

Try These: Translation Questions

Questions

1. What are the key steps in the initiation of translation in eukaryotes and prokaryotes? **K/U**
2. What is the role of tRNA in translation? **K/U**
3. Why is there not a specific tRNA molecule for each possible codon? **K/U**
4. List the possible anticodons for phenylalanine, alanine, and tyrosine. **K/U**
5. The wobble hypothesis states that there is increased flexibility in base pairing at the third nucleotide of some codons. Why does this not lead to frequent mistakes in the assembly of proteins? **T/A**
6. Explain what occurs at the A, P, and E sites during the translation of mRNA into a polypeptide. **K/U**
7. What are some examples of processes that might demand high rates of protein synthesis in humans? **T/A**
8. Using a diagram, summarize the process of translation. Label the areas of initiation, elongation, and termination. Present your diagram to a classmate, in a format of your choice. **C**
9. The set of all proteins expressed by a genome over the lifetime of a cell is called the proteome. The proteome is constantly changing as proteins interact with other proteins and chemical signals inside and outside the cell. Scientists are turning to proteomics—the study of the structure, activities, and functions of proteins—to understand the molecular basis of health and disease. Using the Internet or other sources, research the Proteome Project. Find out about its mission, the people and organizations involved, the technologies being used, and current findings. Present your findings in a format of your choice. **CAREER LINK** **K/U** **C**
10. Many proteins are assembled from more than one kind of polypeptide. A hemoglobin protein, for example, consists of two alpha and two beta polypeptides. In this case, two genes are needed to code for a single protein. Do online research to find examples of other proteins that are coded for by multiple genes. Summarize the information you find. **A**

