

# Role of DNA & RNA in Protein Synthesis

## Introduction:

DNA and RNA are nucleic acids found in the cells of living organisms. DNA is a two-stranded molecule consisting of a deoxyribose sugar, while RNA is a single-stranded molecule with ribose as its sugar component. There are three primary types of RNA: messenger RNA (mRNA), ribosomal RNA (rRNA) and transfer RNA (tRNA). Another kind of RNA is small nuclear RNA, or snRNA, which is involved in altering an RNA transcript.

Proteins are one of the vital biomolecules of life. These compounds perform a variety of essential processes to sustain an organism's survival, which includes clotting of blood, transporting oxygen, contracting muscles and catalyzing chemical reactions. The building blocks of proteins are called amino acids.

The synthesis of proteins starts with transcribing the instructions in DNA into mRNA. The mRNA is then carried out of the cell's nucleus into the cytoplasm, specifically into structures called ribosomes. The ribosomes, which contain rRNA, are organelles where protein production occurs. The tRNA transports the amino acids to the ribosomes. The code sequence in mRNA is then translated, and specific proteins are synthesized by stringing amino acids together.

Take a look at the video below to learn more:

[https://www.youtube.com/watch?v=Dghot1ipzG8&feature=emb\\_logo](https://www.youtube.com/watch?v=Dghot1ipzG8&feature=emb_logo)