

Introduction to Medical Genetics: Major differences between Eukaryotic DNA/RNA

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At the end of this resource, you should be able to

- Describe the differences between Eukaryotic DNA and RNA



Topics

- Location of nucleic acid
- Functional differences
- Physical differences



Eukaryotic DNA/RNA: Location

RNA

- Nucleus
- Mitochondria
- RER
- Cytoplasm

DNA

- Nucleolus
- Nucleus
- Mitochondria



Eukaryotic DNA/RNA: Functional differences

DNA

- Molecule of heredity for most organism
- Holds genes

RNA

- Molecule of heredity for some RNA viruses
- Substrate for Ribosome
- Intermediate molecule



Eukaryotic DNA/RNA: Physical differences

DNA

- Double stranded
- Sugar – Deoxyribose
- Base – Thymine
- Conformation – A, B and Z
- Contains intron

RNA

- Single stranded
- Sugar – Ribose
- Base – Uracil
- mRNA, tRNA, rRNA and ncRNA
- No intron except pre mRNA



Summary

- DNA/RNA – the presence of these molecules distinguishes them
- DNA/RNA – the function of these molecules show the differences
- DNA/RNA – the physical properties of these molecules show the differences

