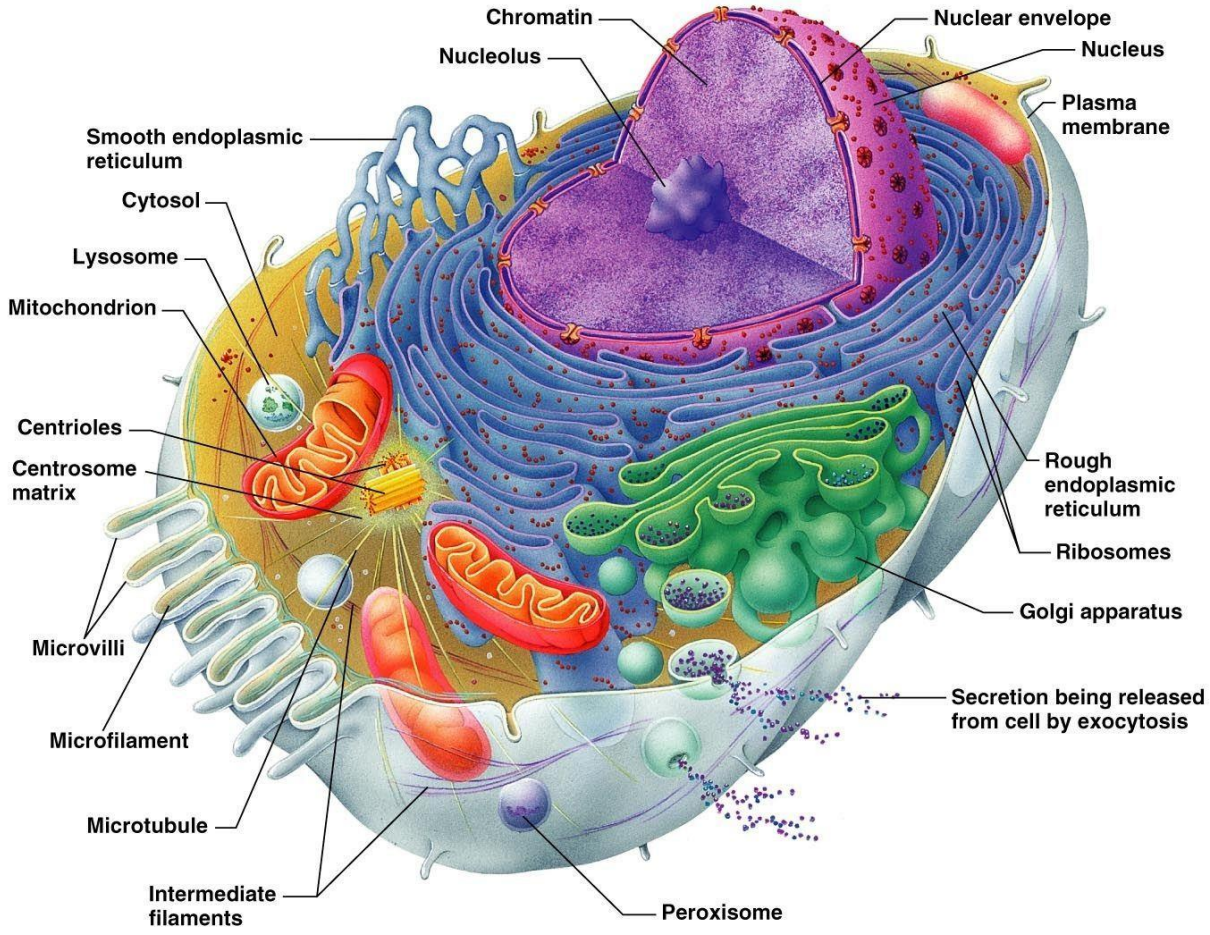
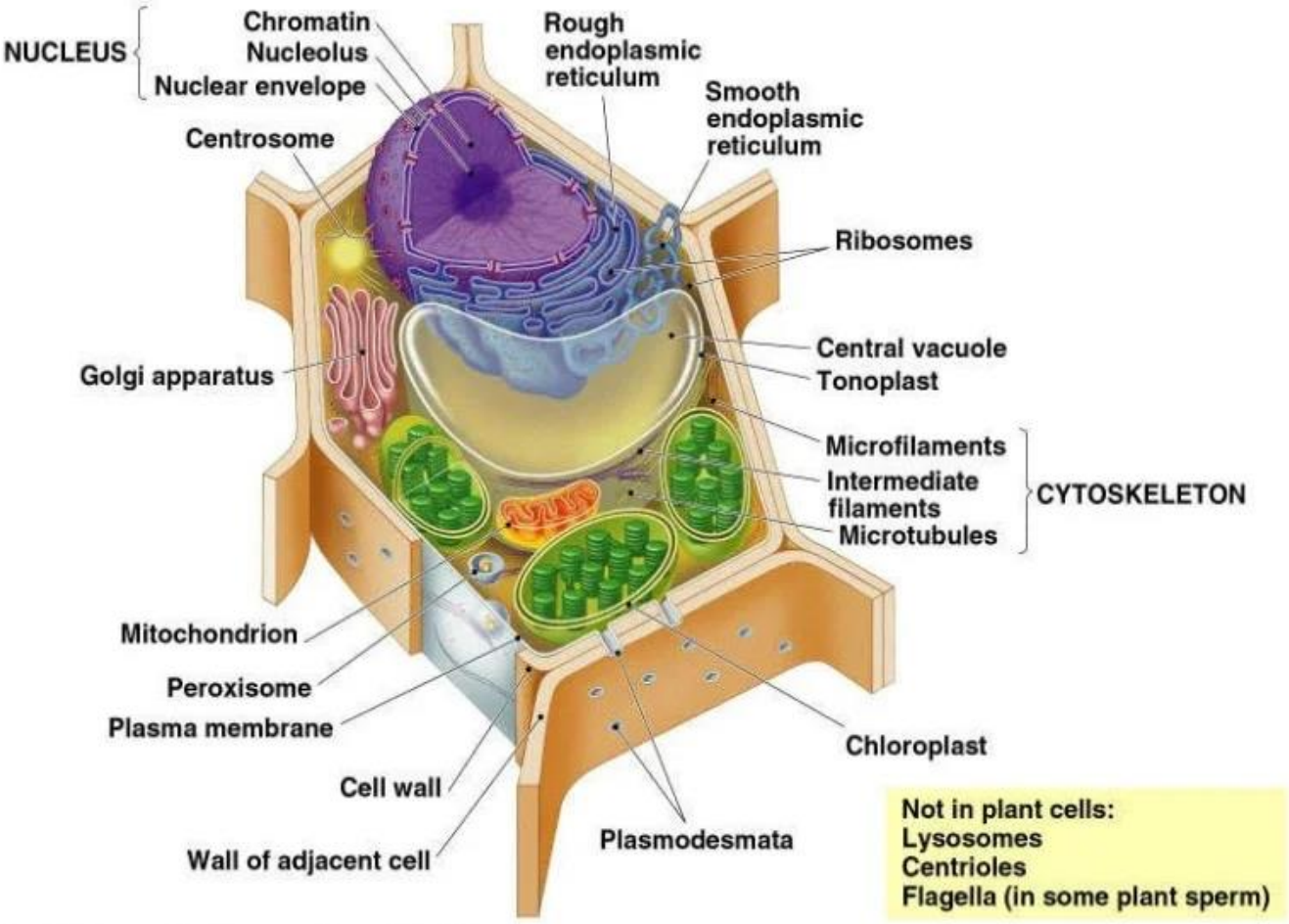
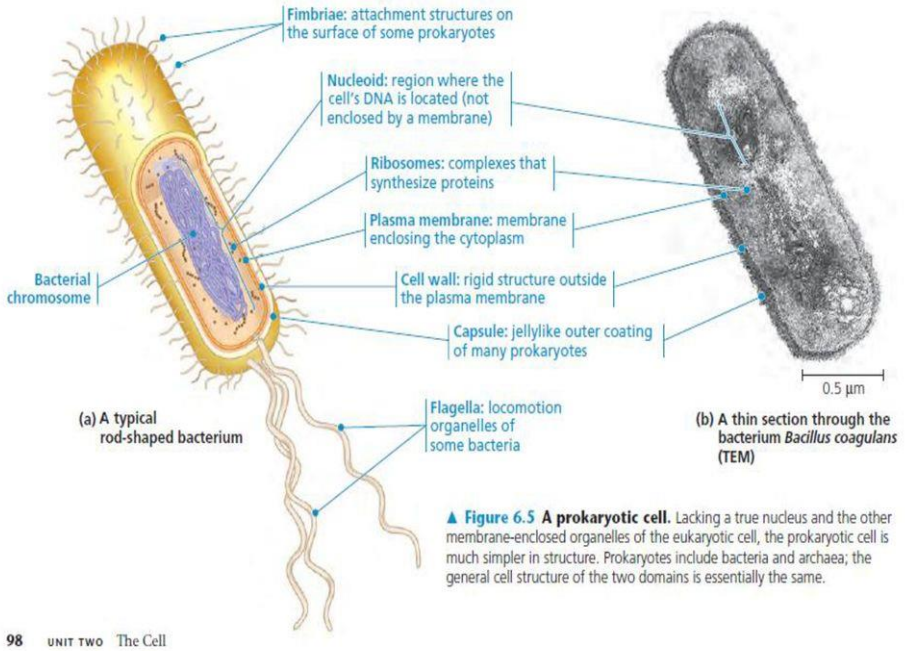
วิชา ชีววิทยา

EP.1 เซลล์ 1







▲ **Figure 6.5 A prokaryotic cell.** Lacking a true nucleus and the other membrane-enclosed organelles of the eukaryotic cell, the prokaryotic cell is much simpler in structure. Prokaryotes include bacteria and archaea; the general cell structure of the two domains is essentially the same.

REECE J.B. & CAMPBELL, N.A. (2011). campbell biology. Boston, Benjamin Cummings/Pearson.

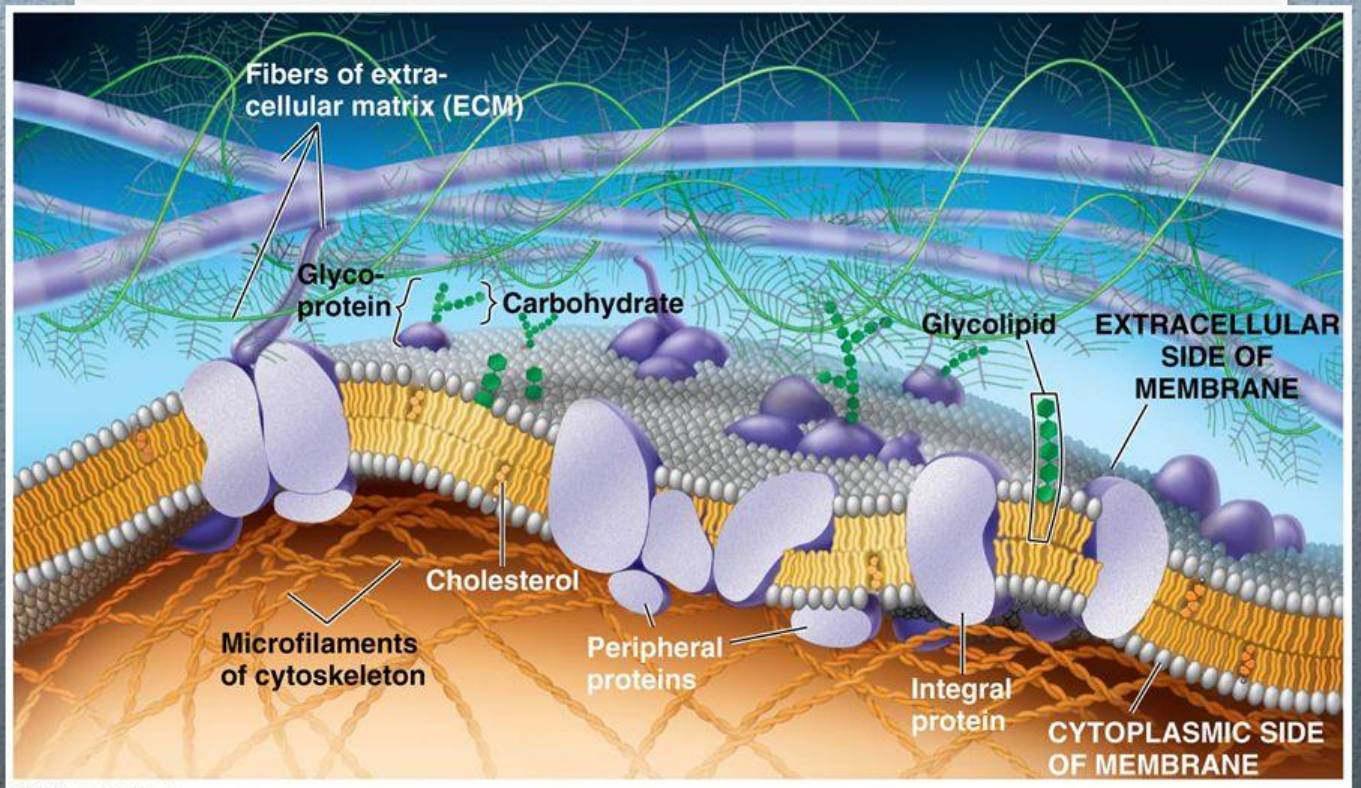

Fibers of extra-
cellular matrix (ECM)
Glyco-
protein
Carbohydrate
Glycolipid
EXTRACELLULAR
SIDE OF
MEMBRANE
Cholesterol
Microfilaments
of cytoskeleton
Peripheral
proteins
Integral
protein
CYTOPLASMIC SIDE
OF MEMBRANE
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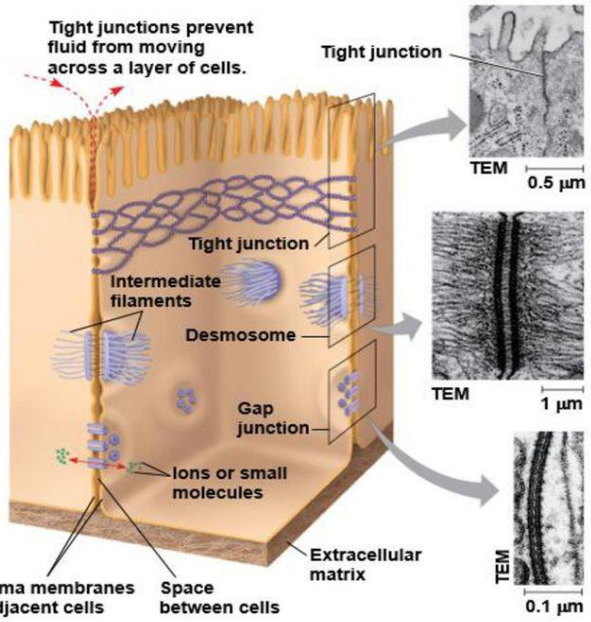
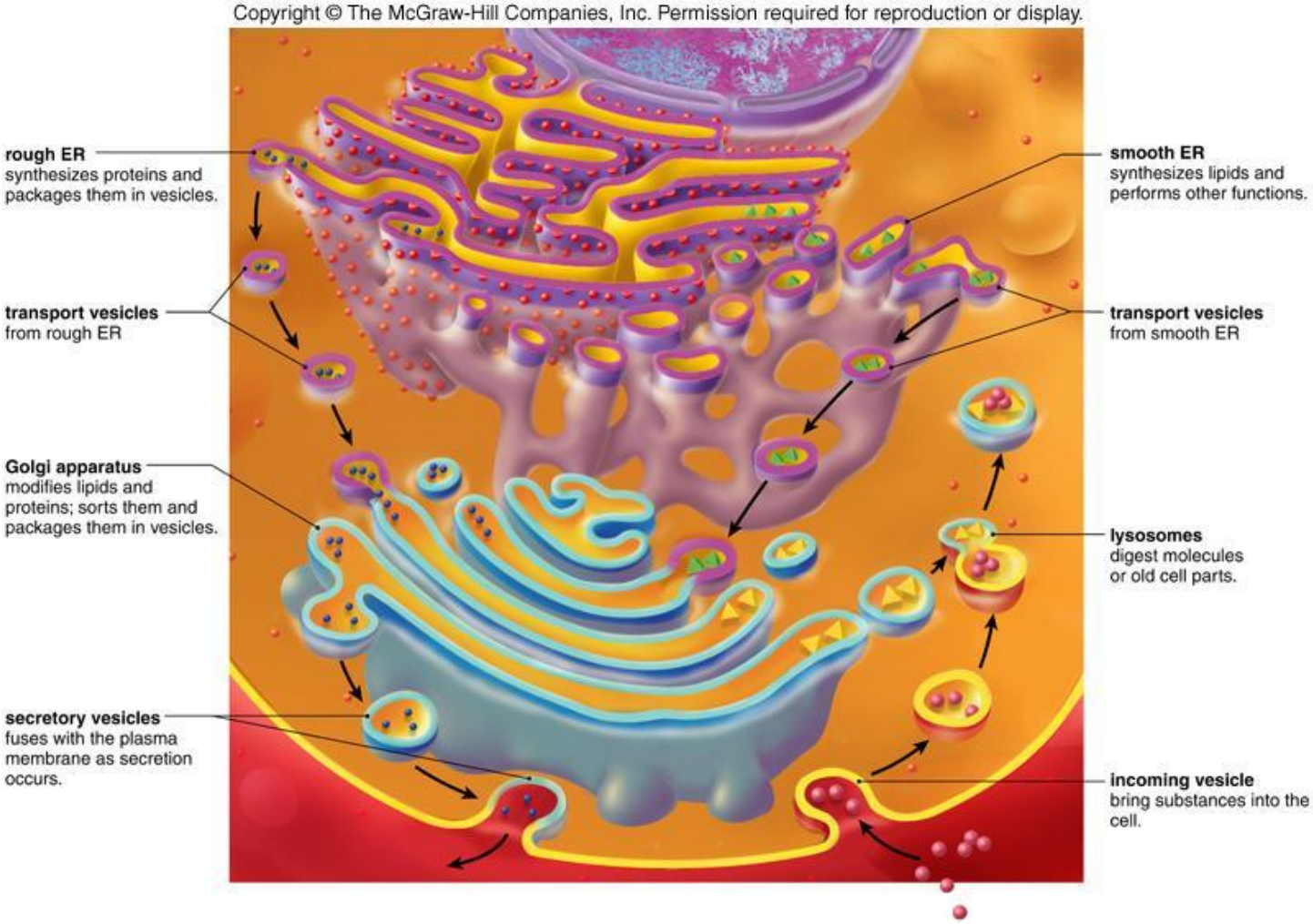
Figure 4.27 Exploring Cell Junctions in Animal Tissues





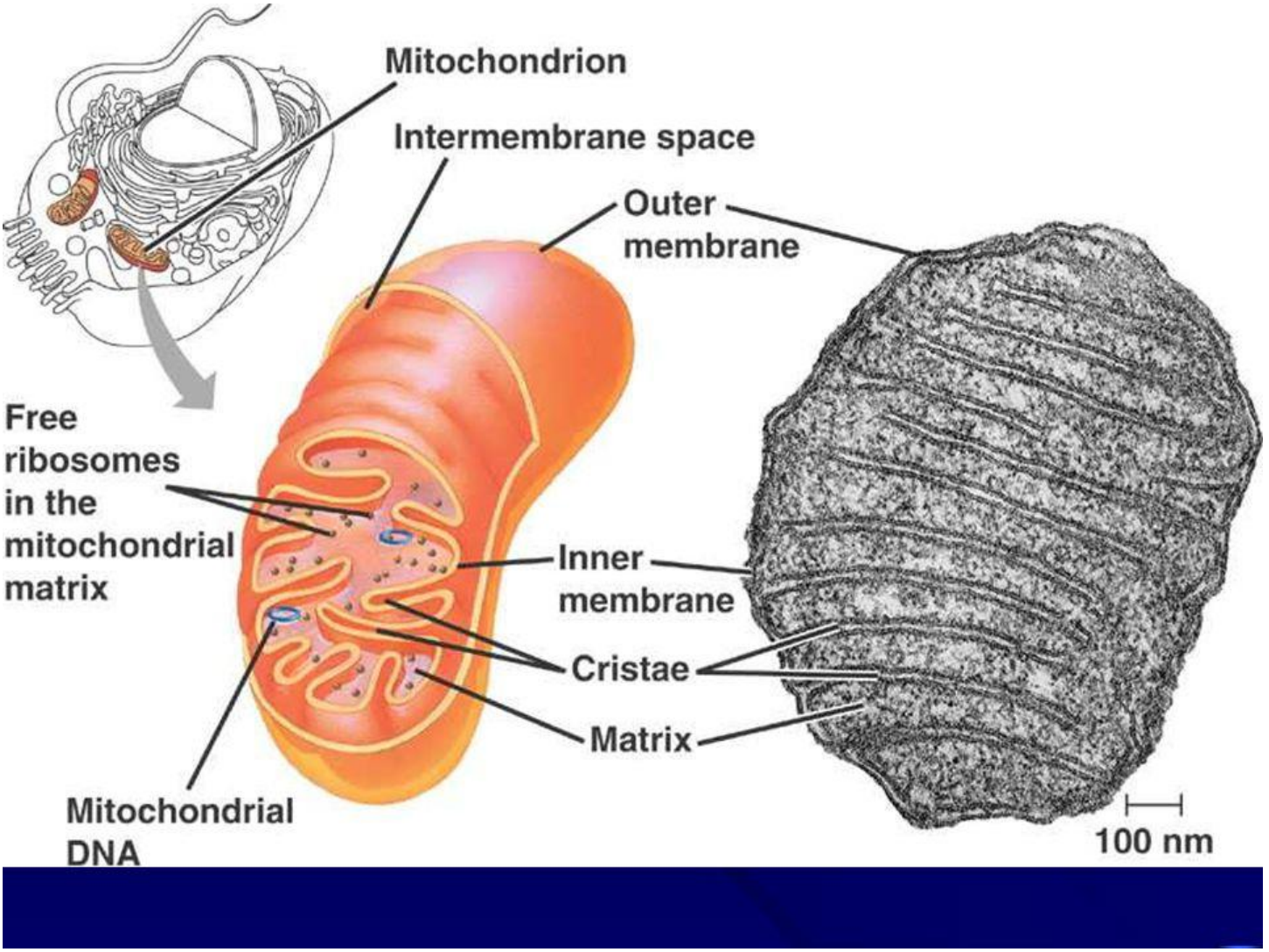
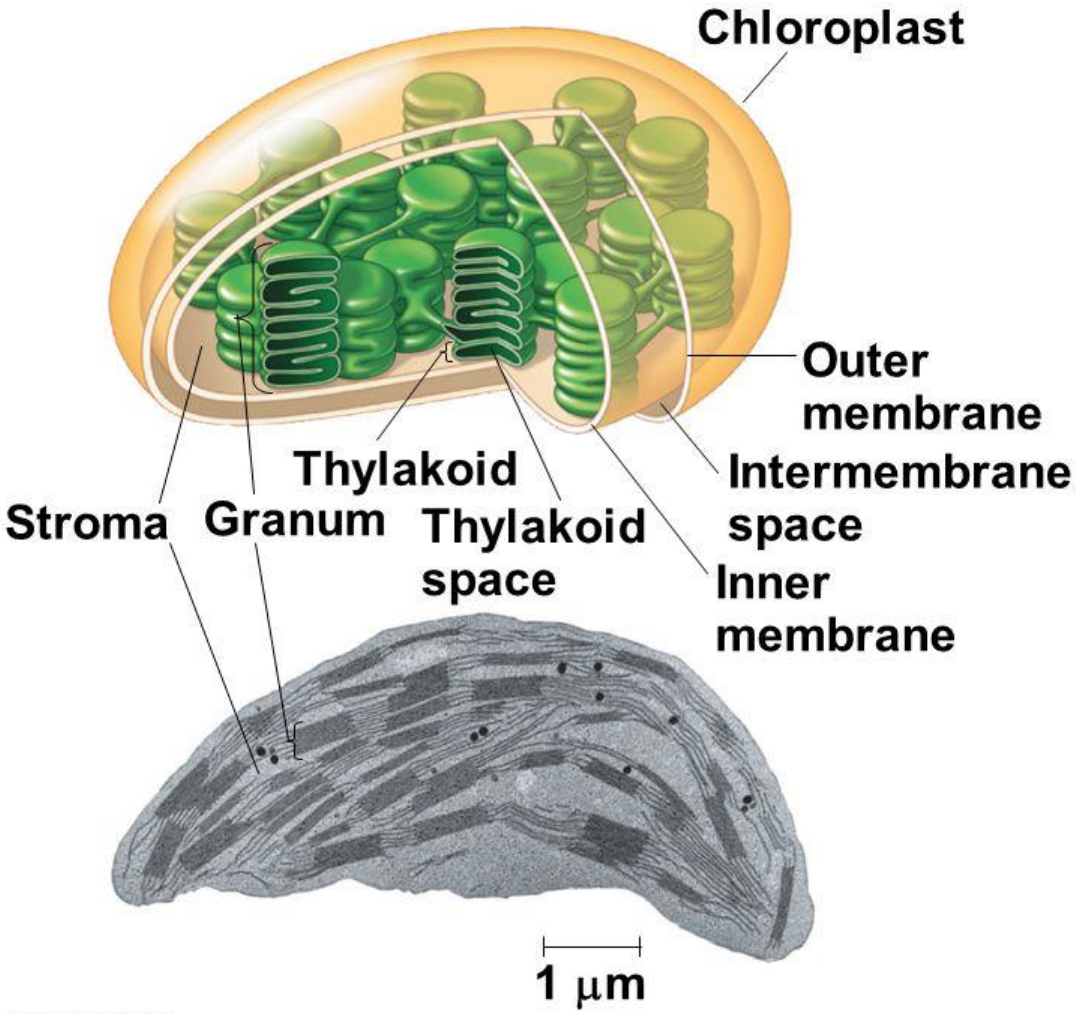
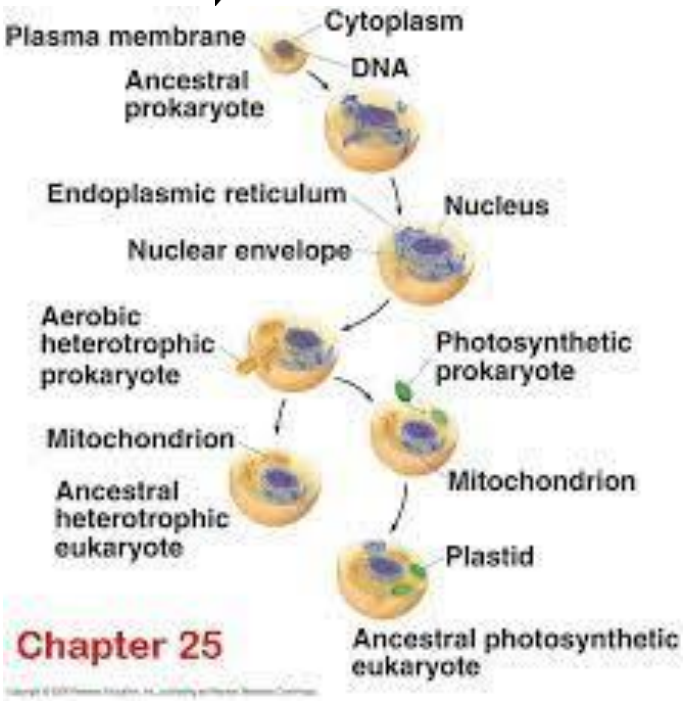
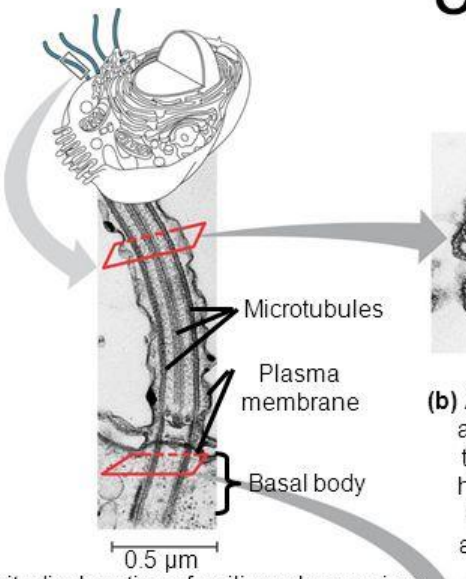

Mitochondrion
Intermembrane space
Outer membrane
Free ribosomes in the mitochondrial matrix
Inner membrane
Cristae
Matrix
Mitochondrial DNA
100 nm

Figure 10.4b

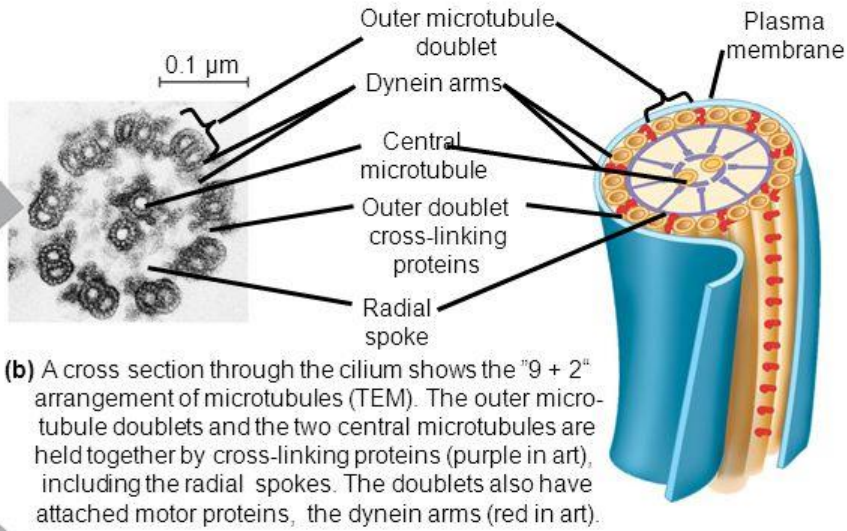



Plasma membrane
Cytoplasm
DNA
Ancestral prokaryote
Endoplasmic reticulum
Nucleus
Nuclear envelope
Aerobic heterotrophic prokaryote
Photosynthetic prokaryote
Mitochondrion
Mitochondrion
Ancestral heterotrophic eukaryote
Plastid
Ancestral photosynthetic eukaryote
Chapter 25

Ultrastructure of a eukaryotic flagellum or cilium

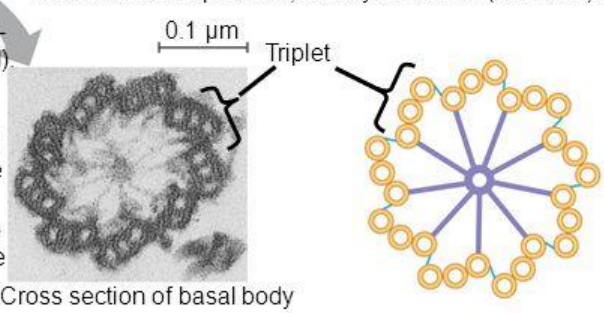


(a) A longitudinal section of a cilium shows microtubules running the length of the structure (TEM).



(b) A cross section through the cilium shows the "9 + 2" arrangement of microtubules (TEM). The outer microtubule doublets and the two central microtubules are held together by cross-linking proteins (purple in art), including the radial spokes. The doublets also have attached motor proteins, the dynein arms (red in art).

(c) Basal body: The nine outer doublets of a cilium or flagellum extend into the basal body, where each doublet joins another microtubule to form a ring of nine triplets. Each triplet is connected to the next by non-tubulin proteins (blue). The two central microtubules terminate above the basal body (TEM).



Cross section of basal body

Schleiden Schwann

http://kentsimmons.uwinnipeg.ca/cm1504/celltheory.htm

S.J. Singer and G.L.Nicolson