Protein Synthesis Vocabulary

* Central Dogma

• Mutations

o Frameshift:

 Deletion

 Insertion

o Substitution

 Silent

 Missense

 Nonsense

* + Transcription
    - mRNA
    - Complimentary Base Pairs
    - RNA Polymerase
    - Template Strand (DNA)
    - Promotor (TATA Box)
    - Stop Sequence
  + Translation
    - Genetic Code
    - Codon
    - Anti Codon
    - Amino Acid
    - rRNA
    - tRNA
    - Protein
    - Start Codon (AUG)
    - Stop Codon
    - Ribosome

Review Questions

1. How do proteins create an organisms traits? What codes for proteins?
2. What is the complimentary base pairing rule for RNA? How is it different than for DNA?
3. What is mRNA? What is rRNA? What is tRNA? What are their functions in the Central Dogma?
4. How is RNA different than DNA?
5. What is an anticodon? What is its role in synthesizing a polypeptide chain?
6. Why is tRNA referred to as a translator or an adaptor?
7. Why is mRNA called a messenger?
8. Transcribe then Translate the following DNA sequence: TAC GGC CTG TAG GGA CCG GTA TGA GGT TTC CTA
9. What is the genetic code and what role does it play in synthesizing proteins?
10. What are the types of substitution mutations? Why is a frameshift mutation worse for an organisms chances of survival?
11. Normal DNA: TTA ATG GGT CGT GGT TTG GAT TAG GCA CGT CCT

Mutant DNA: TTA ATG GGT CGT GGT TGG ATT AGG CAC GTC CTT

Circle where the mutation took place and what type of mutation it is. Do you think the protein will be able to function?

1. What is RNA polymerase role in transcription? How is it different than DNA polymerase?
2. After translation, what has to happen to the polypeptide chain to make the protein functional?
3. Why do we need mRNA in the central dogma?