Cell Division

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What is Cell Division?

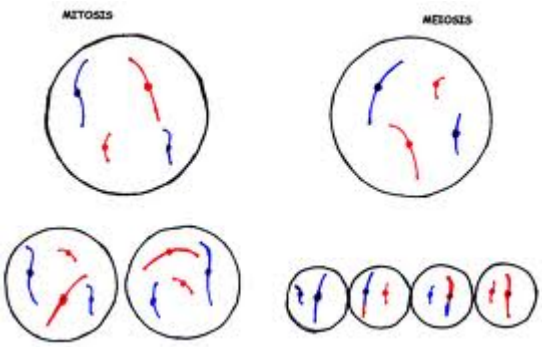
Two types of cell divisions are there. They are the Mitosis & the Meiosis.

Mitosis

A parent cell divides into two or more daughter cells are called as cell division which is a small segment of a cell cycle. In eukaryotes it is known as mitosis, and provides the capability of further division of the daughter cells. This type of cell division in prokaryotes is called as binary fission.

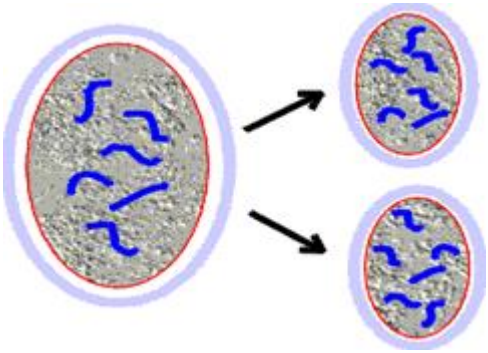
Meiosis

This is present only in eukaryotes. In this process the cell is permanently transformed into a gamete and it cannot divide again until fertilization. It undergoesDNA replication before the split of parent cell.



Ameoba the simple unicellular organisms has one cell division which is equivalent to reproduction. Because of this a new organism would be created. Mitotic cell division can create off spring from multi cellular organisms on a larger scale. For example plants can grow from small stem cuttings. Also it enables a sexually reproducing organisms to develop from theone-celled zygote , which itself was produced by cell division from gametes. Cell division allows for continuous construction and repair of the organism after the growth. A human's body may have about 10,000 trillion cell divisions in their lifetime.

To maintain the cells original or parental genome is its primary function. The genetic information stored in chromosomes must be replicated before the cell division. Theduplicated genome separated cleanly between cells. The genomic information would be consistent between "generations".

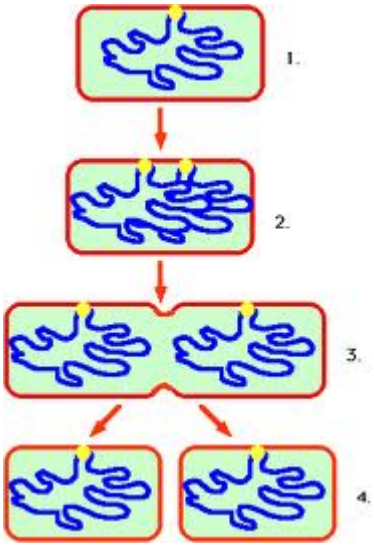


Cell division-BINARY FISSION

Binary fission is the form of asexual reproduction and this cell division occurs in all prokaryotes, some protozoa, and some organelles within eukaryotic organisms. The two parts of cells would be the resultant of this process and it has the ability to grow to the size of the parental or original cell size.

Binary fission cannot be divided into 4 phases like Mitosis. They have no nucleus and no centromeres.

Process of Binary Fission



DNA replication is the first step of Binary fission. DNA replication starts from an ori (origin of replication), which opens up into a replication bubble. The replication bubble separates the DNA double helix. Each helix acts as a template for daughter strand synthesis by semi conservative replication, until the entire DNA is duplicated. After this replication process the cell starts its growth.

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Reference Links:

- http://www.youtube.com/watch?v=3cD3U2pgb5w
- http://en.wikipedia.org/wiki/Vegetative_reproduction
- http://en.wikipedia.org/wiki/Fission_(biology)
- http://en.wikipedia.org/wiki/Cell_division

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