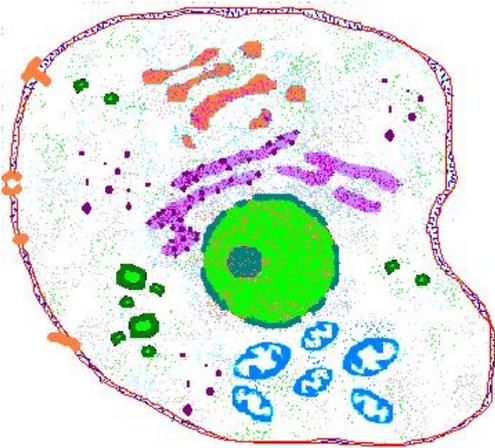


Cell Difference

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The Cell



The cell is the structural and functional basic unit of life. [Robert Hooke](#) discovered cells. It is often referred to as the building block and smallest unit of life. In Latin 'cellula' means *a small room*. Humans have about 100 trillion cells; a typical cell size is 10 μ m and a typical cell mass is 1 [nanogram](#).

Background of cell

Robert Hooke, in 1665, observed under a microscope honeycomb like structures in cork and applied the term "cell" (L. cella; small room).

Robert Brown, in 1831, observed a peculiar structure and named it "nucleus."

Dujardin, in 1835, termed the jelly-like material inside the cell as "sarcode."

Purkinje, in 1840, replaced the term "sarcode" with "[protoplasm](#)," which is now used universally.

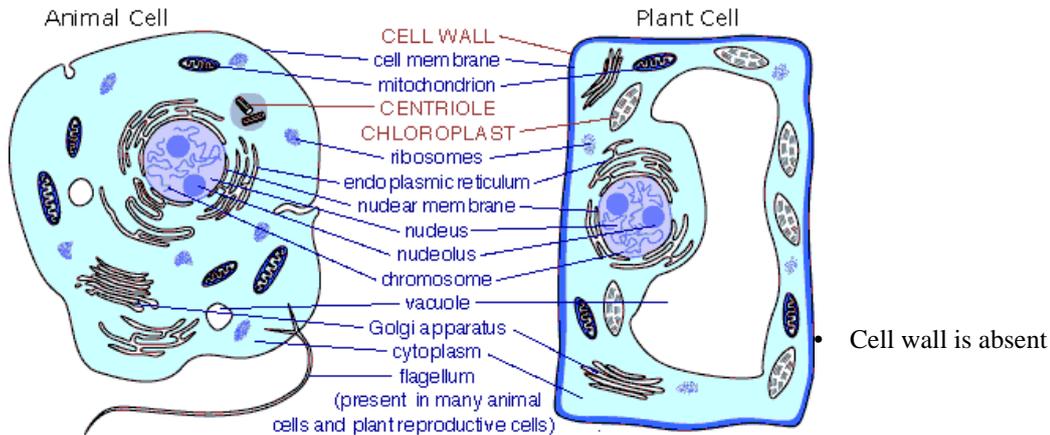
M. J. Schleiden and T. Schwann, in 1839, proposed the [Cell Theory](#).

Plant Cell:

- Cellulose cell wall surrounds the cell membrane

- Plastids are present especially in a green pigment called [chlorophyll](#)
- Large vacuoles containing cell sap are present in plant cell
- Most plants do not exhibit movement of locomotion
- Keep growing throughout their life and are localized in the apical meristem
- Organs and nervous system are absent

Animal Cell:



- Chlorophyll is absent
- [Vacuoles](#) are usually absent
- Most animals exhibit movement of locomotion
- Growth stops after maturation but body cells are replaced periodically. Growth is uniform and proportionate
- Cannot make their food. They depend directly or indirectly on plants for their food
- Well-developed nervous system

Similarities and Dissimilarities of Prokaryotic and Eukaryotic cell:

Similarities:

1. They both have DNA as their [genetic material](#).
2. They are both membrane bound.
3. They both have [ribosomes](#).
4. They have similar basic metabolism.
5. They are both amazingly diverse in forms.

Dissimilarities:

1. Eukaryotes have a nucleus, while prokaryotes do not.
2. Eukaryotes have membrane-bound organelles, while prokaryotes do not.
3. Eukaryotic cells are, on average, ten times the size of prokaryotic cells.
4. The DNA of eukaryotes is much more complex and therefore much more extensive than the DNA of prokaryotes.
5. The DNA of prokaryotes floats freely around the cell; the DNA of eukaryotes is held within its nucleus and associated with histones (proteins).
6. Eukaryotes undergo [mitosis](#); prokaryotes divide by binary fission (simple cell division).

Want to know more about Cells? [Click here](#) to schedule a live help with an eTutor!

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Reference Links:

- http://en.wikipedia.org/wiki/Cell_%28biology%29
- http://en.wikipedia.org/wiki/Plant_cell
- <http://en.wikipedia.org/wiki/Prokaryote>
- <http://en.wikipedia.org/wiki/Eukaryote>
- <http://en.wikipedia.org/wiki/Organelle>
- http://www.youtube.com/watch?v=MWz4ptP_QE

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