Name _____

Decoding the Genetic Blueprint: Understanding DNA Translation

Open-Ended Response Answer Key

1. Answers may vary. Example: "Understanding translation could lead to the development of new antibiotics by targeting specific steps in the translation process to inhibit bacterial protein synthesis."
2. It's important for cells to regulate translation to ensure that proteins are synthesized at the right time, in the right amount, and in response to various internal and external signals.
3. As a scientist studying translation, I would want to investigate how different factors, such as environmental cues or cellular signaling pathways, regulate the activity of ribosomes and protein synthesis.
4. Errors in translation, such as misreading of the genetic code or incorrect folding of proteins, can lead to the production of abnormal proteins or insufficient levels of essential proteins, which may contribute to the development of genetic disorders like Alzheimer's disease or muscular dystrophy.

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