Biology chapter 12 section 3

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What is synthesized to pass the DNA code to the ribosome? Messenger RNA (mRNA) molecules carry the coding sequences for protein synthesis and are called transcripts; ribosomal RNA (rRNA) molecules form the core of a cell's ribosomes (the structures in which protein synthesis takes place); and transfer RNA (tRNA) molecules carry amino acids to the ribosomes during protein ...

How is mRNA processed before it reaches the ribosome? Processing mRNA In eukaryotes, the new mRNA is not yet ready for translation. At this stage, it is called pre-mRNA, and it must go through more processing before it leaves the nucleus as mature mRNA. The processing may include the addition of a 5' cap, splicing, editing, and 3' polyadenylation (poly-A) tail.

Which of these is not an aspect of the central dogma of biology? The central dogma of molecular biology describes the flow of genetic information from DNA to RNA to protein. Reverse transcription, which involves the production of DNA from an RNA template, is not a part of the central dogma.

What is the central dogma of biology? Definition. Central dogma. The central dogma of molecular biology is a theory stating that genetic information flows only in one direction, from DNA, to RNA, to protein, or RNA directly to protein.

What takes the DNA code to the ribosome? Starting in the nucleus, we see how the DNA code is converted to messenger RNA by the process of transcription. We then follow the messenger RNA into the cytoplasm where it is bound by protein factories, called ribosomes. The ribosomes read the messenger RNA to produce a chain of amino acids.

What carries a copy of the DNA code to the ribosome? The mRNA then carries the genetic information from the DNA to the cytoplasm, where translation occurs. During translation, proteins are made using the information stored in the mRNA sequence. The mRNA attaches to a structure called a ribosome that can read the genetic information.

How does mRNA reach the ribosomes? The mRNA is recognized and brought to the ribosome by the eIF-4 group of factors. The 5´ cap of the mRNA is recognized by eIF-4E. Another factor, eIF-4G, binds to both eIF-4E and to a protein (poly-A binding protein or PABP) associated with the poly-A tail at the 3' end of the mRNA.

What converts DNA into mRNA? During transcription, the DNA of a gene serves as a template for complementary base-pairing, and an enzyme called RNA polymerase II catalyzes the formation of a pre-mRNA molecule, which is then processed to form mature mRNA (Figure 1).

When mRNA is synthesized using the information from DNA, the process is called? Hence the name transcription.

Which enzyme allows RNA to be coded into DNA? Reverse Transcriptase is an enzyme that converts RNA into DNA, commonly found in retroviruses like HIV. It is used in molecular biology research to create complementary DNA strands from RNA templates, allowing for the amplification of RNA sequences similar to DNA.

What is a gene expression for dummies? Gene expression is the process by which the information encoded in a gene is turned into a function. This mostly occurs via the transcription of RNA molecules that code for proteins or non-coding RNA molecules that serve other functions.

How is pre-mRNA changed during RNA processing? Initial primary transcripts produced by RNAPII undergo several processing steps to become mature mRNA. For most pre?mRNA, these steps include three main processes: addition and modification of a 5? cap, removal of introns by RNA splicing, and formation of mature 3? ends by cleavage and polyadenylation.

What is the goal of transcription? The goal of transcription is to make a RNA copy of a gene's DNA sequence. For a protein-coding gene, the RNA copy, or transcript,

carries the information needed to build a polypeptide (protein or protein subunit). Eukaryotic transcripts need to go through some processing steps before translation into proteins.

What does mRNA carry the instructions for? The role of mRNA is to carry protein information from the DNA in a cell's nucleus to the cell's cytoplasm (watery interior), where the protein-making machinery reads the mRNA sequence and translates each three-base codon into its corresponding amino acid in a growing protein chain.

What is the end product of transcription? The end product of transcription is an RNA transcript. This could be any form of RNA such as mRNA (messenger RNA), rRNA (ribosomal RNA), tRNA (transfer RNA), or non-coding RNA. Prokaryotes form a polycistronic mRNA whereas eukaryotes form a monocistronic mRNA. Transcription is catalyzed by the enzyme RNA polymerase.

What is a change in DNA called? A mutation is a change in the DNA sequence of an organism. Mutations can result from errors in DNA replication during cell division, exposure to mutagens or a viral infection.

What does DNA stand for? Deoxyribonucleic acid (abbreviated DNA) is the molecule that carries genetic information for the development and functioning of an organism. DNA is made of two linked strands that wind around each other to resemble a twisted ladder — a shape known as a double helix.

How does a gene code for a protein? The nucleotide sequence of a gene, through the medium of mRNA, is translated into the amino acid sequence of a protein by rules that are known as the genetic code. This code was deciphered in the early 1960s. The sequence of nucleotides in the mRNA molecule is read consecutively in groups of three.

What are the three coding letters called in tRNA? Each tRNA contains a set of three nucleotides called an anticodon. The anticodon of a given tRNA can bind to one or a few specific mRNA codons.

What brings the genetic code to the ribosome? The ribosome reads the messenger RNA (mRNA) sequence and translates that genetic code into a specified string of amino acids, which grow into long chains that fold to form proteins.

What are the triplets of mRNA called? Each mRNA is made up of thousands of triplet sequences called codons.

Is DNA synthesized in ribosomes? The nucleus (plural, nuclei) houses the cell's genetic material, or DNA, and is also the site of synthesis for ribosomes, the cellular machines that assemble proteins. Inside the nucleus, chromatin (DNA wrapped around proteins, described further below) is stored in a gel-like substance called nucleoplasm.

How does DNA instructions get to the ribosomes? The information gets from the DNA to the ribosome through messenger RNA (mRNA). During transcription, RNA polymerase reads the code in DNA and creates a complementary copy called mRNA. The mRNA is processed and then exported to the cytoplasm.

Which molecule is synthesized using code carried in DNA? The majority of genes carried in a cell's DNA specify the amino acid sequence of proteins; the RNA molecules that are copied from these genes (which ultimately direct the synthesis of proteins) are called messenger RNA (mRNA) molecules.

What carries the genetic code to the ribosomes quizlet? (mRNA/tRNA) is used to carry the genetic code from DNA to the ribosomes.

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