

RIBONUCLEIC ACID (RNA)



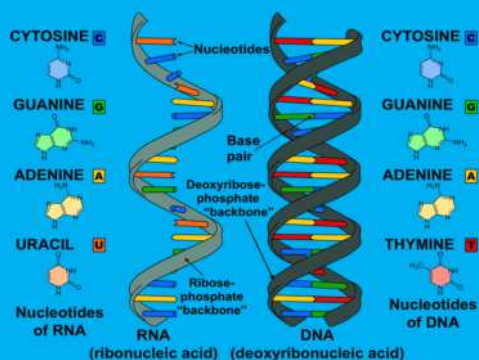
What is Ribonucleic Acid (RNA)

RNA is a compound of high molecular weight used in protein synthesis.

In some viruses, it serves as a carrier of genetic codes.

It comprises of ribose attached by phosphodiester bonds to form bands of different lengths.

The nitrogenous bases in RNA are adenine, guanine, cytosine, and uracil (Wang,., 2017)



RNA Structure

It is a single-stranded biopolymer.

The three-dimensional structure of RNA is critical to its stability and function.

RNAs can also form complexes with molecules known as ribonucleoproteins.

The RNA portion of at least one cellular RNP has been shown to act as a biological catalyst.



Types and Functions of RNA

Three types; messenger RNA (mRNA), transfer RNA (tRNA), and ribosomal RNA (rRNA)

They are involved in biochemical reactions, similar to enzymes.

Some have complex regulatory functions in cells

RNAs play important roles in both normal cellular processes and diseases.

In protein synthesis, mRNA carries genetic codes from the DNA in the nucleus to ribosomes.

The ribosome protein subunits are encoded by rRNA and are synthesized in the nucleolus. (Tomikawa, 2018).

Molecules of tRNA bring the specified amino acids to the ribosomes to be linked to form proteins,

The Future of RNA

Study of RNAs helps in the study of new diseases such as cancer.

The study of RNAs helps to identify genetic modification that can be carried out in development of treatments of some diseases.

RNA studies helps to study progression of disease, mostly cancers.

Increased understanding of RNA and its functions, combined with the continued development of sequencing technologies and efforts to screen RNA and RBPs as therapeutic targets, are likely to facilitate such discoveries (Yuan, ET AL., 2017).

References

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