

13 Multiple choice questions

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How do you use the codon wheel?

- The start codon (AUG) marks the beginning of a protein and where translation needs to begin; The stop codons (UGA, UAA, and UAG) mark the end of the protein and where translation needs to end.
 - 1) controls the differentiation (diversity) of specialized cells in a developing zygote
 - 2) important in determining the organism's body plan
 - 3) ultimately controls when and where a body part will develop
 - 1) the first letter of the triplet will match with the inner most letter on the codon wheel
 - 2) the second letter of the triplet will then need to match with one of the letters in the second ring on the codon wheel
 - 3) the last letter of the triplet will need to match with one of the letters on the last (outer most) ring on the codon wheel
 - 1) start codon signals the beginning, and the ribosome, mRNA, and the start codon come together
 - 2) each codon following the start codon is read (translated), and the tRNA brings the correct amino acid to the ribosome
 - 3) process continues until the stop codon is reached

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what is the codon wheel?

- the codon wheel represents the structure of ribosomes
 - the codon wheel is a diagram of dna replication
 - the codon wheel is a tool for measuring rna length
 - the codon wheel is used to help determine the amino acid sequence based on the codons found on the mRNA

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What is the purpose of the start and stop codons?

- 1) start codon signals the beginning, and the ribosome, mRNA, and the start codon come together
 - 2) each codon following the start codon is read (translated), and the tRNA brings the correct amino acid to the ribosome
 - 3) process continues until the stop codon is reached
 - the nucleotide sequence determines the amino acid that will be carried over by the transfer RNA
 - the codon wheel is used to help determine the amino acid sequence based on the codons found on the mRNA
 - The start codon (AUG) marks the beginning of a protein and where translation needs to begin; The stop codons (UGA, UAA, and, UAG) mark the end of the protein and where translation needs to end.

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Why are hox genes important during early development?

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- 2) important in determining the organism's body plan
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- the nucleotide sequence determines the amino acid that will be carried over by the transfer RNA
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What is a codon?

- a type of rna that carries genetic information
- a sequence of amino acids in a protein
- a single nucleotide that codes for a protein
- a triplet of nucleotides found on the mRNA

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Why are the codons important during translation?

- the codons are irrelevant during the translation process
- the transfer RNA is responsible for creating the mRNA sequence
- the nucleotide sequence determines the amino acid that will be carried over by the transfer RNA
- the amino acids are synthesized in the nucleus before translation

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What is gene expression?

- by joining amino acids into a polypeptide chain and the order of amino acids is determined by the combination of nucleotides in the sequence of the mRNA
- the codon wheel is used to help determine the amino acid sequence based on the codons found on the mRNA
- gene expression is defined as the ability of an organism to control which genes are transcribed in response to the environment (turning on and off genes)
- The start codon (AUG) marks the beginning of a protein and where translation needs to begin; The stop codons (UGA, UAA, and, UAG) mark the end of the protein and where translation needs to end.

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What is the genetic code?

- the genetic code refers to the structure of dna only
- the genetic code is a set of rules for protein folding
- the genetic code describes the physical traits of an organism
- the genetic code is defined as a triplet of nucleotides that determine the sequences of amino acids in a protein

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When does translation begin?

- begins when the dna is transcribed into mRNA
 - begins when the ribosome is fully assembled in the nucleus
 - begins when the amino acids are already formed in the cytoplasm
 - begins when the mRNA leaves the nucleus and attaches to a ribosome

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How are proteins formed?

- gene expression is defined as the ability of an organism to control which genes are transcribed in response to the environment (turning on and off genes)
 - the codon wheel is used to help determine the amino acid sequence based on the codons found on the mRNA
 - by joining amino acids into a polypeptide chain and the order of amino acids is determined by the combination of nucleotides in the sequence of the mRNA
 - 1) controls the differentiation (diversity) of specialized cells in a developing zygote
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What are the two steps of gene expression?

- transcription and translation
 - translation only
 - transcription only
 - replication and translation

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What are the steps of translation?

- transcription and translation
 - 1) start codon signals the beginning, and the ribosome, mRNA, and the start codon come together
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 - 3) process continues until the stop codon is reached
 - 1) the first letter of the triplet will match with the inner most letter on the codon wheel
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 - 3) the last letter of the triplet will need to match with one of the letters on the last (outer most) ring on the codon wheel
 - The start codon (AUG) marks the beginning of a protein and where end of the protein and where translation needs to end.

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What is translation?

- Translation refers to the movement of proteins within a cell
 - Translation is the process of copying RNA into another RNA strand
 - Translation is the synthesis of DNA from RNA
 - Translation is the process of decoding (reading) the mRNA into a protein