

From Gene to Protein

9th Grade

Transcription then translation — two steps, two locations.



A gene's instructions are copied into RNA, then read to build a protein. DNA never leaves the nucleus.

- Transcription: DNA is copied into mRNA, inside the nucleus.
- mRNA carries the message out to the cytoplasm.
- Translation: ribosomes read mRNA three bases at a time.
- Each three-base codon specifies one amino acid.
- Amino acids join into a chain, which folds into a protein.

LOOK FOR IT

A change of one base can change one amino acid — and sometimes the whole protein's function.

DNA → RNA → protein. This is called the central dogma of molecular biology.