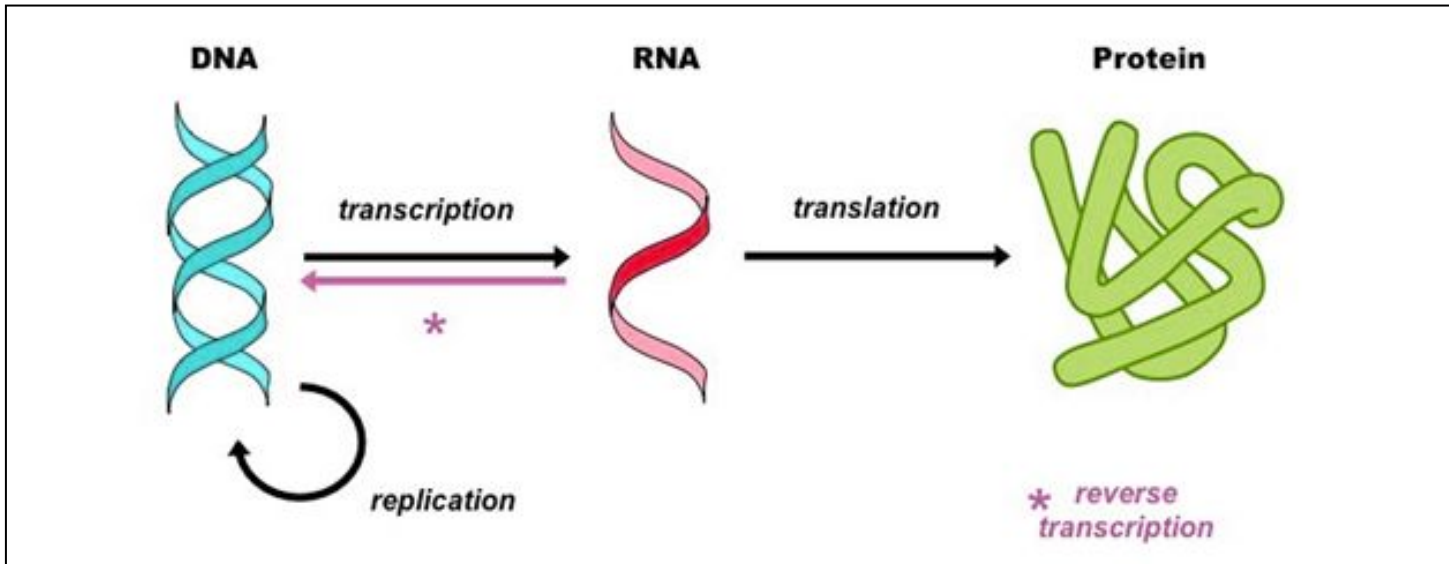




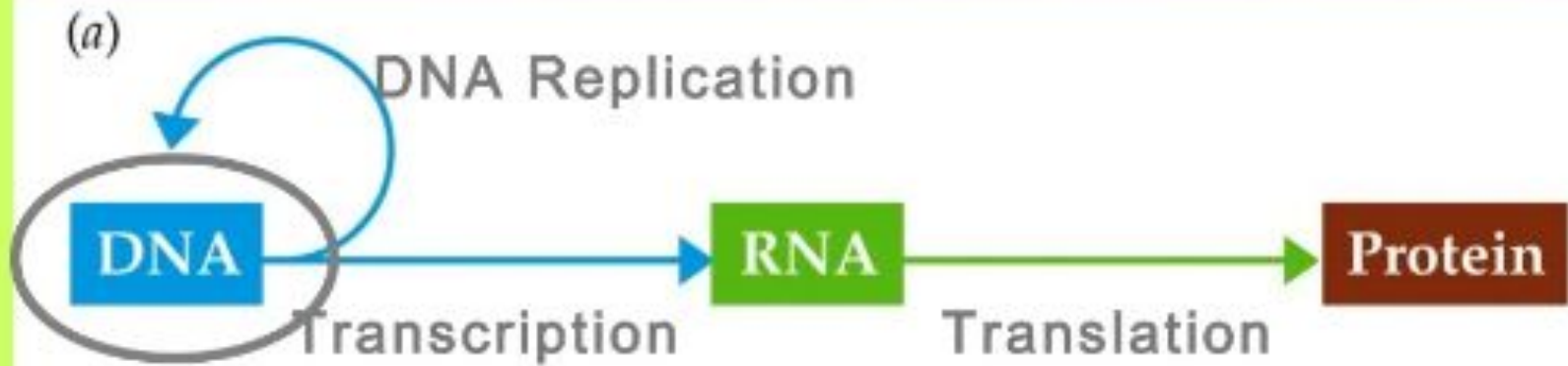
# Central Dogma





# The Central Dogma

- The Flow of Information: DNA → RNA →

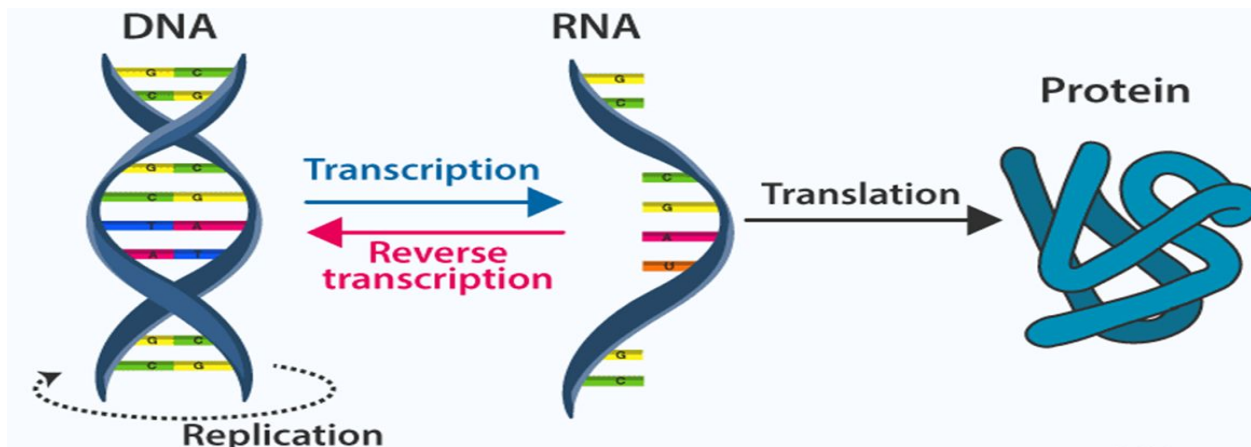
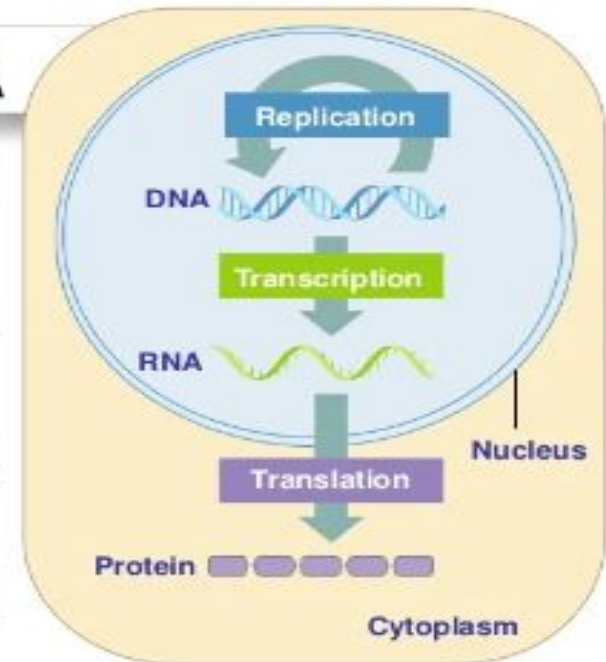


**“Central dogma is the process in which the genetic information flows from DNA to RNA, to make a functional product protein.”**

**It was first proposed in 1958 by Francis Crick, discoverer of the structure of DNA**

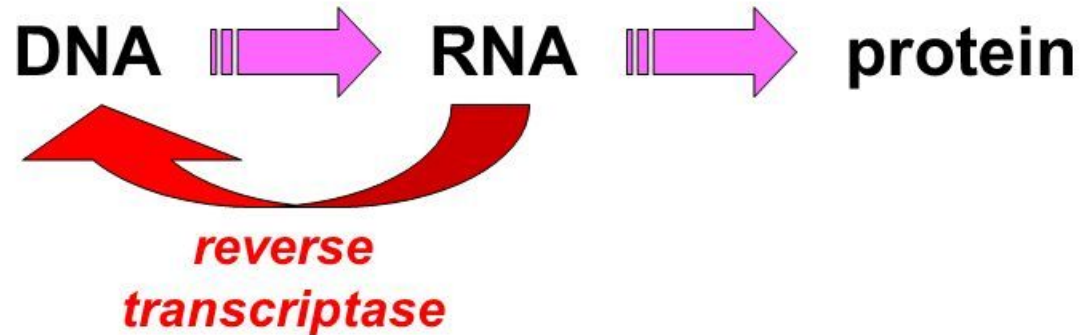
# THE CENTRAL DOGMA

- **DNA** is the genetic material within the nucleus.
- **Replication** creates new copies of DNA.
- **Transcription** creates an RNA using DNA information.
- **Translation** creates a protein using RNA information.



# Retroviruses

changed our understanding of the transmission of genetic information

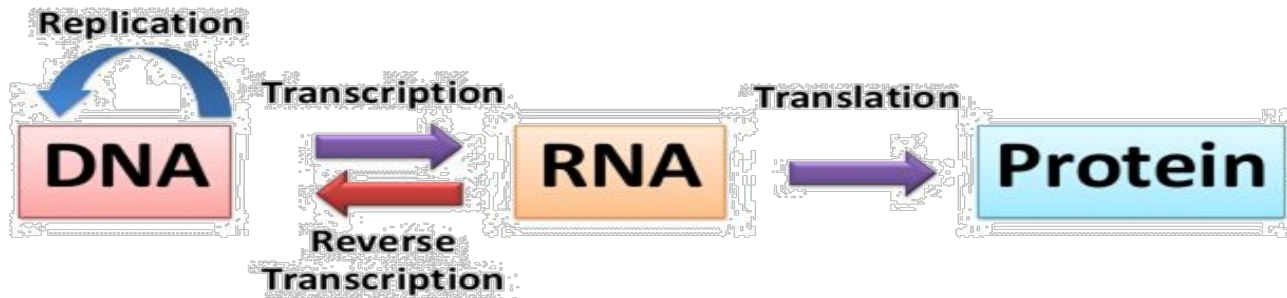


Reverse transcription: copying of an RNA template (the viral genome) into a double-stranded DNA copy.

RNA-dependent DNA Polymerase.

## Modified Central Dogma

The central dogma of molecular biology states that DNA is transcribed to RNA, which is then translated into protein.



- **Replication:** synthesis of daughter DNA from parental DNA
- **Transcription:** synthesis of RNA using DNA as the template
- **Translation:** protein synthesis using mRNA molecules as the template
- **Reverse transcription:** synthesis of DNA using RNA as the template

