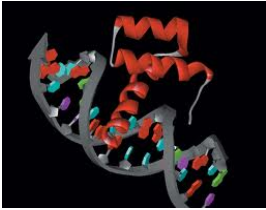


DNA Biological Functions

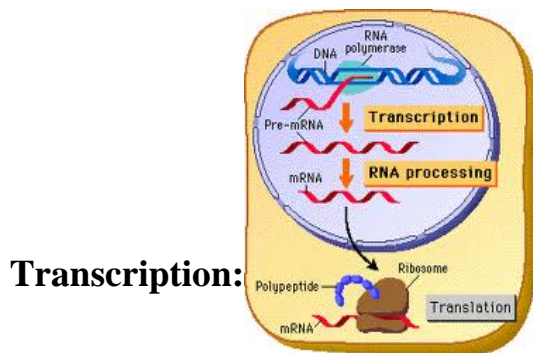
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Biological functions of DNA



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 the [human genome](#).

[Genes](#) are the segments of the DNA and the information carried by DNA is held in the [sequence](#) of pieces of genes. The genetic information [transmission](#) in genes is done by the complementary base pairing.



Transcription:

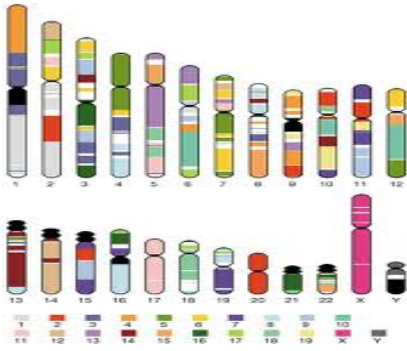
During the transcription process, the cell uses the genomic information. The sequence of DNA is copied into a complementary RNA sequence. It is done by the attraction maintained between the DNA and the correct RNA nucleotides.

Translation & Replication:

Translation is a process of matching RNA sequences with a [protein 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.



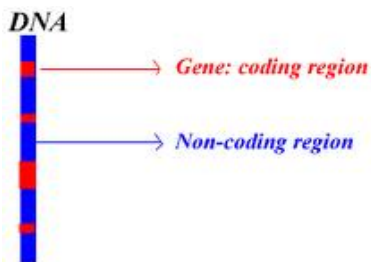
In eukaryotes, DNA present inside the [cell nucleus](#). Small amounts of DNA is in [mitochondria](#) and [chloroplasts](#) also.

Nucleoid 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 its [genotype](#).

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 functional [non-coding RNA](#) molecules. These RNA molecules are involved in the [regulation 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 the [telomeres](#) and [centromeres](#).

A vast number of non-coding genes are called as [pseudogenes](#) in humans. These pseudogenes are the copies of genes but became non-functional because of mutation.

Want to know more about DNA functions? [Click here](#) to schedule live online session with e Tutor!

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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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