Name: Score:

13 Multiple choice questions

Term 1 of 13

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

Term 2 of 13

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

Term 3 of 13

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.

LIVEWORKSHEETS

Term 4 of 13

Why are hox genes important during early development?

- 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
- the nucleotide sequence determines the amino acid that will be carried over by the transfer RNA
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  3) process continues until the stop codon is reached

Term 5 of 13

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

Term 6 of 13

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

Term 7 of 13

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.

Term 8 of 13

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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Term 9 of 13

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

Term 10 of 13

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
  2) important in determining the organism's body plan
  3) ultimately controls when and where a body part will develop

Term 11 of 13

What are the two steps of gene expression?

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

Term 12 of 13

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
  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
- 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
- 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.

Term 13 of 13

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

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