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Molecular basis of inheritance

Central Dogma

The central dogma was proposed by Crick. The central dogma states that the DNA is converted into RNA and the RNA is converted into proteins.

In retroviruses, the flow of information is opposite, i.e., RNA to DNA to mRNA to Protein.

DNA Packaging

The negatively charged DNA is packaged by surrounding the positively charged histone octamer. A structure called nucleosome is formed. The DNA is packed in chromatin of eukaryotes.

DNA Replication

DNA is self-replicative. It occurs in the S-phase of the life cycle. It takes only a few minutes in prokaryotes but hours in eukaryotes. DNA undergoes semi-conservative replication, i.e., two strands of DNA are formed. One strand is the same as one of the strands while the other is complementary to the parent strand. The replication occurs in 5'-3' direction.

Also Read: [DNA Replication](#)

RNA

Ribonucleic acid or RNA is a vital molecule with a long chain of nucleotides. It is the first genetic material. A nucleotide chain comprises a phosphate, a ribose sugar, and nitrogenous base. RNA acts as a catalyst and as genetic material. There are two types of RNA, that is genetic and non-genetic.