Nucleic Acids

Nucleic acids are polymeric macromolecules, or large biological molecules, essential for all known forms of life. Nucleic acids, which include DNA (deoxyribonucleic acid) and RNA (ribonucleic acid), are made from monomers known as nucleotides.

DNA Replication

Helicase and Unzipping

> Their main function is to unpackage an organism's genes.

Leading Strand

> Strand of DNA being replicated continuously.

DNA Polymerase

> The DNA polymerases are enzymes that create DNA molecules by assembling nucleotides, the building blocks of DNA.

RNA Primase

> DNA primase is an enzyme involved in the replication of DNA.

Lagging Strand

> The lagging strand is the strand of nascent DNA whose direction of synthesis is opposite to the direction of the growing replication fork. Because of its orientation, replication of the lagging strand is more complicated than that of the leading strand.

Okazaki Fragments

> Okazaki fragments are short, newly synthesized DNA fragments that are formed on the lagging template strand during DNA replication.

DNA Ligase

> In molecular biology, DNA ligase is a specific type of enzyme, a ligase, (EC 6.5.1.1) that facilitates the joining of DNA strands together by catalyzing the formation of a phosphodiester bond.

DNA

Polymers

> Each one of is made up of small replicating units.

Three Ingredients

> 5- Carbon Sugar Molecules, A Phosphate Group, One of Four Nitrogen Bases

Base Pairs

> Base pairs, which form between specific nucleobases (also termed nitrogenous bases), are the building blocks of the DNA double helix and contribute to the folded structure of both DNA and RNA.

Base Sequences

> A nucleic acid sequence is a succession of letters that indicate the order of nucleotides within a DNA (using GACT) or RNA (GACU) molecule. By convention, sequences are usually presented from the 5' end to the 3' end.

RNA

Ribonucleic acid (RNA) is a polymeric molecule. It's implicated in a varied sort of biological roles in coding, decoding, regulation, and expression of genes.

Differences between RNA and DNA

1. RNA is a single stranded molecule, no double helix.
2. The Sugar in RNA is Ribose, with an extra Hydrogen Molecule.
3. Does not contain Thymine, it contains Uracil instead.

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