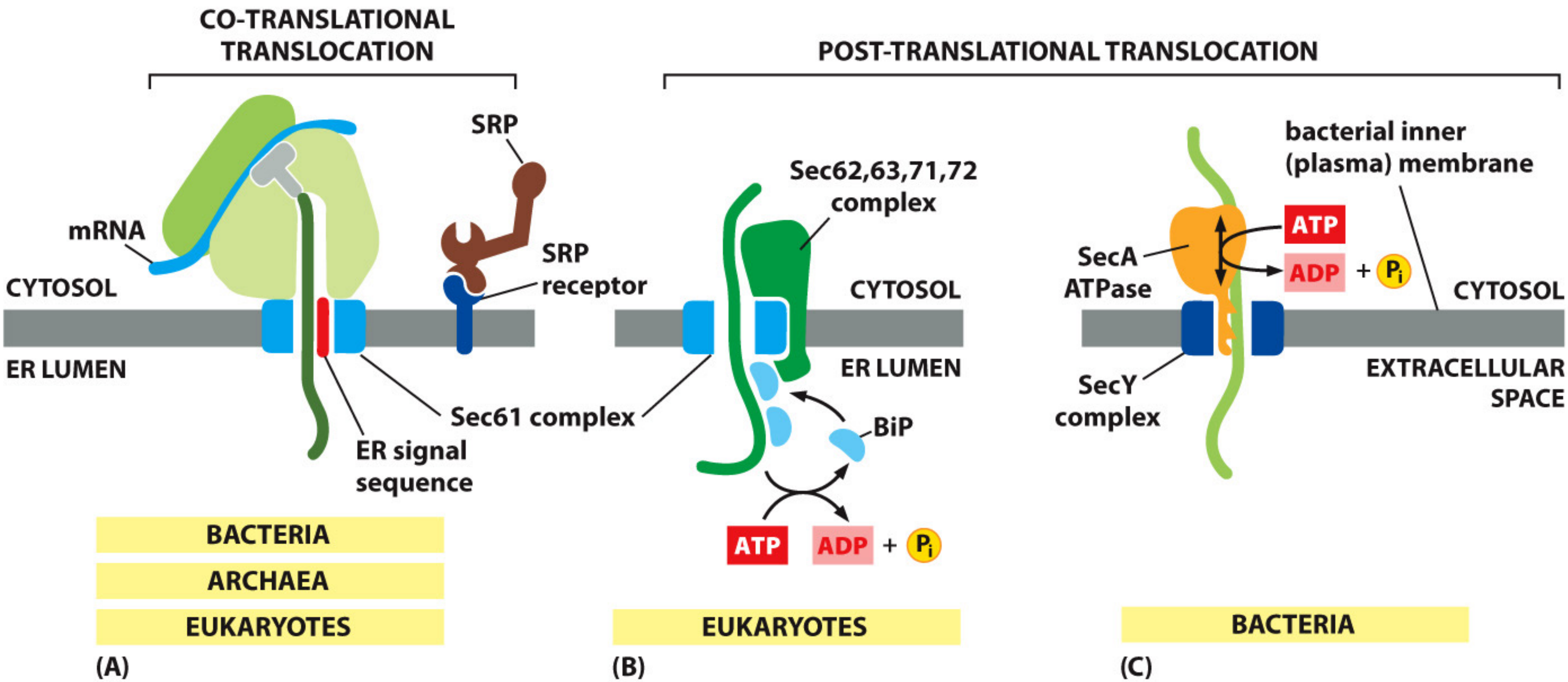

Figure 12-41 Molecular Biology of the Cell 6e (© Garland Science 2015)

In Single-Pass Transmembrane Proteins, a Single Internal ER Signal Sequence Remains in the Lipid Bilayer as a Membrane-spanning α Helix

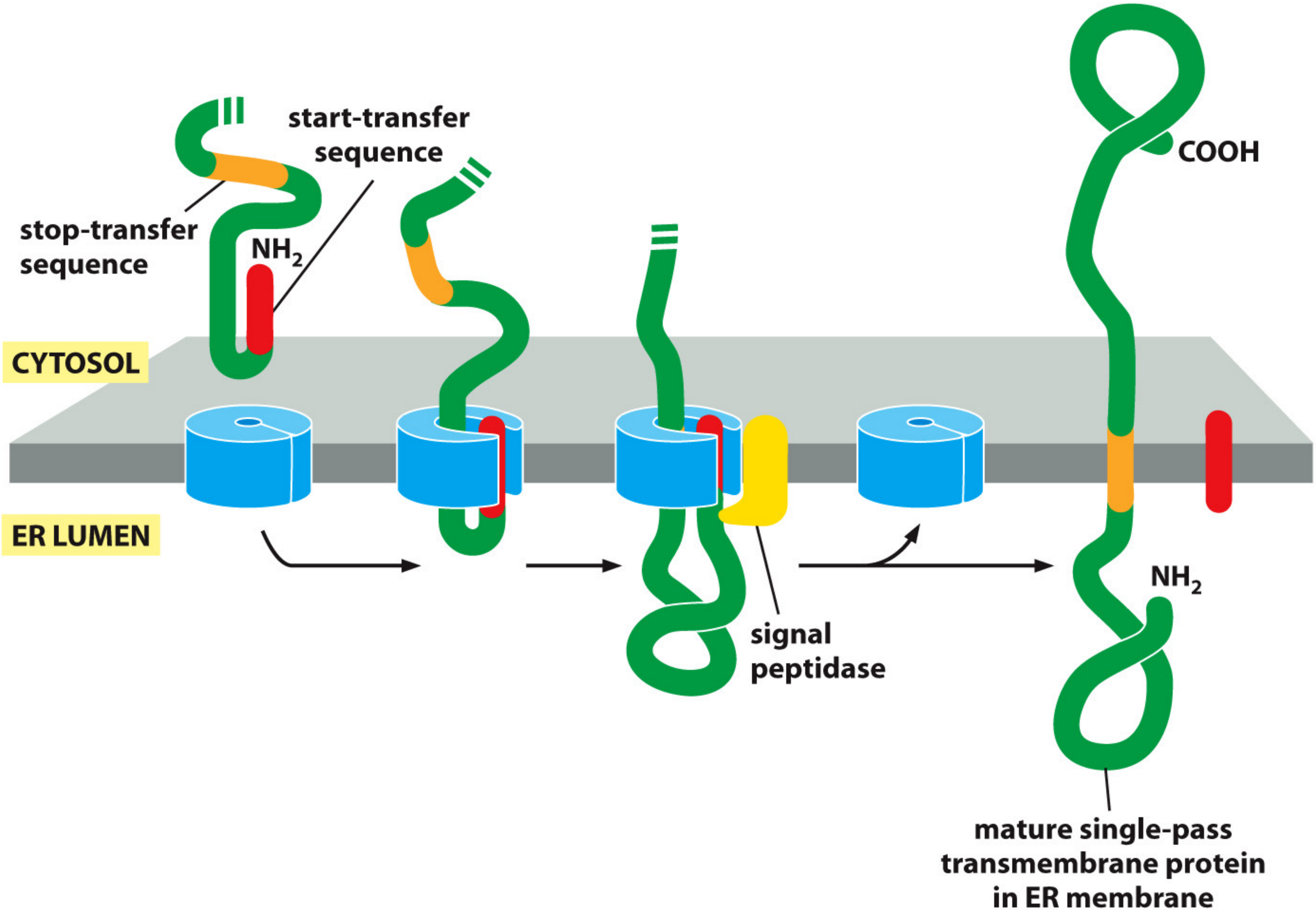

Figure 12-42 Molecular Biology of the Cell 6e (© Garland Science 2015)

In Single-Pass Transmembrane Proteins, a Single Internal ER Signal Sequence Remains in the Lipid Bilayer as a Membrane-spanning α Helix

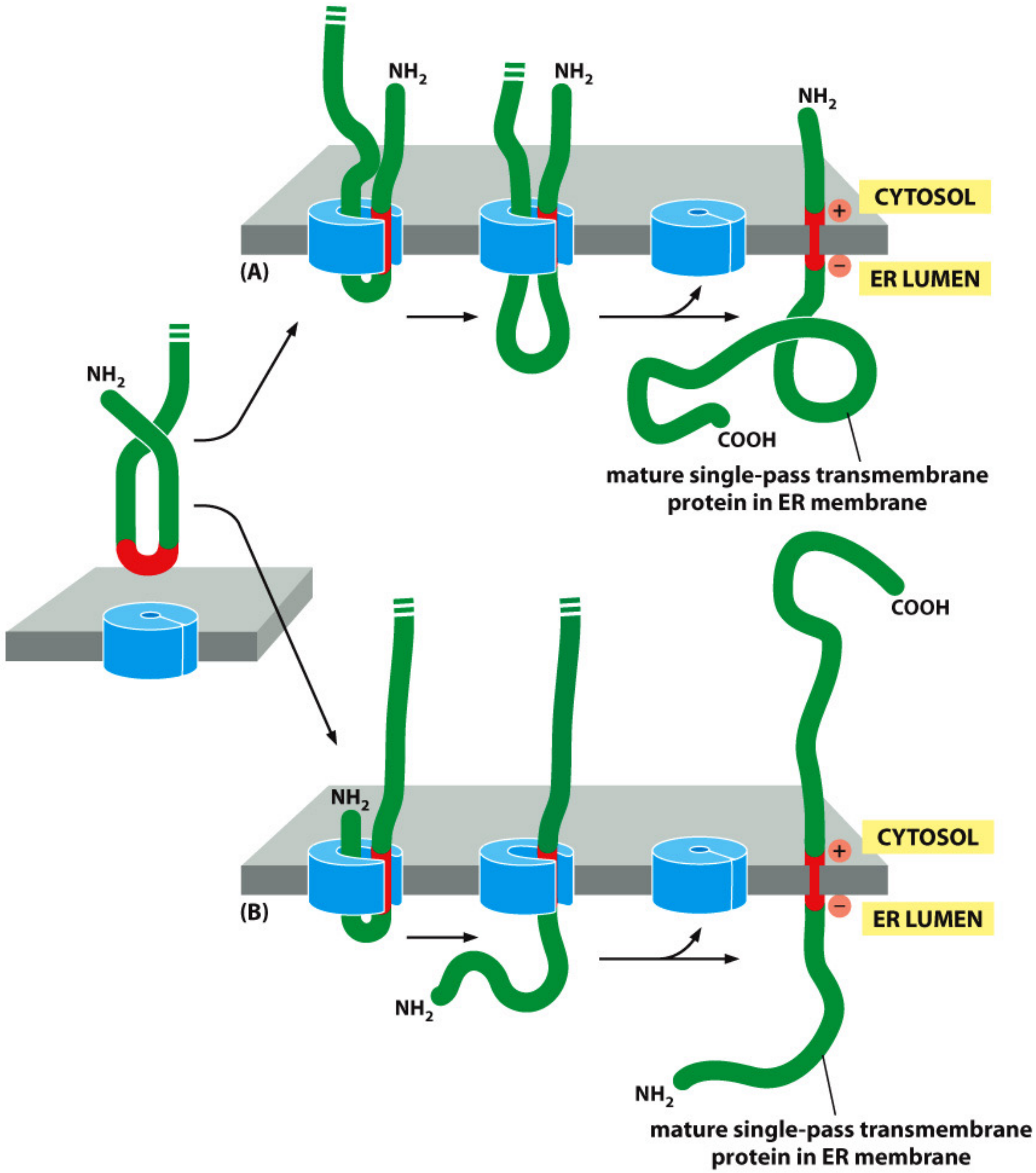

Figure 12-43 Molecular Biology of the Cell 6e (© Garland Science 2015)

Combinations of Start-Transfer and Stop-Transfer Signals Determine the Topology of Multipass Transmembrane Proteins

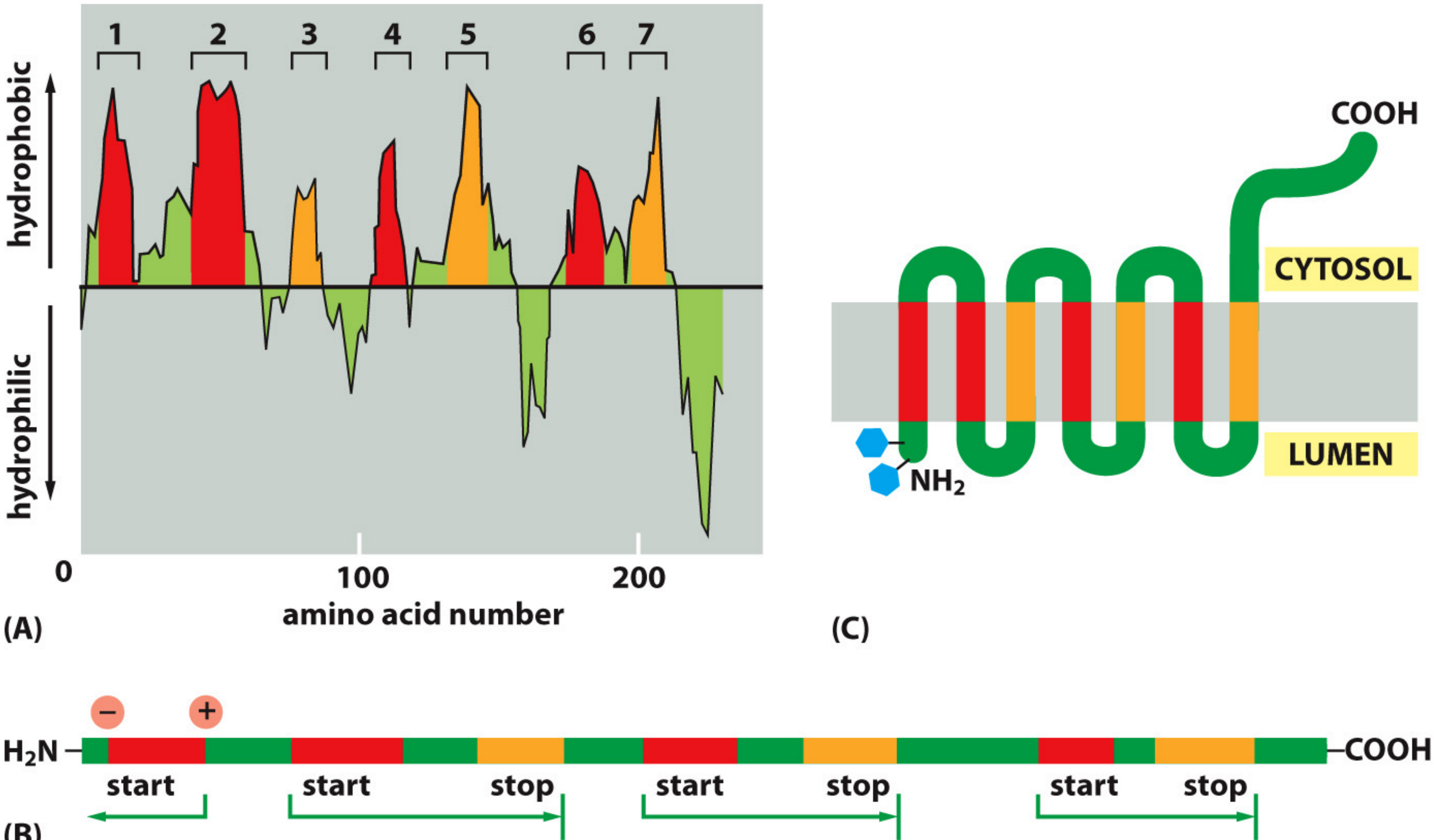

Figure 12-45 Molecular Biology of the Cell 6e (© Garland Science 2015)

Combinations of Start-Transfer and Stop-Transfer Signals Determine the Topology of Multipass Transmembrane Proteins

End of T5