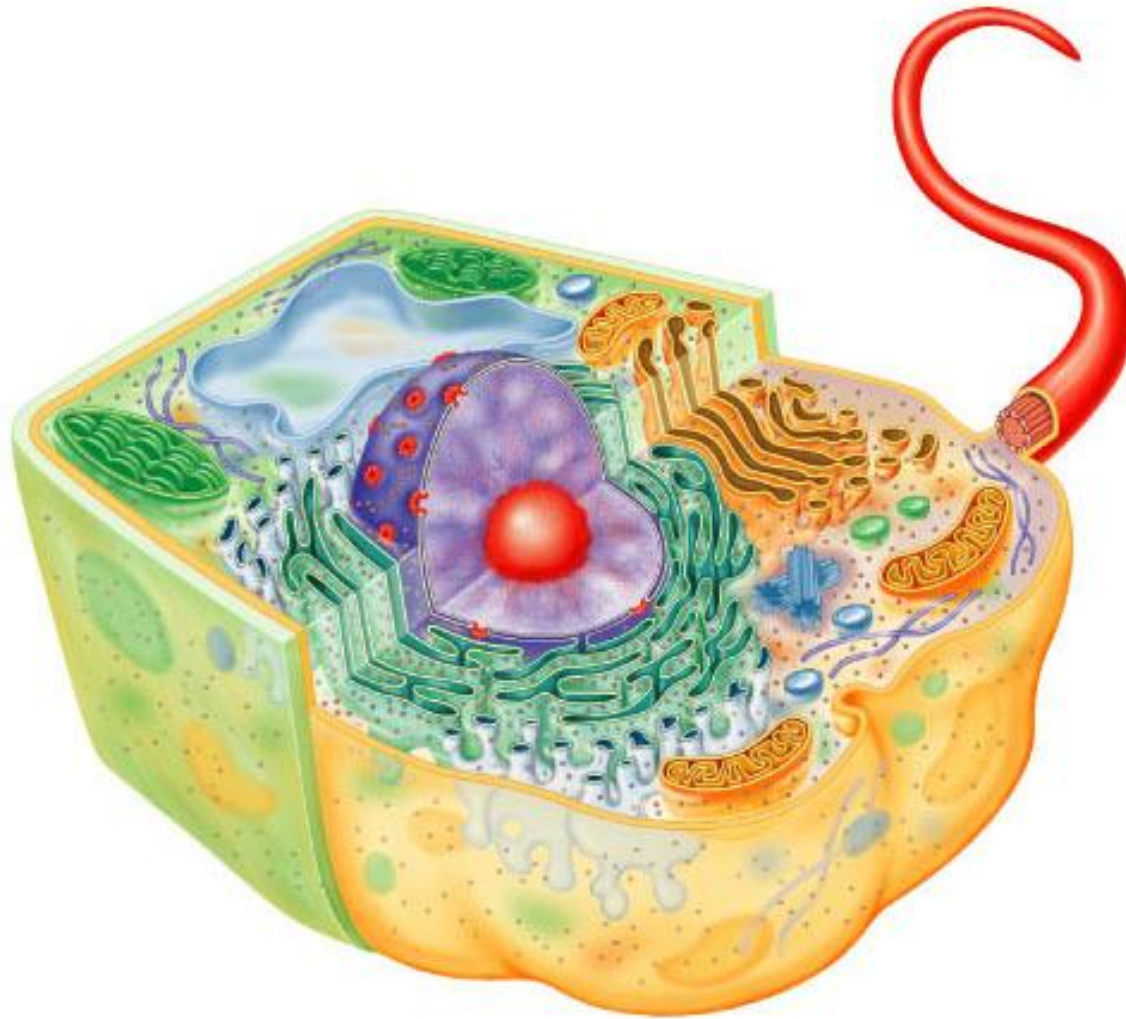
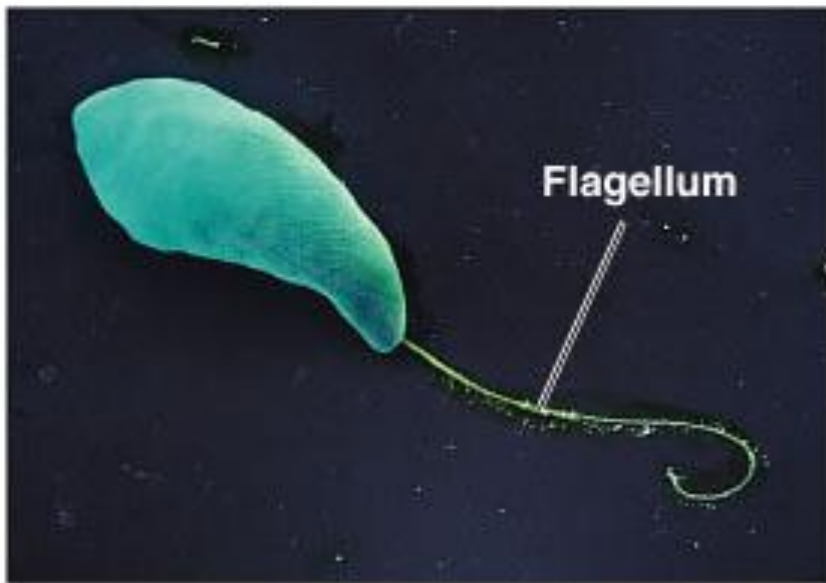


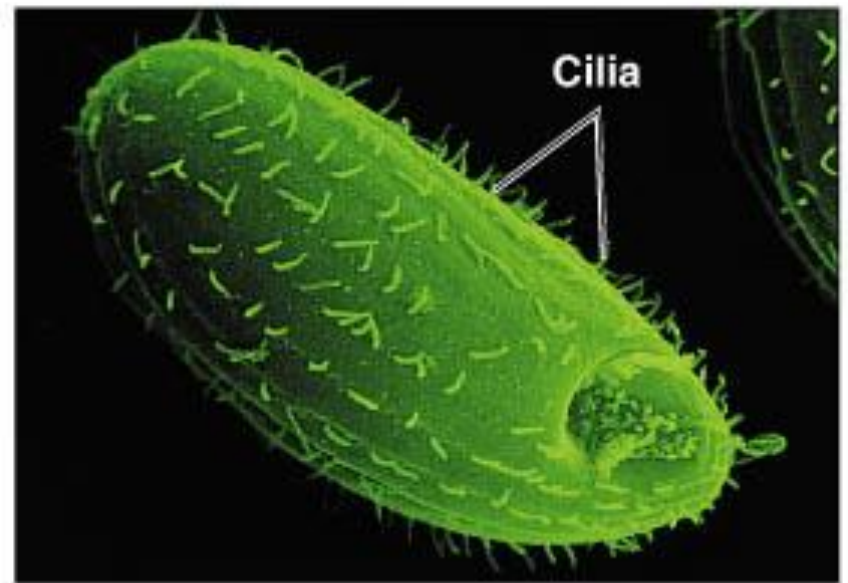
Eukaryotic cell



Flagella and Cilia



(a)



(b)

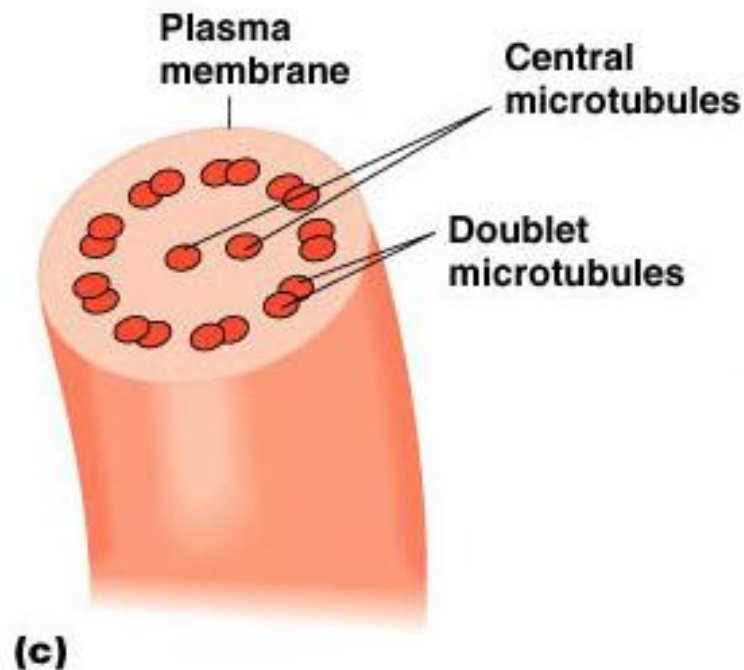
Functional anatomy of prokaryotes



Figure 4.23a, b
LAHORE

Flagella

- Microtubules
- Tubulin
- 9 pairs + 2 arrangements



Functional anatomy of prokaryotes



Figure 4.23c

LAHORE

Cell Wall

- Cell wall
 - ▣ Plants and algae cellulose
 - ▣ Fungi chitin (NAG)
 - ▣ Yeast (glucan, mannan)
- Glycocalyx
 - ▣ Carbohydrates extending from animal plasma membrane
 - ▣ Bonded to proteins and lipids in membrane

Plasma Membrane

- ❑ Phospholipid bilayer
- ❑ Peripheral proteins
- ❑ Integral proteins
- ❑ Transmembrane proteins
- ❑ Sterols
- ❑ Glycocalyx carbohydrates

Plasma Membrane

- ❑ Selective permeability
- ❑ Simple diffusion
- ❑ Facilitative diffusion
- ❑ Osmosis
- ❑ Active transport
- ❑ Endocytosis
 - ▣ Phagocytosis: Pseudopods extend and engulf particles
 - ▣ Pinocytosis: Membrane folds inward bringing in fluid and dissolved substances

Eukaryotic Cell

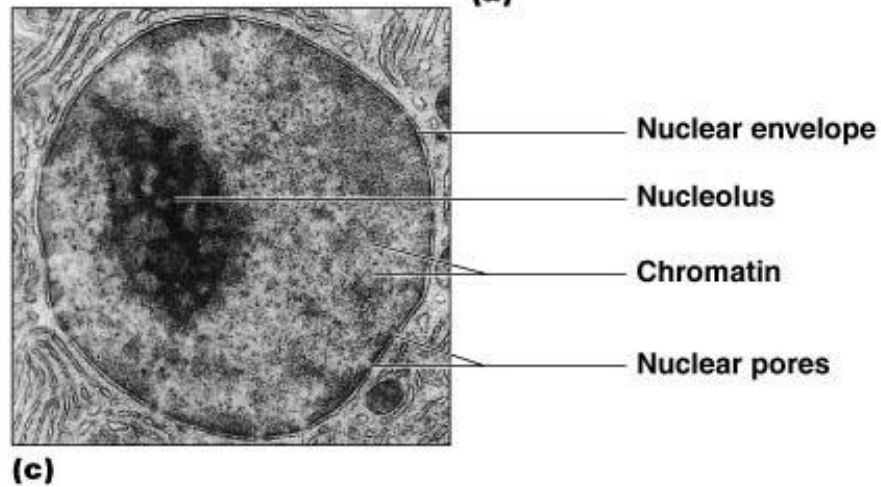
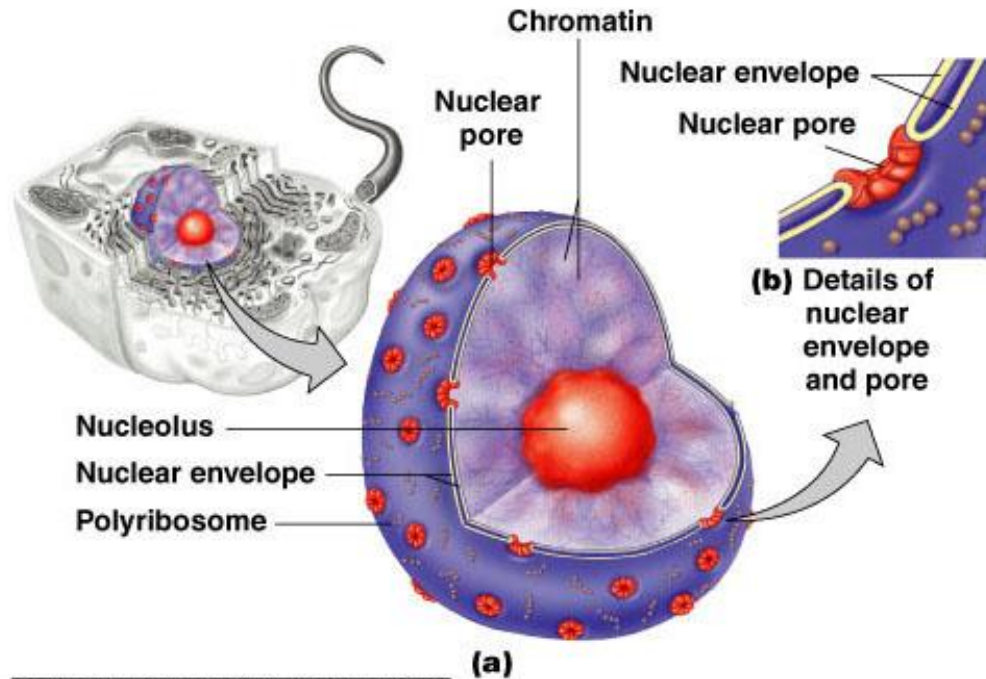
- Cytoplasm membrane Substance inside plasma and outside nucleus
- Cytosol Fluid portion of cytoplasm
- Cytoskeleton Microfilaments, intermediate filaments, microtubules
- Cytoplasmic streaming Movement of cytoplasm throughout cells

Organelles

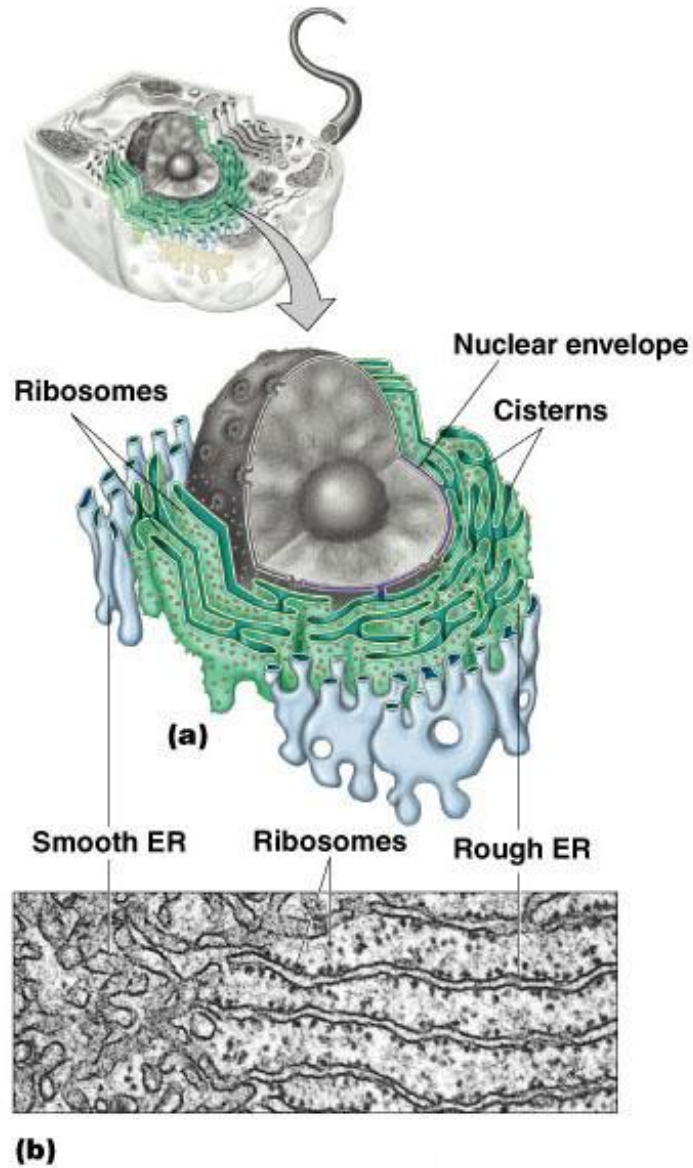
Membrane-bound structures:

- ▣ Nucleus Contains chromosomes
- ▣ ER Transport network
- ▣ Golgi complex Membrane formation and secretion
- ▣ Lysosome Digestive enzymes
- ▣ Vacuole Brings food into cells and provides support
- ▣ Mitochondria Cellular respiration
- ▣ Chloroplast Photosynthesis
- ▣ Peroxisome Oxidation of fatty acids, destroys H_2O_2

Nucleus



Endoplasmic Reticulum



Ribosomes

- 80S

- ▣ Membrane-bound

Attached to ER

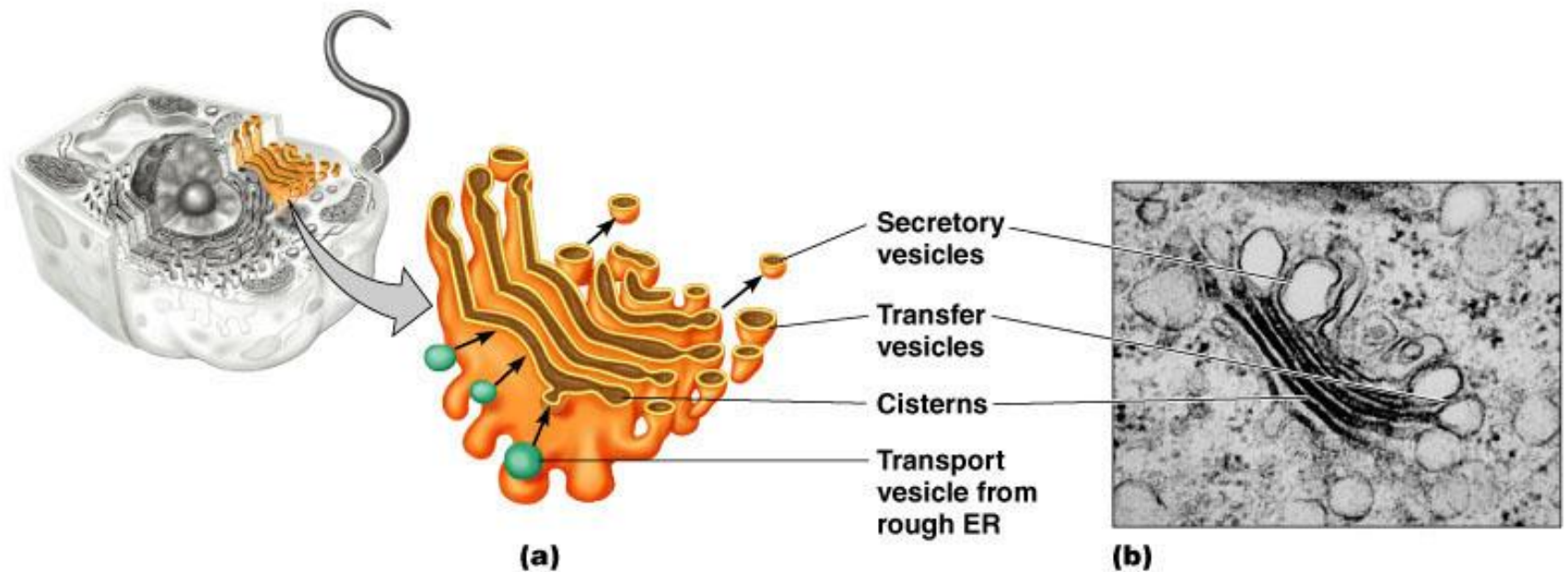
- ▣ Free

In cytoplasm

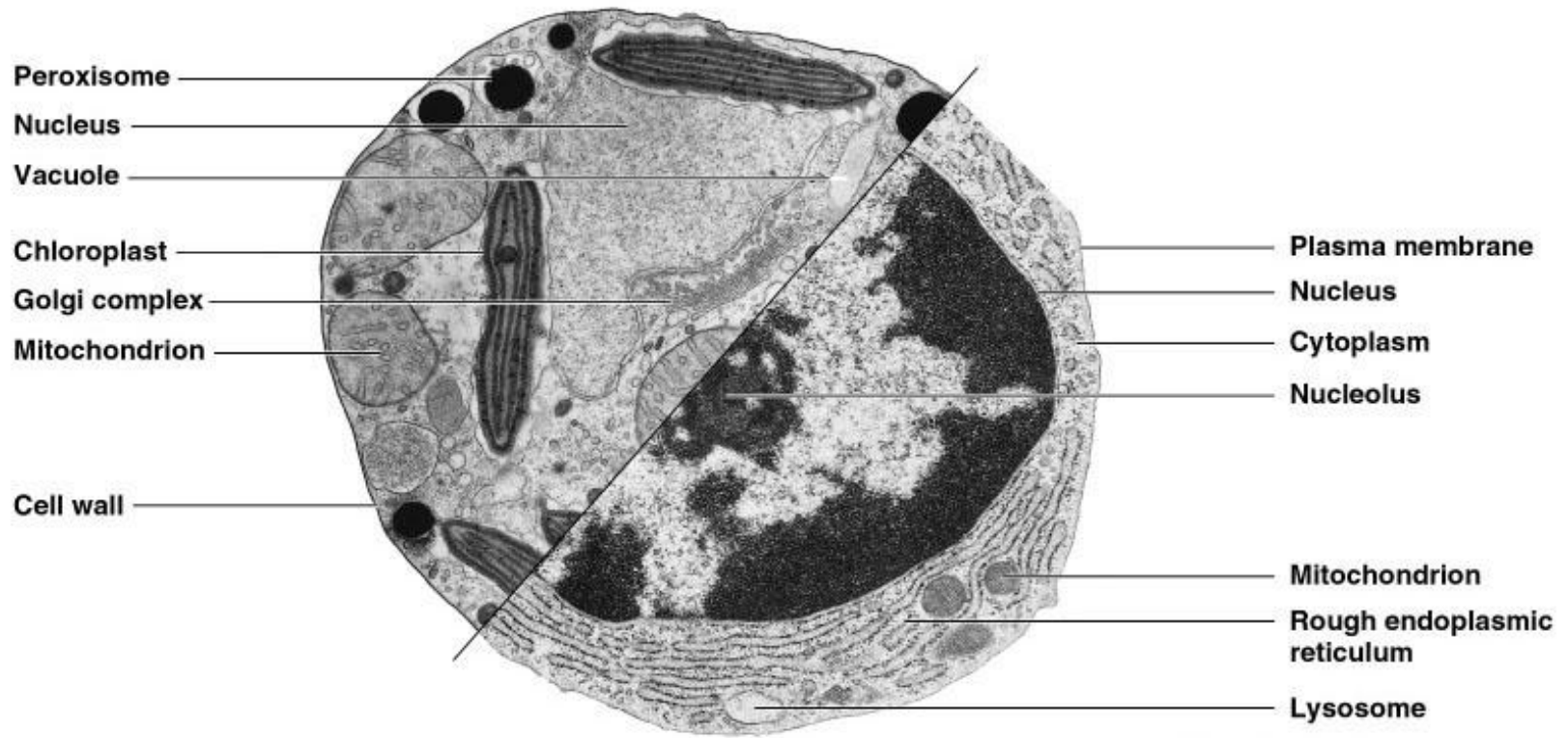
- 70S

- ▣ In chloroplasts and mitochondria

Golgi Complex



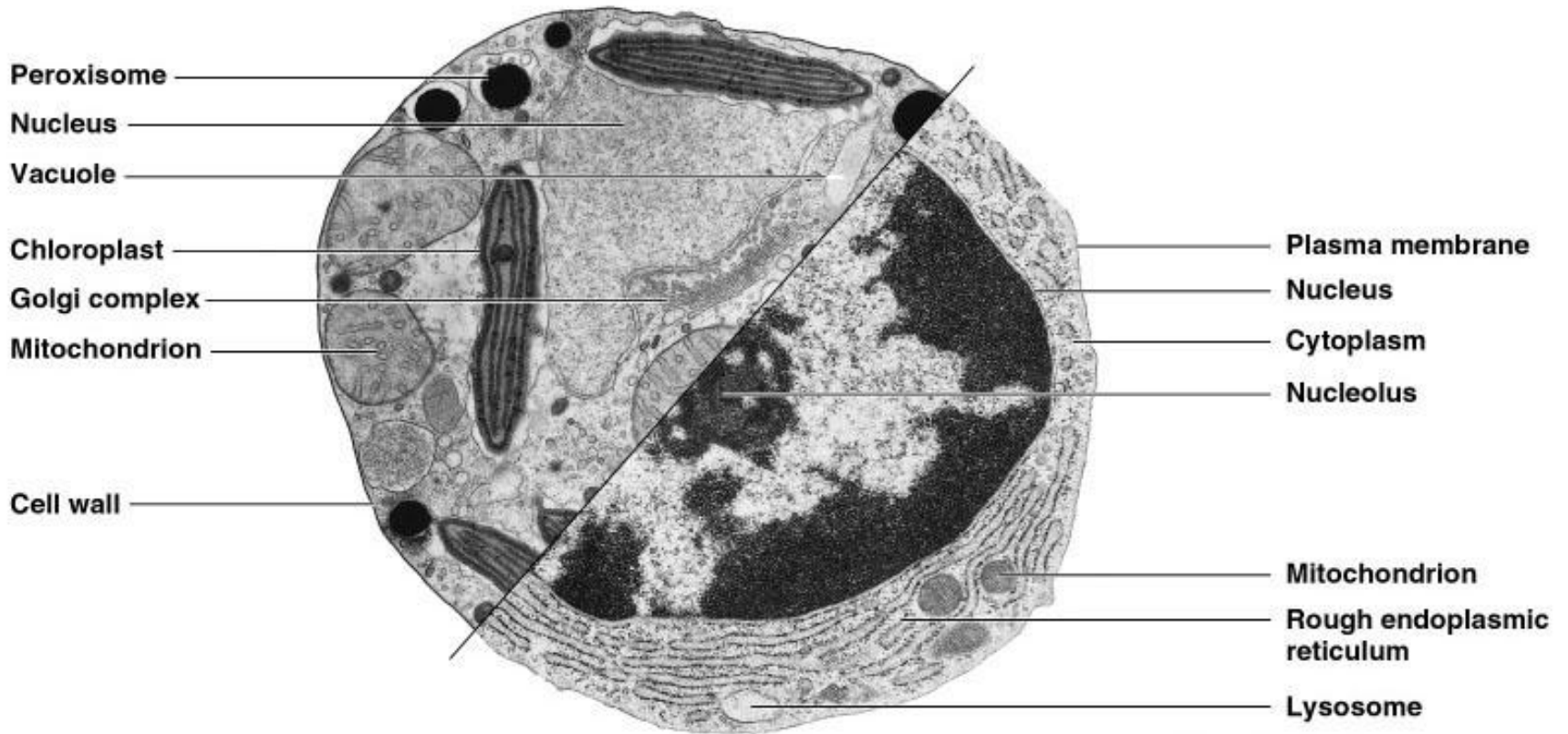
Lysosomes



(b) Plant cell (*Tribonema vulgare*),
an algal cell

Animal cell, an antibody-secreting
plasma cell

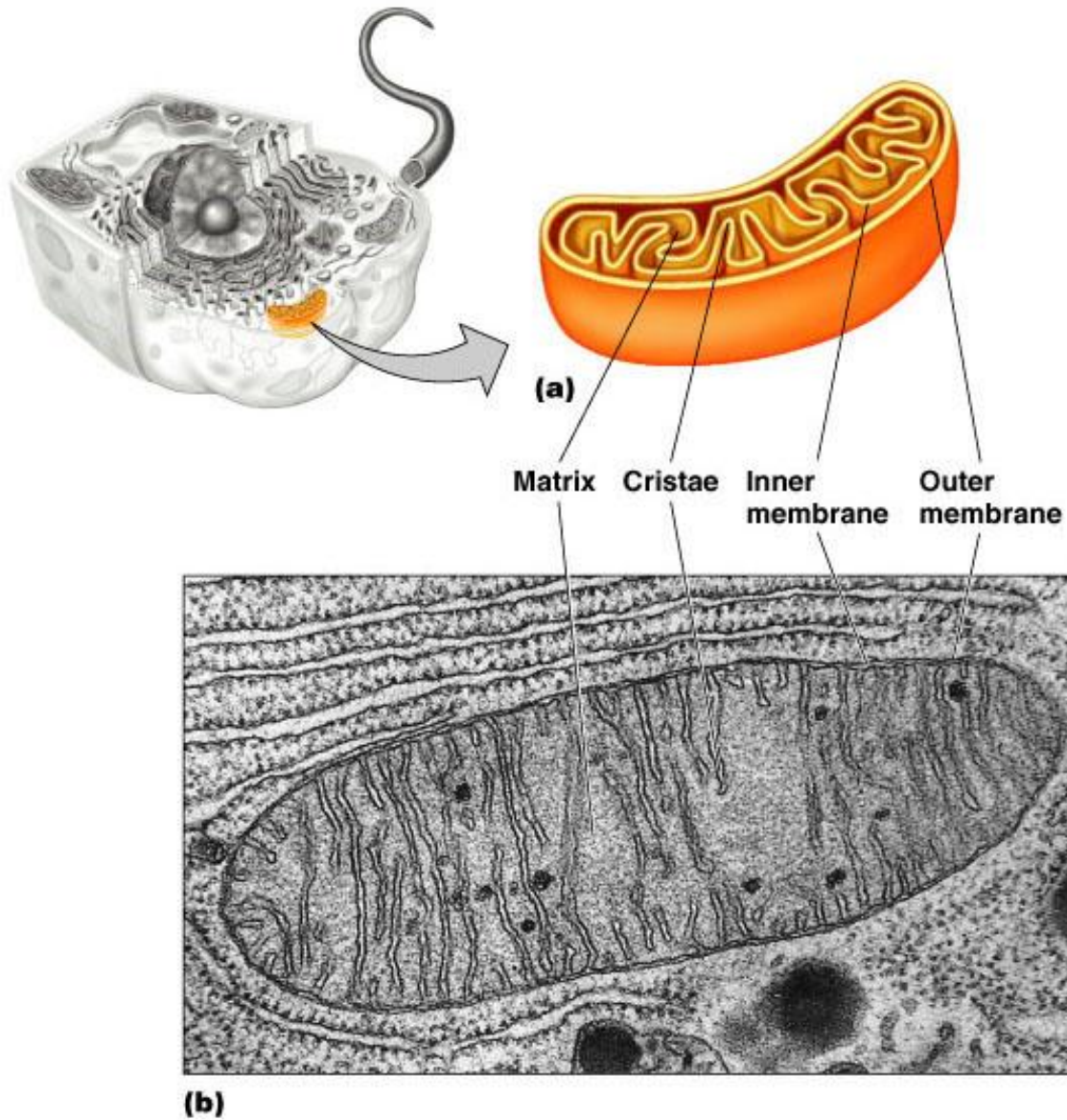
Vacuoles



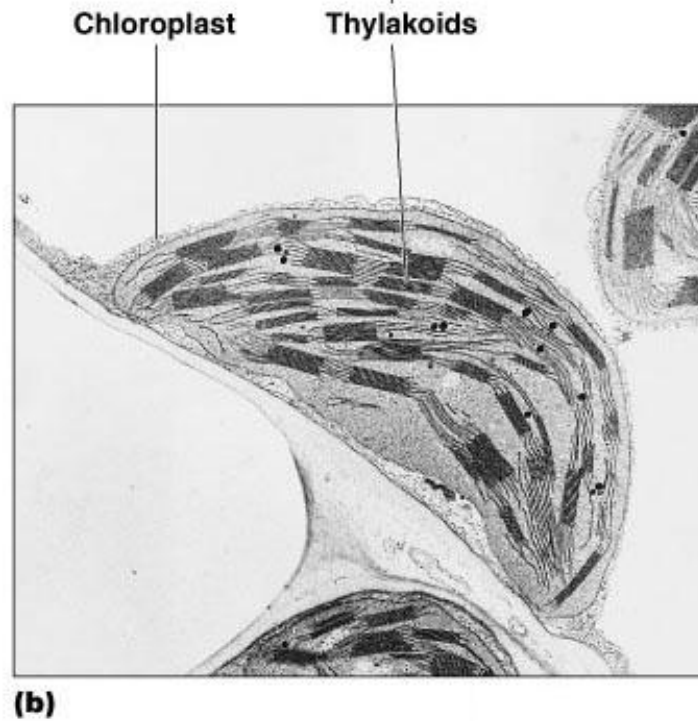
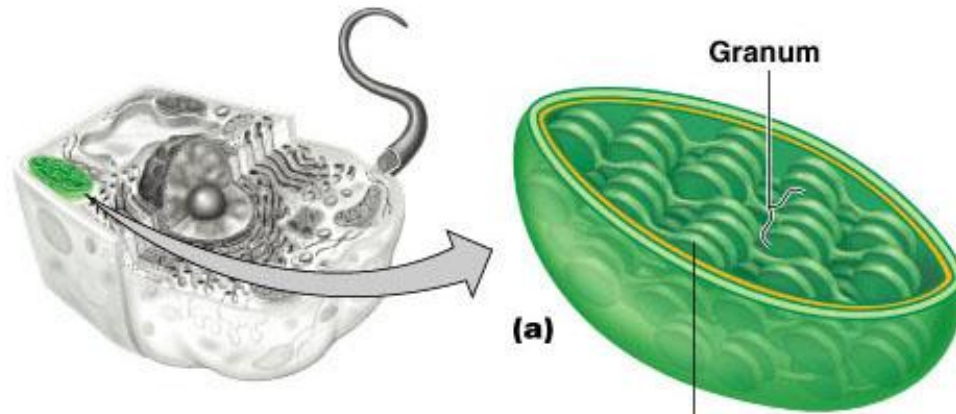
(b) Plant cell (*Tribonema vulgare*),
an algal cell

Animal cell, an antibody-secreting
plasma cell

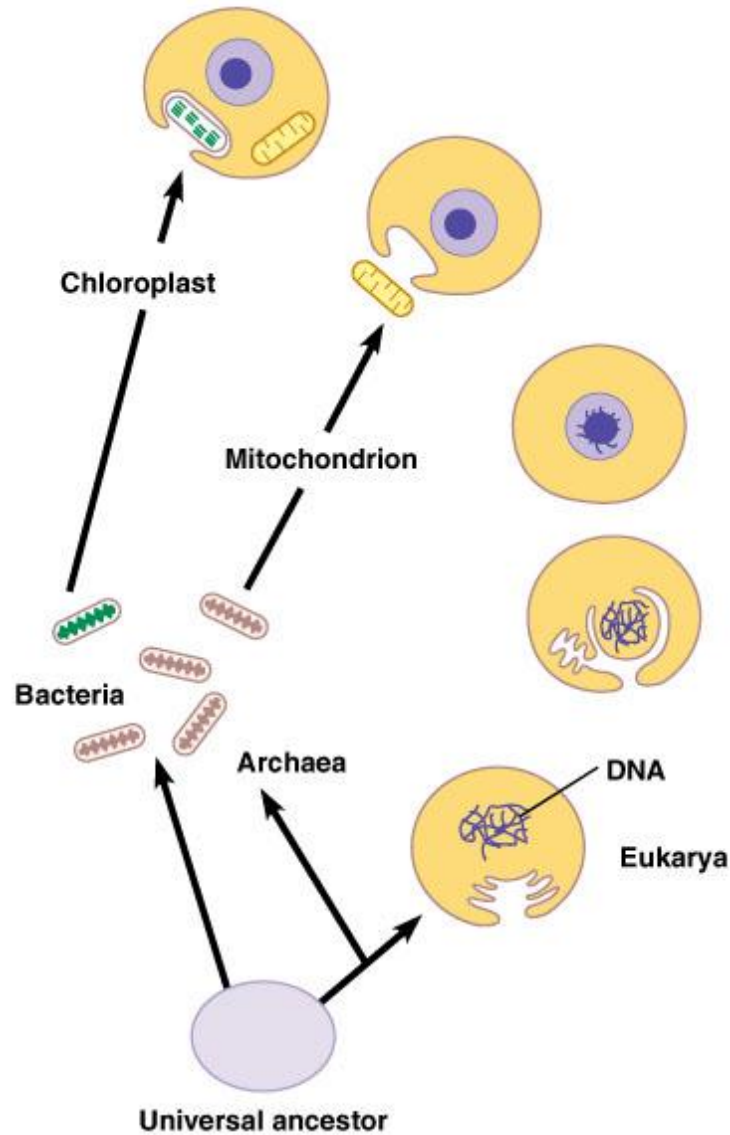
Mitochondrion



Chloroplast



Endosymbiotic Theory



THANK YOU