Ch 6.2

**Prokaryotic Cells** are the cells of *Bacteria* and *Archaea*.

**Eukaryotic Cells** are the cells of *Animals*, *Protists*, *Fungi*, and *Plants*.

* Note: Protist is an informal term referring to a diverse group of unicellular eukaryotes.

*Plasma Membrane* = Cell Membrane

**Cytosol** is the jellylike substance found in all cells in which subcellular components are suspended.

Prokaryotic vs. Eukaryotic

Table

Description automatically generated with low confidence

**Cytoplasm** is name of the interior of either type of cell.

* Note: In **Eukaryotic** cells this is **only** the case in the area between the *nucleus* and the cell membrane.
* Note 2: Also, in Eukaryotic cell *Cytoplasm* suspended in *Cytosol* are **Organelles** which have specialized form and function.
  + **Organelles** are absent in almost all *Prokaryotic Cells*.

Size Comparison

* Mycoplasmas (Smallest known cells): 0.1 –1μm
* Typical Bacteria: 1 – 5 μm
* Eukaryotic Cells: 10 – 100 μm

Square-Cube Law: When an object undergoes a proportional increase in size, its new surface area is proportional to the square of the multiplier and its new volume is proportional to the cube of the multiplier.

Diagram

Description automatically generatedA1 {\displaystyle A\_{1}}AA is the original surface area and {\displaystyle A\_{2}}AA2 is the new surface area.

Diagram

Description automatically generatedV1 is the original volume, V2 is the new volume, 1 is the old length and 2 is the new one