

Nucleic Acids → DNA + RNA

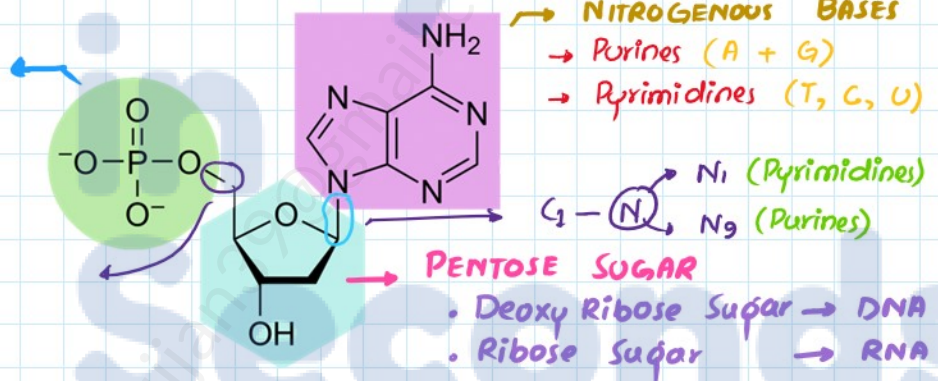
- **Polymers** of Nucleotides
 - **Linear & Unbranched**
 - F. Miescher (1869) → Pus cell (2n), Fish sperm cell (n)
 - 1920 → Nucleic Acid
- Nucleic Acids are present in all living things
- Virus (DNA/RNA) ↔ Man (DNA + RNA)**
- Free Form → Cytoplasm**
- Attached Form →**
- Chromatin** (DNA + Histone)
 - Ribosome** (RNA + Protein)

NUCLEOTIDE → (Nucleoside + Phosphate)

- **NUCLEOSIDE** (Pentose Sugar + N-Bases)

PHOSPHATE GROUP

Ester linkage



PHOSPHODIESTER LINKAGE → Dinucleotide (only 1)

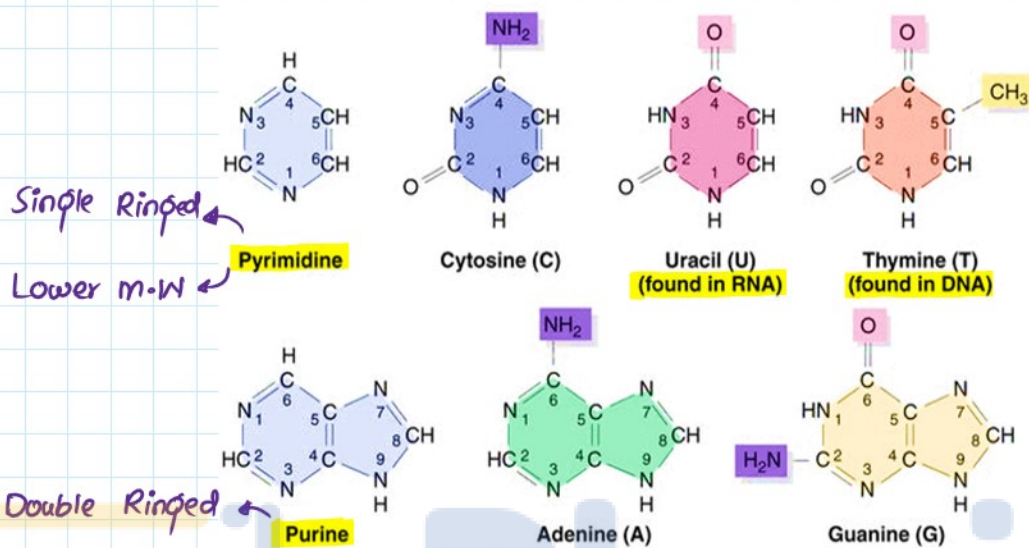
ESTER LINKAGE → (2 x 2) + 1

$$= (1 \times 2) + 1 = \textcircled{3} \text{ Ester linkage}$$

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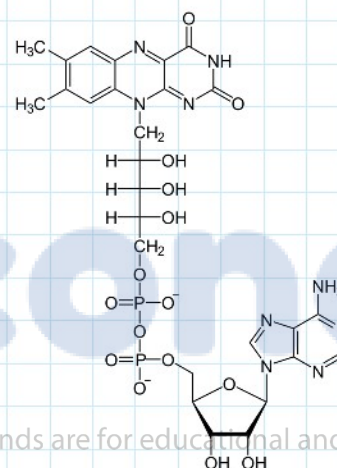
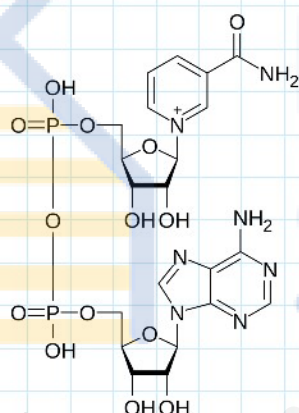


• Pyrimidines form
 C_1-N_1 (1→1)
glycosidic link.

• Purines form
 C_1-N_9 (1→9)
glycosidic link.

NAD = Nicotinamide Adenine
Dinucleotide
Niacin

FAD = Flavin Adenine
(Vitamin B₂) Dinucleotide

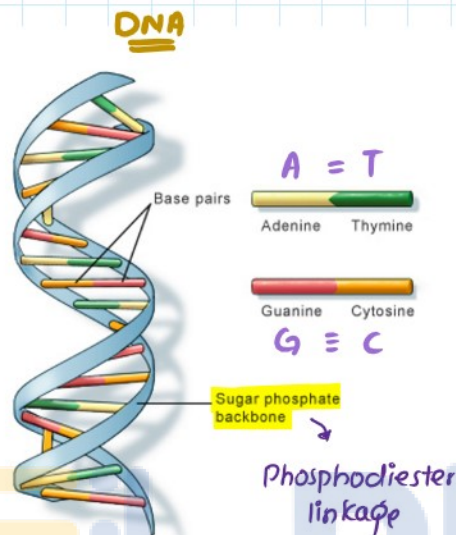


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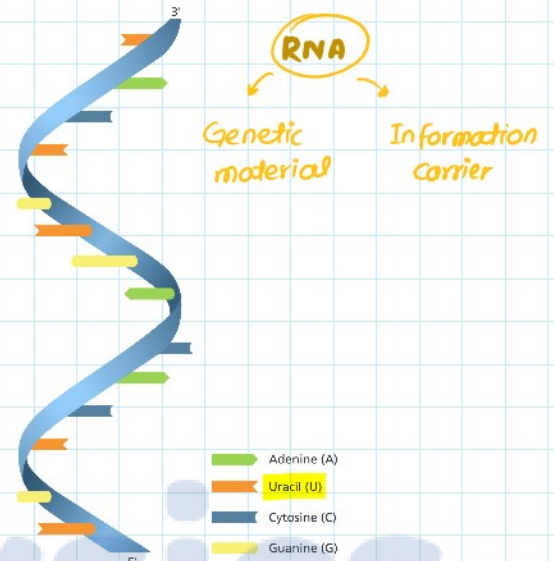
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RNA TYPES

All RNA formed by "Transcription"

mRNA

- Variable length
- 3-4%
- DNA → Ribosome
- Translation

- 3000 Nucleotides → mRNA
- 1000 Amino Acid → Protein

tRNA

- 75-90 Nucleotides
- 10-20%
- Carry Amino Acid at the site of translation

rRNA

- Largest RNA
- 80%
- Ribosome formation
- Amino Acid polymerization

→ Has Catalytic Activity

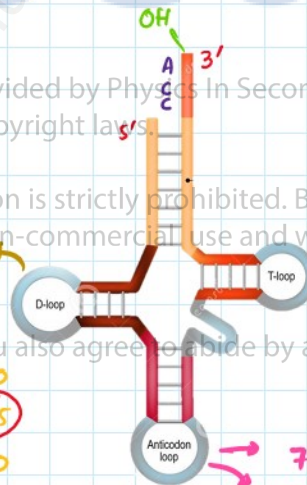
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Recognition of
Activation Enzyme

- tRNA
- identified → 60
 - Different → 45
 - A. Acid → 20



"CLOVER LEAF STRUCTURE"

Ribosomal Binding site

7 Nucleotide
Detect codon site