

DNA

[Deoxyribonucleic acid](#) is a [molecule](#) that encodes the [genome](#) used in the development and functioning of all known living [organisms](#) and many [viruses](#). DNA is a [nucleic acid](#); alongside [proteins](#) and [carbohydrates](#), [nucleic acids](#) compose the three major macromolecules essential for all known forms of life.



Most DNA molecules consist of two biopolymer strands coiled around each other to form a double helix. The two DNA strands are known as [polynucleotides](#) since they are composed of simpler units called [nucleotides](#). Each nucleotide is composed of a nitrogen-containing nucleobase—either [guanine](#) (G), [adenine](#) (A), [thymine](#) (T), or [cytosine](#) (C)—as well as a monosaccharide sugar called deoxyribose and a phosphate group. The nucleotides are joined to one another in a chain by covalent bonds between the sugar of one nucleotide and the phosphate of the next, resulting in an alternating sugar-[phosphate](#) backbone. According to base pairing rules (A with T and C with G), hydrogen bonds bind the nitrogenous bases of the two separate polynucleotide strands to make double-stranded DNA.

Genomic DNA

[Genomic DNA](#)

Recombinant DNA

[Recombinant DNA](#).

DNA damage

[DNA damage](#).

DNA repair

[DNA repair](#).

DNA diagnostics

DNA diagnostics

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