

As you have seen, Edwin Chargaff discovered that the nucleotide composition of DNA varies from one species to another. You can use Chargaff's rule to make deductions about the structure of a particular DNA molecule.

Procedure

- 1.) Imagine that you are analyzing a DNA sample from the liver tissue of a newly discovered species of mouse. Use the information in the table below to complete the nucleotide composition of your sample.

Nucleotide	Presence in DNA sample (%)
Adenine	30
Cytosine	
Guanine	
Thymine	

- 2.) Draw a linear stretch of a double-stranded DNA molecule 20 base pairs long, with a nucleotide composition that corresponds (as closely as you can) to the nucleotide composition of your sample above. Use solid lines to show chemical bonds and dotted lines to show hydrogen bonds.

Analysis

- 1.) What you would expect to find if you compared the nucleotide composition of your DNA sample with the nucleotide composition of a second DNA sample from the muscle tissue of the same mouse.

- 2.) Would the nucleotide composition of your original DNA sample be different from the nucleotide composition of a tissue sample from the liver of a deer? Why?
