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DNA Replication and The Cell Cycle

Cell Cycle

Cell cycle is events that take place before the cell is divided into two cells, the start point of cell division is interphase in this stage the side of the cell is getting bigger as the cell is synthesizing RNA and producing amino acids, interphase is divided into four steps; first one is Gap 0 (G0) this step is between the cell cycle and the cell division. After that the cell is going to the second step Gap 1 (G1) in this step the cell is increases in size, synthesis RNA and producing proteins, in adding all the molecules in the cell is getting ready to the next step for the DNA synthesis.

Consequently, phases where the DNA replication will appear, each strand of the DNA replicates daughter strand. During the time for DNA replication and mitosis the cell is growing more in size and producing more proteins this step is called Gap 2 (G2). Finally the last step in the cell cycle is cell mitosis, in this time the cell stops producing proteins, then it will divide into 2 similar cells. All of the above steps are occurring in between 2 to 3 hours; in addition S phase is for synthesis and is very important step (Sullivan, 1994).

Eukaryotic chromosome structure

DNA is highly length of the nucleus, the shortest human chromosome contains 4.6×10^7 bp of DNA about 10 times the genome size of E.coli (McClean , 1997) . Chromosomes contain the long strands of DNA that carries information. They are the unit of DNA replication in living cells. Typical prokaryotic cell contains a single circular chromosome (McClean , 1997) . Much larger genome has linear chromosomes the linear of eukaryotic chromosome help to keep the genetic organized and helps to passing the exact amount of DNA to each daughter cell during mitosis. In the cell division eukaryotic chromosome compresses to four structures, firstly centromere is the primary point of the sister chromosome, it is the site of attachment to sister chromatids and it gives the chromosome a specific function.