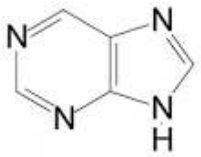
Nucleotides

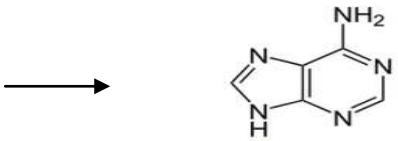
Nucleotides :- are the building blocks of nucleic acids. and composed of three sub unit molecules ,a nitrogenous base, a pentose sugar(5-carbon sugar) , and a phosphate group. Nucleotides also play a central role in metabolism.

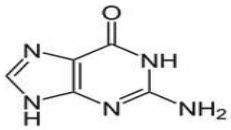
- Composition of Nucleotides

1. nitrogenous base (a purine or a pyrimidine)
2. pentose sugar (ribose or deoxyribose)
3. phosphate group (consisting of one to three phosphates)

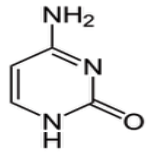
- purine bases include (Adenine and Guanine)
- pyrimidine bases include (Cytosine , Uracil , Thymine)

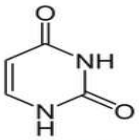


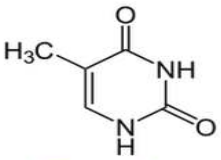






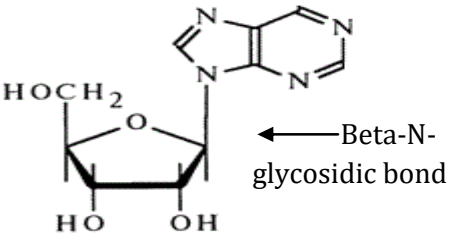




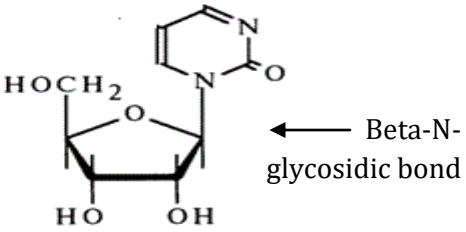


Nucleosides :- when the nitrogenous base combines with a pentose sugar by Beta-N-glycosidic bond without a phosphate group. a nucleoside is formed . Nucleosides named according to the nitrogenous base which included in the Nucleosides structure.

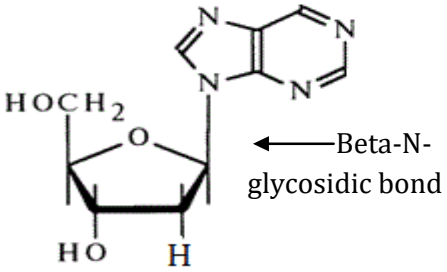
Nucleotides



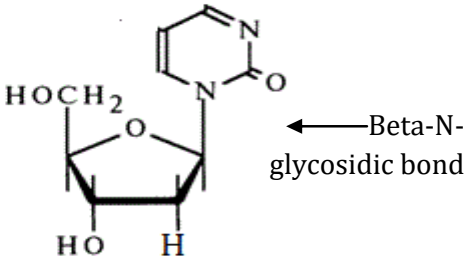
Purine nucleoside



Pyrimidine nucleoside



Purine deoxynucleoside



Pyrimidine deoxynucleoside

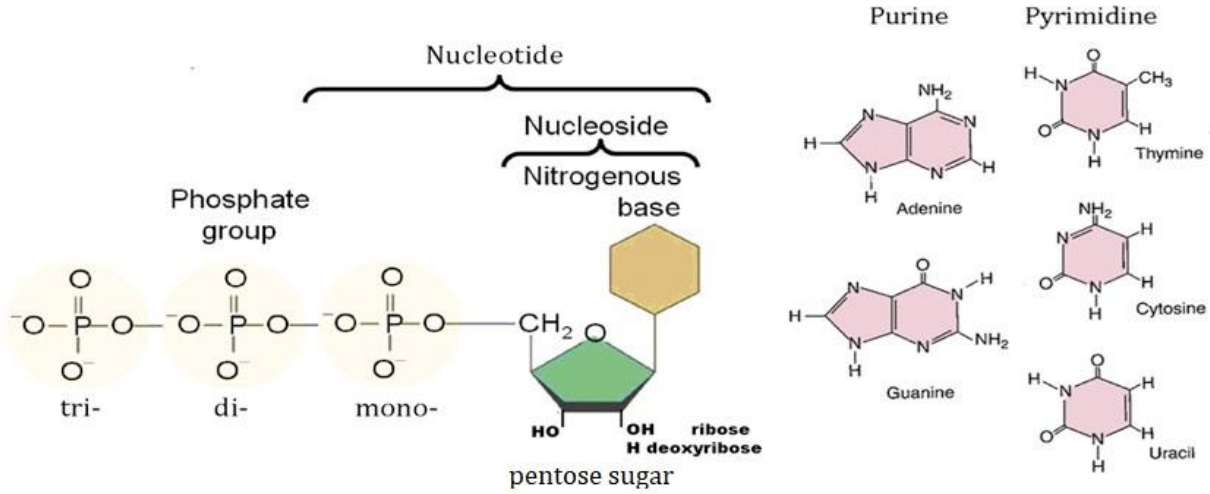
Adenine + ribose sugar → Adenosine
Guanine + ribose sugar → Guanosine
Uracil + ribose sugar → Uridine
Cytosine + ribose sugar → Cytidine

} RNA nucleoside

Adenine + deoxyribose sugar → deoxyadenosine
Guanine + deoxyribose sugar → deoxyguanosine
Cytosine + deoxyribose sugar → deoxycytidine
Thymine + deoxyribose sugar → deoxythymidine

} DNA nucleoside

Nucleotides



For example the structure of adenosine triphosphate (ATP).

