

RNA

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Ribonucleic Acid

RNA is an important molecule consists of a long chain of [nucleotide](#) units. Each nucleotide is made up of nitrogenous base, [aribose](#) sugar, and [aphosphate](#).

RNA Vs DNA

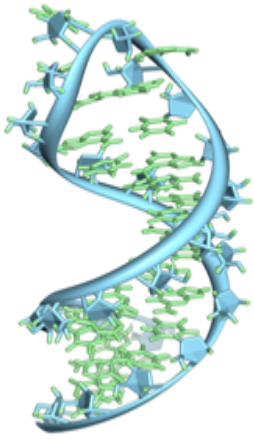
RNA is as like as a [DNA](#), but has few different structural details.

RNA:

- Is usually single-stranded
- RNA nucleotides contain ribose sugar.
- RNA has the base [uracil](#).
- Bases are A U G C
- RNA is [transcribed](#) from DNA
- RNA polymerases help in transcription process
- RNA is central to [protein synthesis](#).
- There are 3 types of RNA: mRNA, tRNA & rRNA.

DNA:

- Is usually double-stranded
- DNA contains [deoxyribose](#) (lacks one oxygen atom
- DNA has the base [Thymine](#)
- Bases are A T G C



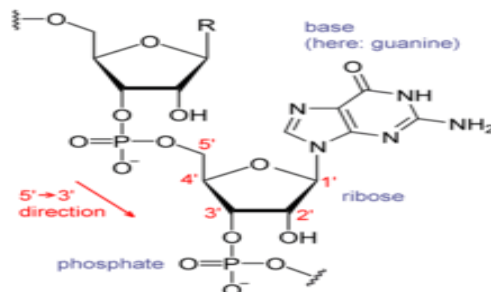
mRNA is a type of RNA ([messenger RNA](#)). Information from DNA will be carried to [ribosomes](#) through mRNA. RNAs involves with other roles of gene regulation, gene expression etc.

Lets summarize it briefly like below.

- Both are [nucleic acids](#), but differ in three main ways.
 1. Unlike double stranded DNA, RNA is a single-stranded molecule while DNA contains [deoxyribose](#), RNA contains [ribose](#)
 2. RNA is unstable or less stable when compared to DNA. WHY? Because it is more prone to [hydrolysis](#).
 3. The complementary base to [adenine](#) is not [thymine](#) like DNA, but it is [uracil](#). Uracil is the unmethylated form of Thymine.

Types of RNA include [mRNA](#), [tRNA](#), [rRNA](#), snRNAs and other non-coding RNAs. Non coding RNAs allow to fold and they binds and form a double stranded like structure.

Structure of RNA



- Each [nucleotide](#) in RNA has a [ribose](#) sugar
- Adenine and guanine are [purines](#)
- cytosine and uracil are [pyrimidines](#)
- A [phosphate](#) group is attached to the 3' position of one ribose and the 5' position of the next
- [Hydrogen bonds](#) formed between cytosine and guanine and between adenine and uracil and between guanine and uracil

Types of RNA

mRNA (Messenger RNA) - carries information from DNA of the structural gene to the ribosome.

tRNA (Transfer RNA) - carries amino acids to mRNA at the ribosome to assembly the protein being made

rRNA (Ribosomal RNA) - Important structural component of the ribosome where protein synthesis occurs.

Want to know more about RNA functions?[Click here](#) to schedule live online session with e Tutor!

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Reference Links:

- <http://en.wikipedia.org/wiki/RNA>
- http://www.diffen.com/difference/DNA_vs_RNA
- <http://www.elmhurst.edu/~chm/vchembook/583rnatypes.html>
- <http://www.youtube.com/watch?v=NJxobgkPEAo>

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