

Name: _____

TRANSCRIPTION & TRANSLATION

The goal of this activity is to transcribe and translate this DNA sequence to a polypeptide (protein). This DNA sequence belongs to a zebrafish. Zebrafish are important to research because they share 70% of their genes with humans.

STEP 1: Transcribe DNA to RNA. A > U; T > A; C > G; G > C

STEP 2: Translate RNA to amino acids using the codon box below. Record the single letter for the amino acid in the mRNA box.

STEP 3: Use the table to decide which protein you made.

	U	C	A	G	
U	UUU } Phe - F UUC } UUA } Leu - L UUG }	UCU } UCC } Ser - S UCA } UCG }	UAU } Tyr - Y UAC } UAA Stop UAG Stop	UGU } Cys - C UGC } UGA Stop UGG } Trp - W	U C A G
C	CUU } CUC } Leu - L CUA } CUG }	CCU } CCC } Pro - P CCA } CCG }	CAU } His - H CAC } CAA } Gln - Q CAG }	CGU } CGC } Arg - R CGA } CGG }	U C A G
A	AUU } AUC } Ile - I AUA } AUG Met - M	ACU } ACC } Thr - T ACA } ACG }	AAU } Asn - N AAC } AAA } Lys - K AAG }	AGU } Ser - S AGC } AGA } Arg - R AGG }	U C A G
G	GUU } GUC } Val - V GUA } GUG }	GCU } GCC } Ala - A GCA } GCG }	GAU } Asp - D GAC } GAA } Glu - E GAG }	GGU } GGC } Gly - G GGA } GGG }	U C A G

Polypeptide mRNA DNA

TACCAACTCACCTGTCTACGGCTCGCGTGTCCGGTAGGAACCGGACACCCCTTTTCGAGTTA

PROTEIN NAME	AMINO ACID SEQUENCE
Estrogen Receptor Alpha	MVMSAHDRNT AGTPRSP
Beta-globin	MVEWTDAERT AILGLWGKLN
T-Cell Receptor Alpha	XTNNVGRMIF GKGTKLIVDS
Connective Tissue Growth Factor	MFSGMTQSTVI ALLFLTFLRW

CONCLUSION:

The protein I translated is

I researched this protein and discovered that its function is
