

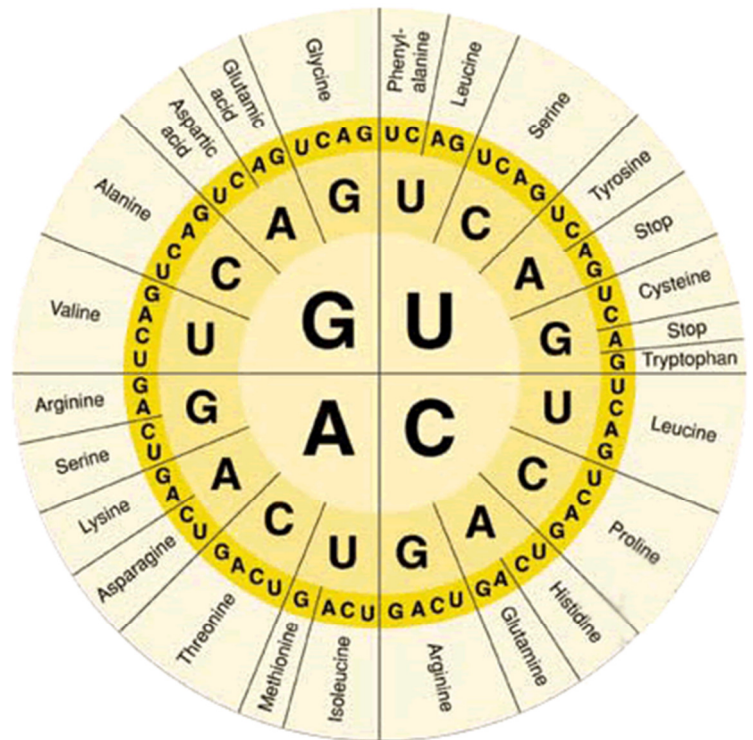
Name:

Protein Production

A protein is a chain of amino acids. The number and order of the amino acids determines which protein it is. The order of the amino acid comes from the order of the base pairs in the DNA. Each group of 3 base pairs is called a codon. Each codon instructs the cell to assemble a particular amino acid. The simplest protein is called TRP-cage. It is found in the poisonous saliva of Gila Monsters. It is made of just twenty amino acids. One possible DNA sequence which could code for this protein follows:

AACCTGTACATTCAGTGGCTAAAAGATGGAGGT
CCATCATCAGGAGGTCGACCTCCACCCAGTTAG

Use the diagram at left to determine the correct amino acid sequence for TRP-cage.



Name:

Hemoglobin is a protein found in red blood cells. Its function is to carry oxygen, so it's an important molecule in animals. It is composed of four similar protein chains twisted and coiled together. The first of these proteins has 32 amino acids in the order listed below.

valine – histidine – leucine – threonine – proline –
glutamic acid – glutamic acid – lysine – serine –
alanine – valine – threonine – alanine – leucine –
tryptophan – glycine – lysine – valine – aspartic acid –
valine – aspartic acid – glutamic acid – valine – glycine
– glycine – glutamic acid – alanine – leucine – glycine
– arginine – leucine

Write out a possible DNA sequence for the first strand of hemoglobin.

