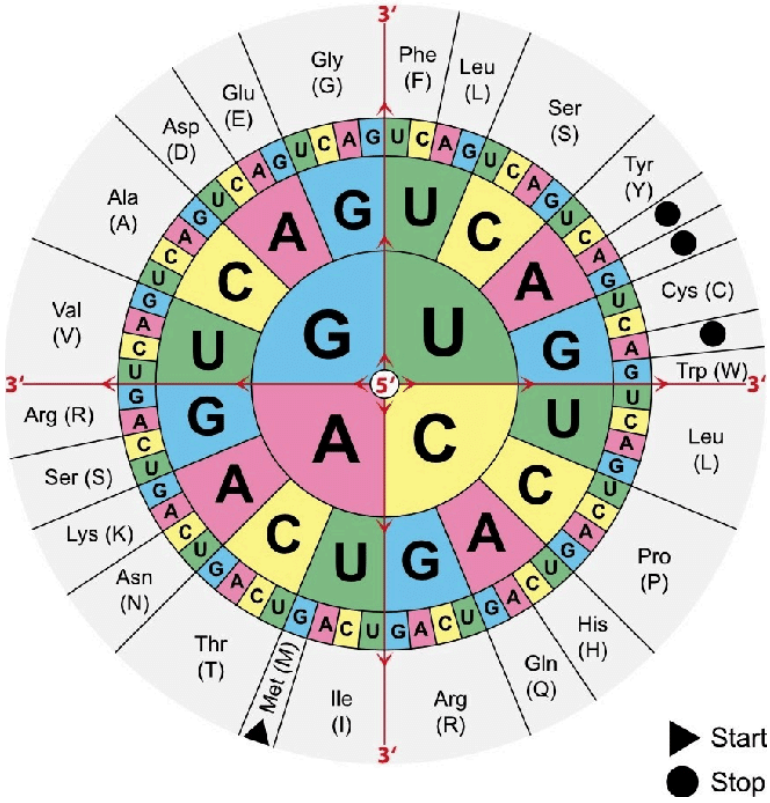
NAME: _____ **HOUR:** _____ **DATE:** _____

Evaluation Time!
Using the codon wheel and information below, please answer the questions.

https://www.researchgate.net/figure/The-genetic-code-Codons-consisting-of-three-bases-triplets-correspond-to-different_fig3_346628383



Mud dauber DNA sequence:
TAC-GCT-AGC-GGT-AAT-GCG-CTG-CCT-GTA-CGT-TTT-TGG-GAG-CTC-ATC

Step 1: convert the DNA sequence to RNA.
Mud dauber RNA sequence:
AUG-CGA-UCG-CCA-UUA-CGC-GAC-GGA-CAU-GCA-AAA-ACC-CUC-GAG-UAG

Step 2: convert this RNA sequence to amino acid sequence;
Mud dauber amino acid sequence:
Met-arg-ser-pro-leu-arg-asp-gly-his-ala-lys-thr-leu-glu-stop

Continued on next page

Step 3.

Look at the amino acid sequences of Protein A and Protein B. Highlight what is different in these two amino acid sequences compared to the original mud dauber amino acid sequence.

Protein A amino acid sequence:

met-**lys**-ser-pro-leu-arg-asp-gly-his-ala-lys-thr-**val**-glu-stop

How many amino acids are different in this protein compared to the mud dauber protein?

2 amino acids different

Protein B amino acid sequence:

met-val-ser-pro-pro-arg-asp-leu-his-lys-ala-thr-his-glu-stop

How many amino acids are different in this protein compared to the mud dauber protein?

6 amino acids different

Question: Based on the information above, which protein is most similar to the mud dauber protein? Protein A

Justify your answer.

Protein A only has two different amino acids compared to protein B which has 6 differences.