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Cell and Cell Theory

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What is Cell?

The cell is the functional basic unit of life. Robert Hooke discovered the cell and is the functional unit of all living organisms . Cell is the smallest unit and called as the building block of life. Bacteria are unicellular with a single cell. Other organisms are multi cellular. Humans have about 100 trillion cells; a typical cell size is 10 µm and a typical cell mass is 1 nanogram. The unfertilized ostrich egg cells are the largest cells with 3.3 pounds weight.

1835-Jan Evangelista Purkyn? found small "granules" in a plant tissue through a microscope. 1839 Matthias Jakob Schleiden and Theodor Schwann developed theCell theory. According to it

• All organisms are composed of one or more cells

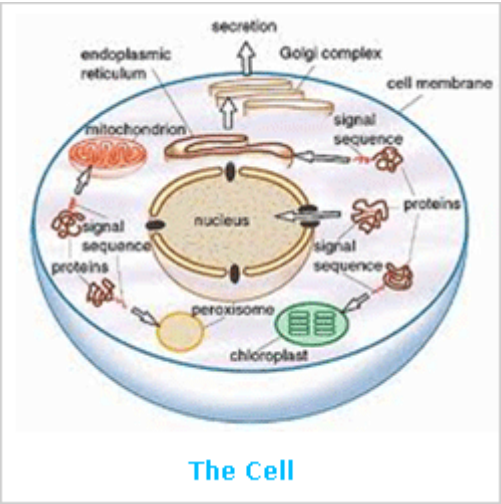
• All cells arise from pre-existing cells

• Vital functions of an organism occur within cells

• All cells contain the hereditary information necessary for regulating cell functions and for transmitting information to the next generation of cells.

What does “Cell” mean?

The word cell means ‘a small room’. It was coined byRobert Hooke when he compared the cork cells and saw through a microscope. He published book in 1665 and explained about his discovery.



The Cell

Discovery of Cell

All living things are composed of cells and cells are in turn composed of molecules which are made up of atoms.

• Crucial elements that make up living things are Carbon (C), Hydrogen (H), Oxygen (O), Nitrogen (N), Sulphur (S), Iodine (I), Phosphorus (P),Calcium (Ca) and Iron (Fe).

• Elements form molecules such as fatty acids, amino acids, carbohydrates, by bonded together. Smaller molecules bonds with each other and form the larger macromolecules such as proteins, polysaccharides

• In 1600's, Antonie van Leeuwenhoek observed "many very small animalcules, the motions of which were very pleasing to behold.

• In 1665, Robert Hooke turned amicroscope to thinly sliced cork from a mature tree and observed tiny compartments. He named it as 'Cell' Robert Hooke



Robert Hooke

• In 1820, Robert Brown found 'an opaque spot' in cells which he named as nucleus.

• By 1839 Schwann & Schleiden found that ' tissues are composed of cells'

• In 1858, Rudolph Virchow states "Every animal appears as a sum of vital units each of which bears in itself the complete characteristics of life."

Definition of Cell

Cell is the "Basic and Fundamental Unit of Life."

The Cell Theory

1. All living things are made of cells.

2. Cells only arise from pre-existing cells by division.

3. Cells are made of similar compounds with similar characteristics and biochemistry.

What is the difference between a cell and the tissue?

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Reference Links

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- http://en.wikipedia.org/wiki/Cell_(biology)
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