

NUCLEIC ACID STRUCTURE

A. EXAMPLES OF NUCLEIC ACIDS (precisely where in the cell is each found?):

1. RNA (Ribonucleic acid): _____
2. DNA (Deoxyribonucleic acid): _____

B. NUCLEOTIDES: The main structural units or "building blocks" of the nucleic acids.

1. SUB-STRUCTURE OF NUCLEOTIDES (SUB-UNITS): Each nucleotide is composed of 3 sub-units: a phosphate group, one of two pentose sugars, and one of 5 bases, all shown here in simplified diagrams:

a. Phosphate Group (or Phosphoric Acid):

b. Pentose Sugars:
1) Ribose (in RNA):

2) Deoxyribose (in DNA):

c. Bases ("Nitrogenous Bases"):

1) Pyrimidines:

a) Cytosine:

b) Thymine:

c) Uracil:

2) Purines:

a) Adenine:

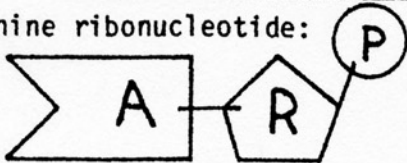
b) Guanine:

2. EXAMPLES OF NUCLEOTIDES (each one shown composed of its 3 sub-units):

a. Ribonucleotides (as in RNA)

b. Deoxyribonucleotides (as in DNA)

1) Adenine ribonucleotide:



1) Adenine deoxyribonucleotide:

2) Guanine ribonucleotide:

2) Guanine deoxyribonucleotide:

3) Cytosine ribonucleotide:

3) Cytosine deoxyribonucleotide:

4) Uracil ribonucleotide:

4) Thymine deoxyribonucleotide:

5) Adenosine triphosphate (ATP - remember this? Notice it's basically a nucleotide!)