



Cell Structure and Function

Cells

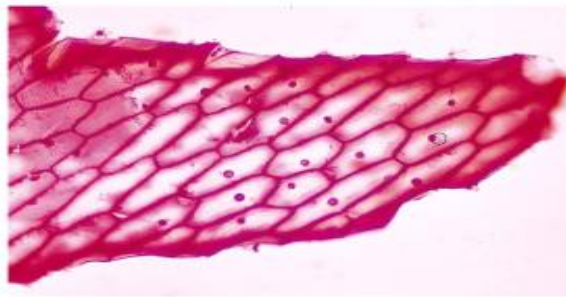
- The **cell** is the basic structural, functional, and biological unit of all known living organisms.
- Smallest living unit
- Most are microscopic





Discovery of Cells

- Robert Hooke (mid-1600s)
 - Observed sliver of cork
 - Saw “row of empty boxes”
 - Coined the term cell



Cell theory

- (1839)Theodor Schwann & Matthias Schleiden
“ all living things are made of cells”
- (50 yrs. later) Rudolf Virchow
“all cells come from cells”

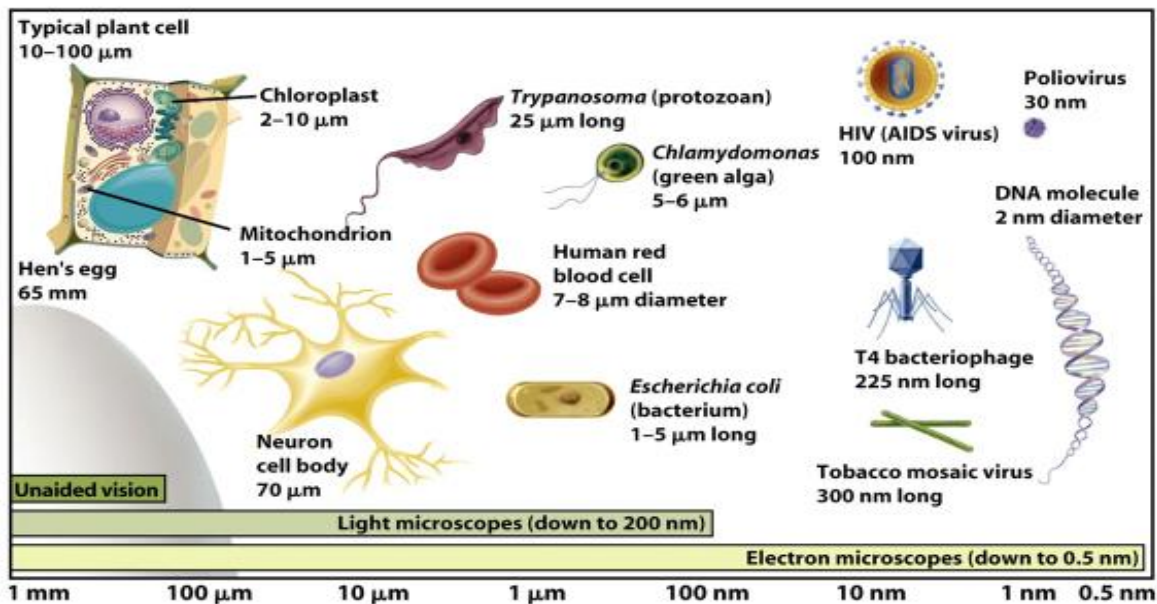




Principles of Cell Theory

- All living things are made of cells
- Smallest living unit of structure and function of all organisms is the cell
- All cells arise from preexisting cells (this principle discarded the idea of spontaneous generation)

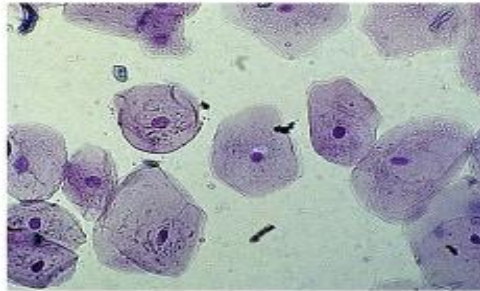
Cell Size





Characteristics of All Cells

- A surrounding membrane
- Protoplasm – cell contents in thick fluid
- Organelles – structures for cell function
- Control center with DNA



Cell Types

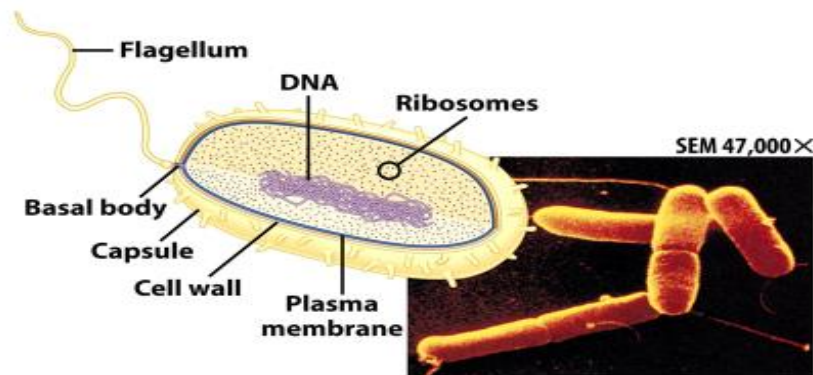
- Prokaryotic
- Eukaryotic





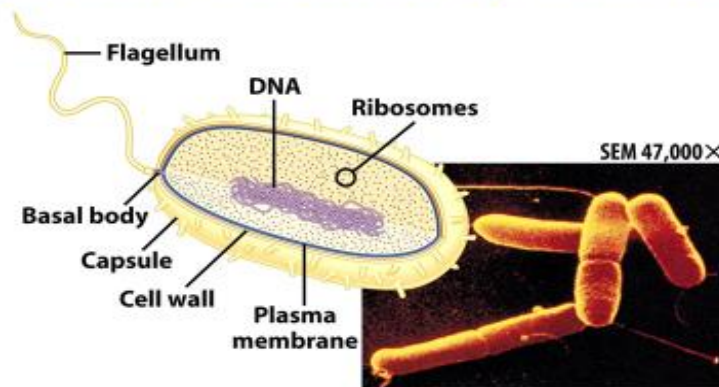
Prokaryotic Cells

- First cell type on earth
- Cell type of Bacteria and Archaea



Prokaryotic Cells

- No membrane bound nucleus
- Nucleoid = region of DNA concentration
- Organelles not bound by membranes





Eukaryotic Cells

- Nucleus bound by membrane
- Include fungi, protists, plant, and animal cells
- Possess many organelles



Protozoan

Representative Animal Cell

