

1. What type of protein can participate in transmitting signals among the cells?

a) enzyme
~~b) anti-body~~
~~c) receptor~~
 d) structural

2. A protein that can initiate or repress gene activity is called...

~~a) enzyme~~
 b) hormone
 c) transcription factor
 d) receptor

3. Which of the following proteins is an enzyme?

a) hemoglobin
 b) collagen
~~c) topoisomerase~~
 d) myoglobin

4. Which of the diagrams below shows the correct structure of a nucleic acid?

Proteins have complex shapes!

1. Primary structure – sequence of amino acids (polypeptide)
2. Secondary structure – helical or folded
3. Tertiary structure – complex/functional
4. Quaternary structure – several polypeptides together

DNA code

A A T T C A C C G G G G G C A T A C A C T

TTA AGT GGC CCC GGT ATG TGA

Leu Ser Gly Pro Arg Met **STOP**

codon/ triplet – 3 bases that map one amino acid

	T	C	A	G
T	TTT Phe F TTC Phe F TTA Leu L TTG Leu L	TCT Ser S TCC Ser S TCA Ser S TCG Ser S	TAT Tyr Y TAC Tyr Y TAA stop * TAG stop *	TGT Cys C TGC Cys C TGA stop * TGG Trp W
C	CTT Leu L CTC Leu L CTA Leu L CTG Leu L	CCT Pro P CCC Pro P CCA Pro P CCG Pro P	CAT His H CAC His H CAA Gln Q CAG Gln Q	CGT Arg R CGC Arg R CGA Arg R CGG Arg R
A	ATT Ile I ATC Ile I ATA Ile I ATG Met M	ACT Thr T ACC Thr T ACA Thr T ACG Thr T	AAT Asn N AAC Asn N AAA Lys K AAG Lys K	AGT Ser S AGC Ser S AGA Arg R AGG Arg R
G	GTT Val V GTC Val V GTA Val V GTG Val V	GCT Ala A GCC Ala A GCA Ala A GCG Ala A	GAT Asp D GAC Asp D GAA Glu E GAG Glu E	GGT Gly G GGC Gly G GGA Gly G GGG Gly G

RNA – ribonucleic acid

S - sugar - ribose

BASES

A adenine U uracil
 G guanine C cytosine

RNA

mRNA – messenger RNA

tRNA – transfer RNA

rRNA – ribosomal RNA

transcription – RNA assembly on a DNA template

