

A Level Protein Synthesis Key Words

Key Word	Definition
Gene	A sequence of DNA that codes for a protein. Every gene codes for a sequence of amino acids and so therefore a protein
Polypeptide	Protein
Triplet code	3 bases in a gene (a codon) codes for 1 amino acid in a protein
Transcription	Forming mRNA from DNA
Translation	Forming a protein using the mRNA, happens in the ribosomes
RNA	Single strand, contains U instead of T
mRNA	Formed during transcription, a single stranded copy of the DNA, carries the genetic code to the ribosomes to make a protein. m = messenger
Codon	3 bases on the mRNA (or DNA), sometimes called a triplet. Each codon codes for an amino acid OR a start/stop signal for protein production
tRNA	Single stranded, clover shaped. It has 3 bases (anticodon) that are complementary to the codon on the mRNA and it also carries the correct amino acid to the ribosomes. t = transfer (transfers the amino acid to the ribosome)
Anticodon	3 bases on the tRNA, complementary to the codon on the mRNA
rRNA	Part of the structure of the ribosome, it catalyses the formation of peptide bonds between amino acids. r = ribosomal (forms part of the ribosome structure)
Genetic code	Sequence of codons that code for specific amino acids and therefore proteins
Non-overlapping	You read 3 bases at a time, triplets do not share bases
Degenerate	There are more possible combinations of triplet bases than there are amino acids
Universal	The same triplets code for the same amino acids in all living things
DNA helicase	An enzyme that breaks the hydrogen bonds between the bases of DNA = unzips the 2 DNA

	strands
RNA polymerase	Assembles the mRNA strand during transcription
Start codon	Translation always begins with a start codon (AUG). The tRNA with the anticodon complementary to the start codon on the mRNA binds to it and brings the amino acid methionine
Stop codon	Translation continues until a stop codon on the mRNA molecule is reached e.g. UGA, UAA, UAG