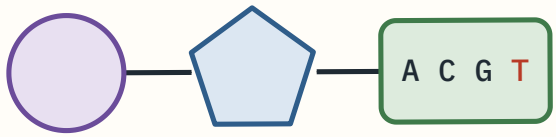
DNA and RNA Nucleotides: Structure Compared

Every nucleotide: pentose, phosphate group, organic base.

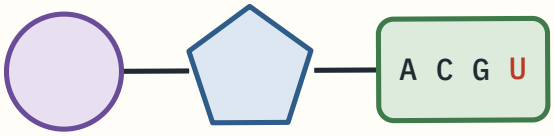
DNA nucleotide



phosphate — deoxyribose — organic base

holds genetic information

RNA nucleotide



phosphate — ribose — organic base

transfers it from DNA to ribosomes

Key terms

nucleotide	the monomer of DNA and RNA: a pentose, a phosphate group and a nitrogen-containing organic base.
pentose	a sugar with five carbon atoms.
deoxyribose	the pentose in DNA nucleotides.
ribose	the pentose in RNA nucleotides.
organic base	nitrogen-containing; DNA has A, C, G, T, RNA has A, C, G, U.
ribosome	where RNA transfers genetic information from DNA; formed from RNA and proteins.

I can...

- [ ] DNA and RNA are information-carrying molecules: DNA holds genetic information, RNA transfers it from DNA to ribosomes
- [ ] Ribosomes are formed from RNA and proteins
- [ ] Both are polymers of nucleotides: pentose, organic base, phosphate
- [ ] DNA nucleotide: deoxyribose, phosphate, A C G T
- [ ] RNA nucleotide: ribose, phosphate, A C G U

EXAM TRAP

Never say DNA has uracil or RNA has thymine, and never call the pentose in DNA ribose (it is deoxyribose). No amino acid in a nucleotide.

4 marks: what earns them

1. A nucleotide is made of a pentose (sugar), a phosphate group and a nitrogen-containing organic base
   Not: 'amino acid' as a nucleotide component
2. DNA has deoxyribose; RNA has ribose
   Not: DNA pentose given as ribose; deoxyribose given for RNA
3. DNA bases are adenine, cytosine, guanine and thymine; RNA has uracil instead of thymine
   Not: thymine in RNA; uracil in DNA
4. Both roles needed for the mark: DNA holds genetic information; RNA transfers genetic information from DNA to ribosomes
   Not: 'DNA makes protein'; 'RNA holds genetic information' with no transfer

Remember

DNA: deoxyribose and thymine.
RNA: ribose and uracil.
DNA holds it, RNA transfers it.

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