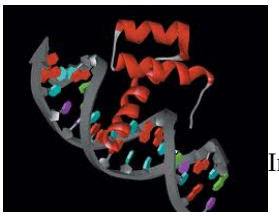
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# DNA Biological Functions

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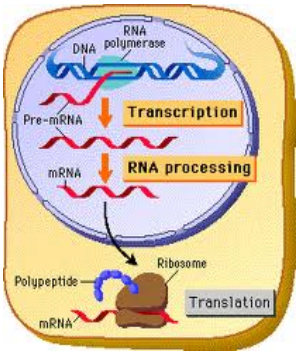
# Biological functions of DNA



In eukaryotes, the DNA occurs as linear chromosomes. And in prokaryotes the DNA occurs as circular chromosomes. A genome is the set of chromosomes in a cell. Approximately 3 billion base pairs of DNA are arranged into 46 chromosomes in thehuman genome.

Genes are the segments of the DNA and the information carried by DNA is held in thesequence of pieces of genes. The genetic informationtransmission in genes is done by the complementary base pairing.

**Transcription:**



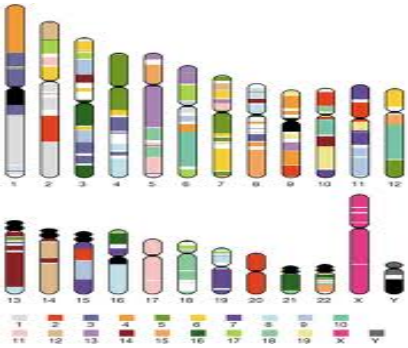

During the transcription process, the cell uses the genomic information. The sequence of DNA is copied into a complementary RNA sequence. It is done by the attraction maintained between the DNA and the correct RNA nucleotides.

## Translation & Replication:

Translation is a process of matching RNA sequences with aprotein sequence. But the cell copies its genetic information by DNA replication.

# Genes and Genomes

DNA condensation is a process in which the Genomic DNA is tightly and orderly packed. DNA is a long polynucleotide and it must fit into the small cell. It is achieved by the condensation process.



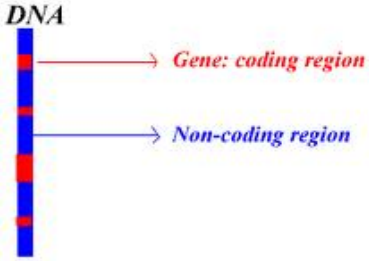
In eukaryotes, DNA present inside the cell nucleus. Small amounts of DNA is in mitochondria and chloroplasts also.

Nucleiod is the irregular structure of the DNA that is found in the cytoplasm of prokaryotes. Genes have the genetic information in a genome. That's why it is known as a heredity unit which influences the characteristics of organisms. The complete set of genetic information in an organism is called itsgenotype.

Genome sequence encodes protein. A small amount of gene is also matters in many species, Humans have about 1.5% of protein-coding exons, and over 50% of human DNA consisting of non-coding repetitive sequences.

# C Value Enigma

Eukaryotic long DNA with many non-coding repetitive sequences makes a difference in genome size. It is the C value and it is still a wonder to people.




DNA sequences not coding any protein may encode functionalnon-coding RNA molecules. These RNA molecules are involved in theregulation of gene expression.

The non-coding sequences are very important for the chromosome structure. The stability of the chromosome is influenced by the few genes present in thetelomeres andcentromeres.

A vast number of non-coding genes are called aspseudogenes in humans. These pseudogenes are the copies of genes nut became non-functional because of mutation.

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## Reference Links:


- http://en.wikipedia.org/wiki/Gene
- http://en.wikipedia.org/wiki/C-value_enigma
- http://en.wikipedia.org/wiki/C-value
- http://www.yourgenome.org/dgg/


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