The Chromosome

The chromosome is a structural unit that consists of a molecule of DNA associated with proteins. Eukaryote chromosomes condense during mitosis and meiosis and form structures visible through a microscope. They are made of DNA (deoxyribonucleic acid), RNA (ribonucleic acid), and proteins. The majority of the proteins are histones, small positively charged molecules. Chromosomes carry the genes, the functional structures responsible for the characteristics of each individual.

Karyotype

The ordering and systematic classification of the chromosomes by pairs, size, and position of the centromeres. The chromosomes that are seen in a karyotype are found in the metaphase of mitosis. Each one of them consists of two sister chromatids united by their centromeres.

Carrier of Genes

In the DNA, certain segments of the molecule are called genes. These segments bear the genetic information that will determine the characteristics of an individual or will permit the synthesis of a certain protein. The information necessary for generating the entire organism is found in each cell, but only the part of the information necessary for reproducing this specific type of cell is activated. The reading and transmission of the information for use outside the nucleus is performed by messenger RNA.

Prokaryote Cell

Prokaryotes do not have a cellular nucleus, so the DNA is found in the cytoplasm. The size of the DNA differs according to species. Prokaryotes are almost all unicellular organisms belonging to the domains of the archaea and bacteria.