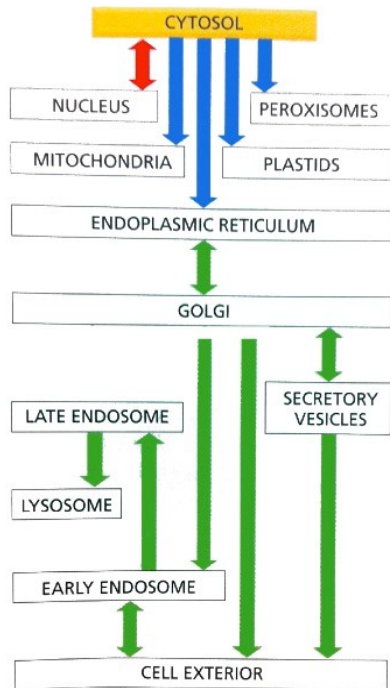


Intracellular Compartments and Transport

Membrane-enclosed organelles

Protein sorting: how each protein gets into the right organelle



Proteins delivered directly from cytosol

Red = gated transport

Blue = transmembrane transport

Proteins delivered in vesicles

Green = vesicular transport

Signal sequences

Nuclear proteins imported through nuclear pores:

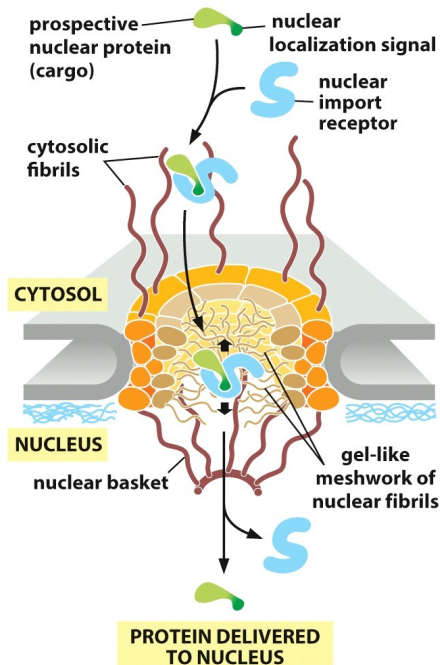


Figure 15-9 Essential Cell Biology, 4th ed. (© Garland Science 2014)

How does the nuclear import receptor get back out (without taking the nuclear protein out too)?

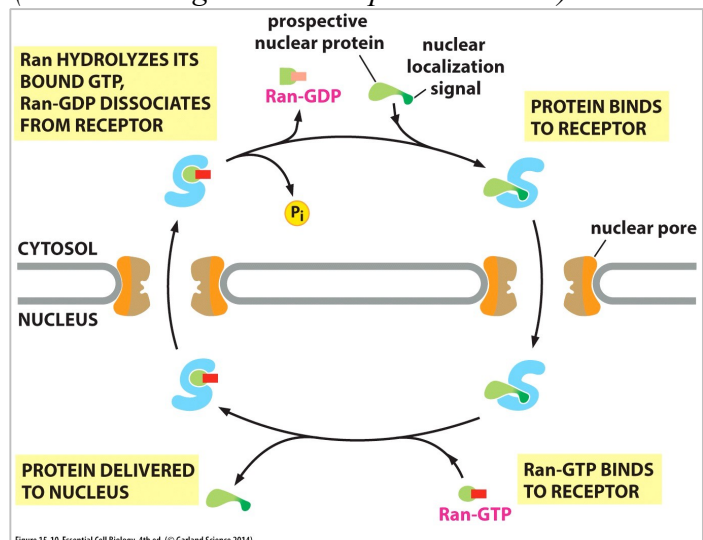
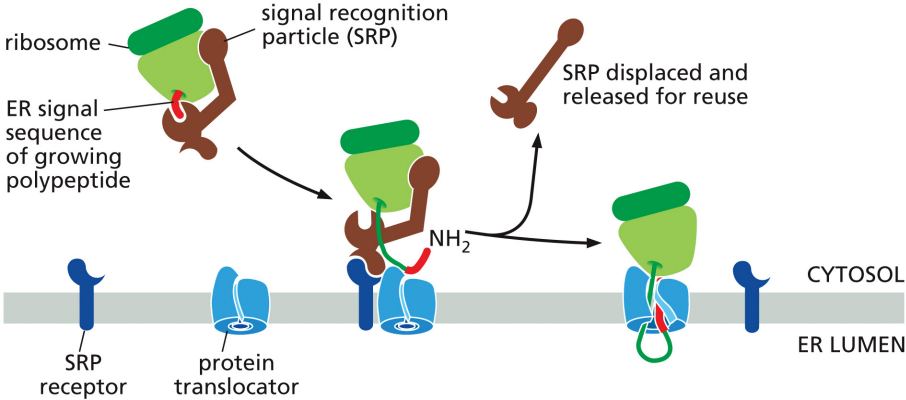


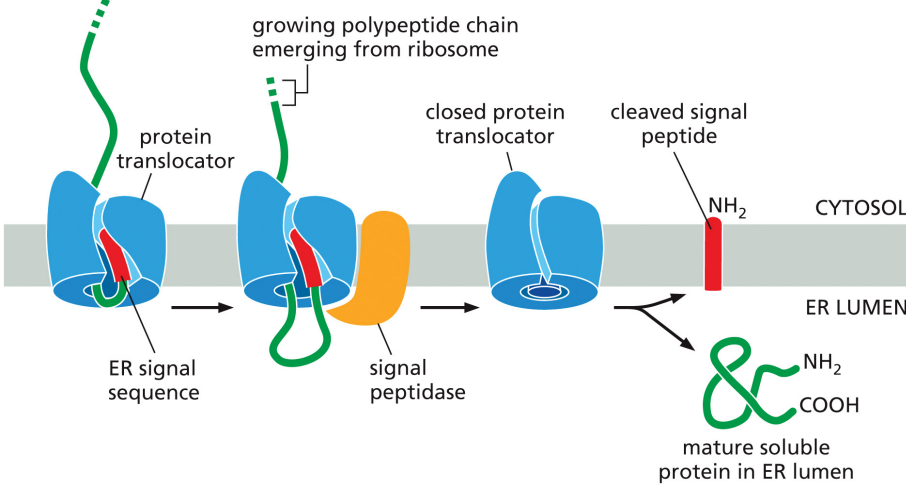
Figure 15-10 Essential Cell Biology, 4th ed. (© Garland Science 2014)

Mitochondrial and chloroplast proteins

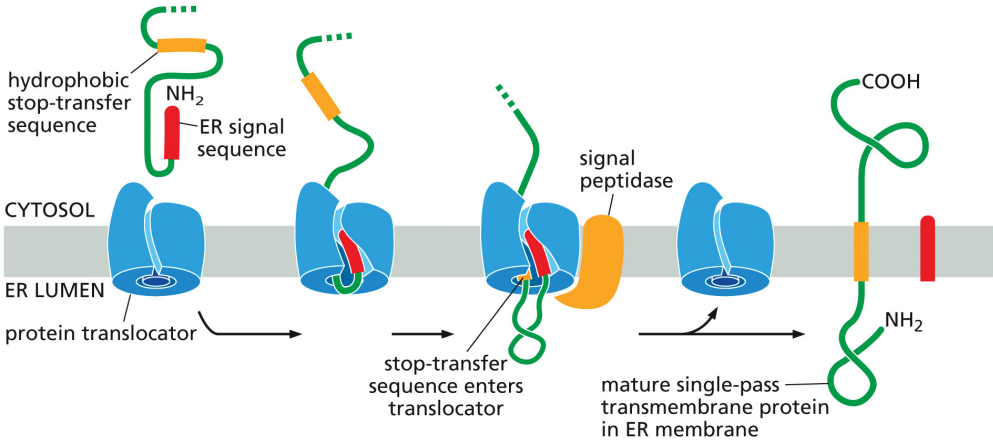
Entry into the endoplasmic reticulum



Soluble proteins

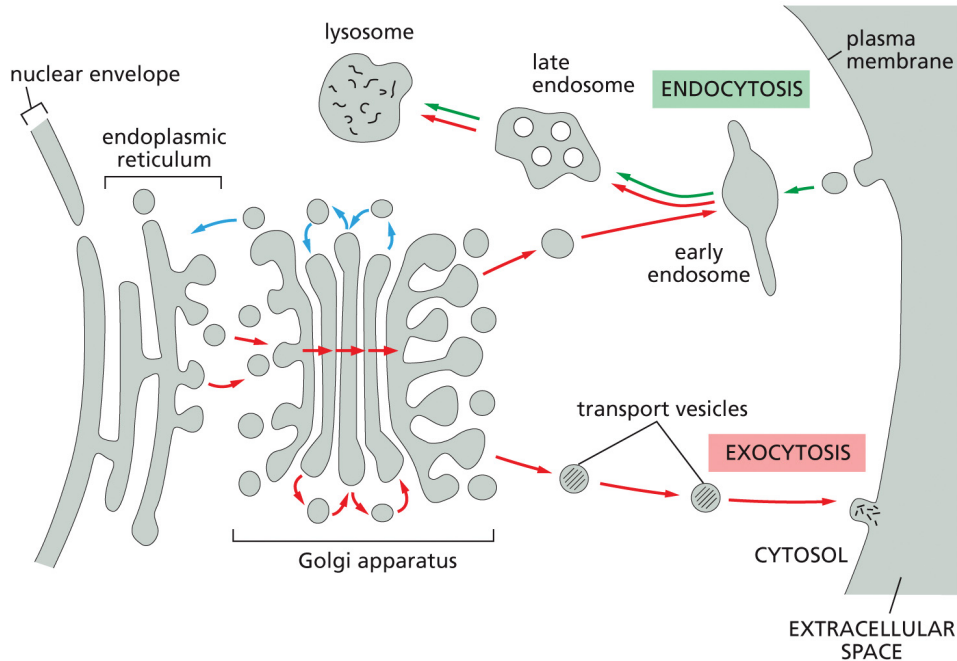


Transmembrane proteins use additional hydrophobic stretches as *start* and *stop* transfer signals



Vesicular transport

What transport vesicles do



How vesicles bud from membranes

How vesicles dock with the right compartments

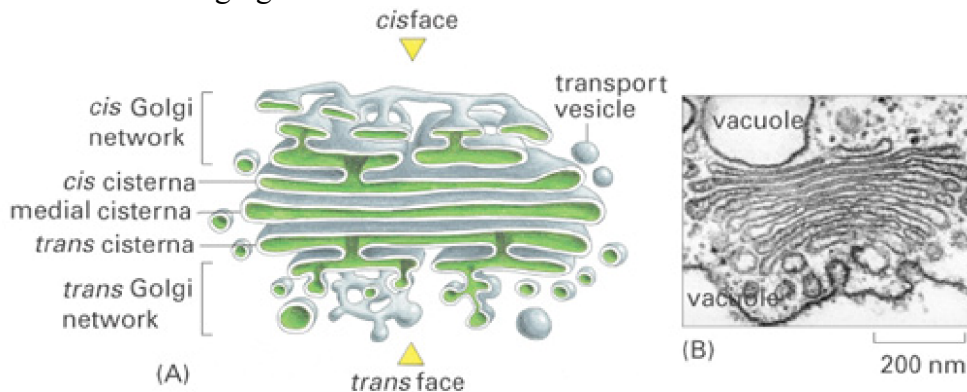
Secretory pathways: vesicle trafficking to the plasma membrane

Modification in the ER

Retention in the ER vs. exit

- cystic fibrosis

Further modification in the golgi



Exocytosis

Endocytic pathways: how certain proteins get into cells

Phagocytosis: a dramatic form of endocytosis

Pinocytosis

Receptor-mediated endocytosis

Endosomes

Lysosomes

How SARS-CoV-2 (the COVID virus) enters cells