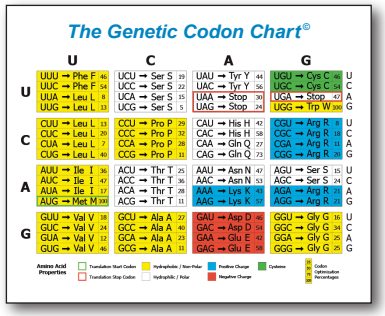
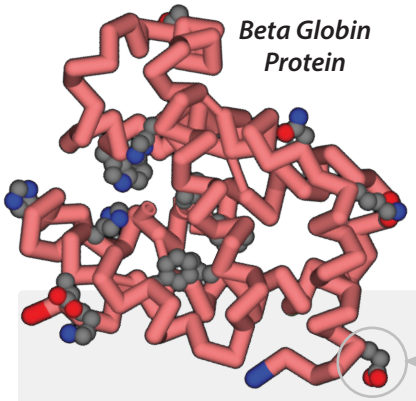


Decoding DNA

For Use with 3D Molecular Designs' ***Genetic Codon Chart***

Proteins are the "workhorse" molecules of the body. They build and repair tissue, facilitate communication, digest food, fight infections, contract muscles, catalyze chemical reactions and regulate homeostasis.

Each type of protein is made of a unique sequence of ***amino acids***. Instructions for building amino acid sequences are stored in the A-T and G-C base pairs of ***double-stranded DNA***. When building a protein, the ***coding DNA strand*** is ***transcribed*** into ***messenger RNA (mRNA)***, which is then ***translated*** into ***amino acids*** three mRNA bases at a time.



Below is the ***coding DNA strand*** for the first ten amino acids of ***beta globin***, a protein that carries oxygen in the blood. Complete the complementary ***non-coding DNA strand***, the ***messenger RNA*** and the ***amino acid sequence***. ***Sickle Cell Anemia*** is caused by a single DNA mutation. What impact would this have on the amino acid sequence?

Visit ***https://ar.3dmoleculardesigns.com/codon-chart-extension/*** to view the beta globin protein!

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