**Nucleic acid sequence**

**Nucleotides**

Nucleic acids consist of a chain of linked units called nucleotides. Each nucleotide consists of three subunits: a phosphate group and a sugar (ribose in the case of RNA, deoxyribose in DNA) make up the backbone of the nucleic acid strand, and attached to the sugar is one of a set of nucleobases.



**Biological significance**

In biological systems, nucleic acids (https://en.wikipedia.org/wiki/Nucleic\_acid) contain information which is used by a living cell to construct specific proteins. The sequence of nucleobases on a nucleic acid strand is translated by cell machinery into a sequence of amino acids making up a protein strand.

**- A** = adenine

**- C** = cytosine

**- G** = guanine

**- T** = thymine

Apart from adenine (A), cytosine (C), guanine (G), thymine (T) and uracil (U), DNA and RNA also contain bases that have been modified after the nucleic acid chain has been formed. In DNA, the most common modified base is 5-methylcytidine (m5C).

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| --- | --- | --- |
| Amino Acid | Codons | Compressed |
| Ala/A | GCT, GCC, GCA, GCG | GCN |
| Arg/R | CGT, CGC, CGA, CGG, AGA, AGG | CGN, MGR |