

Quick Review of DNA, mRNA and Protein synthesis(from Bac.I)

➤ Chemical composition of DNA (Deoxyribonucleic acid):

- DNA is a double stranded molecule of complementary nucleotide sequence.
- **Nucleotide** is the building chemical unit of DNA molecule, composed of 3 chemical elements:

1. **Phosphoric acid (P)**

2. **Deoxyribose sugar (S)** $C_5H_{10}O_4$

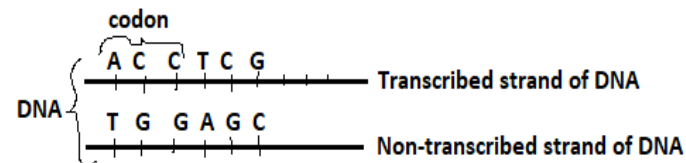
3. **Nitrogenous base** is one of 4 bases: - Adenine (A)
- Guanine (G)
- Cytosine (C)
- Thymine (T)

These bases are binding 2 by 2 in DNA molecule where

A binds with **T** and **G** binds with **C**.

Every genetic codon is composed of triplet of nucleotides and code for a specific amino acid.

The size of a segment of DNA is by the number of base pairs(bp).



➤ RNA (Ribonucleic acid): single stranded molecule composed of sequence of nucleotides.

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A nucleotide of RNA: composed of 3 chemical elements:

1. Phosphoric acid (P)

2. Ribose sugar (S) $C_5H_{10}O_5$

3. Nitrogenous base which is one of the 4 nitrogenous bases:- Adenine (A)
- Guanine (G)
- Cytosine(C)
- Uracil (U)

➤ Gene (fragment of DNA) by transcription and translation → a particular protein → phenotype

Ex. Gene of normal hemoglobin codes for Hemoglobin protein → phenotype (non -anemic person)