

Transcription

Draw a diagram depicting the *CENTRAL DOGMA OF MOLECULAR BIOLOGY*:

Information flows from DNA to RNA to proteins.

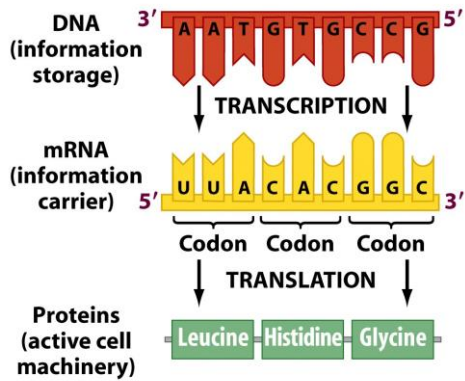
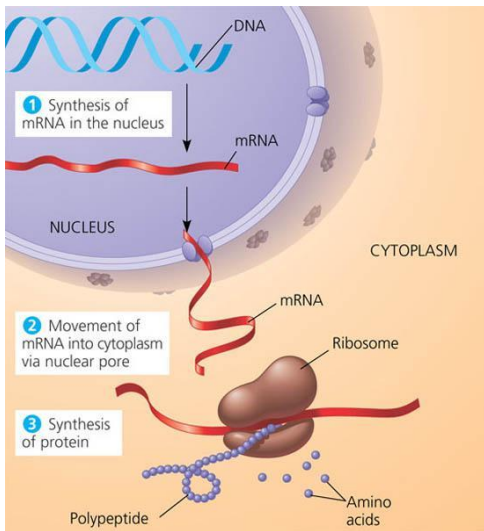


Figure 15-10a Biological Science, 2/e

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Why does DNA need to be transcribed into RNA before it can be used to synthesize proteins?

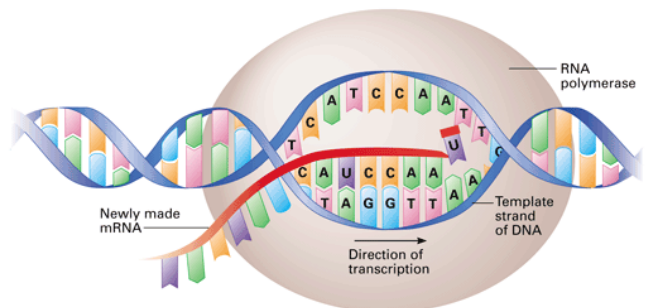


Eukaryotes have a nucleus

DNA cannot leave the nucleus.

Why must RNA be able to leave the nucleus?

What is mRNA?

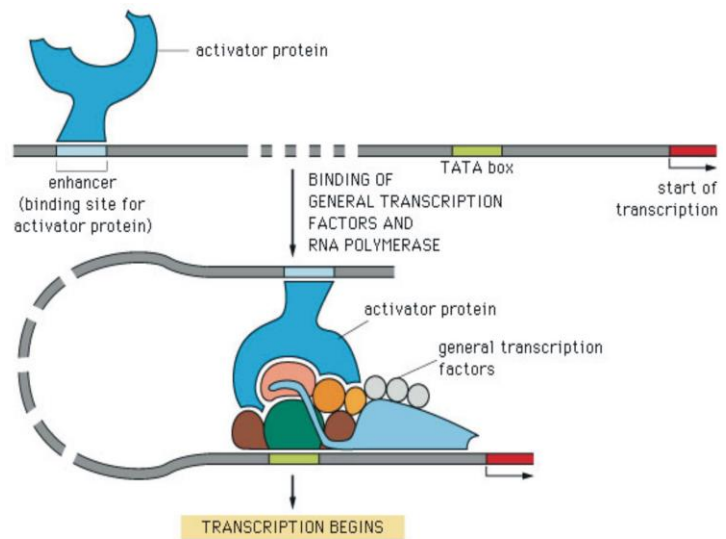
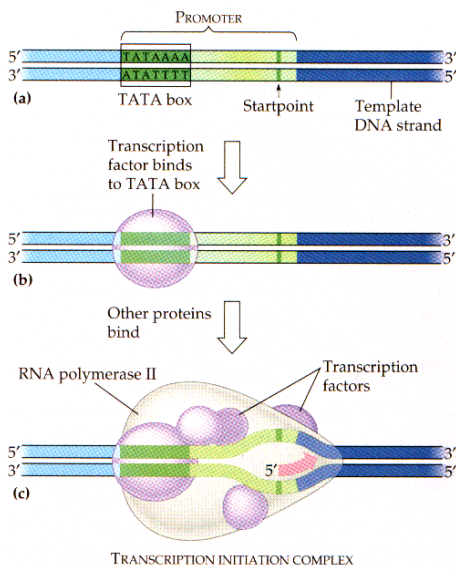


The 4 Phases of Transcription:

- 1) _____
- 2) _____
- 3) _____
- 4) _____ (Eukaryotes Only)

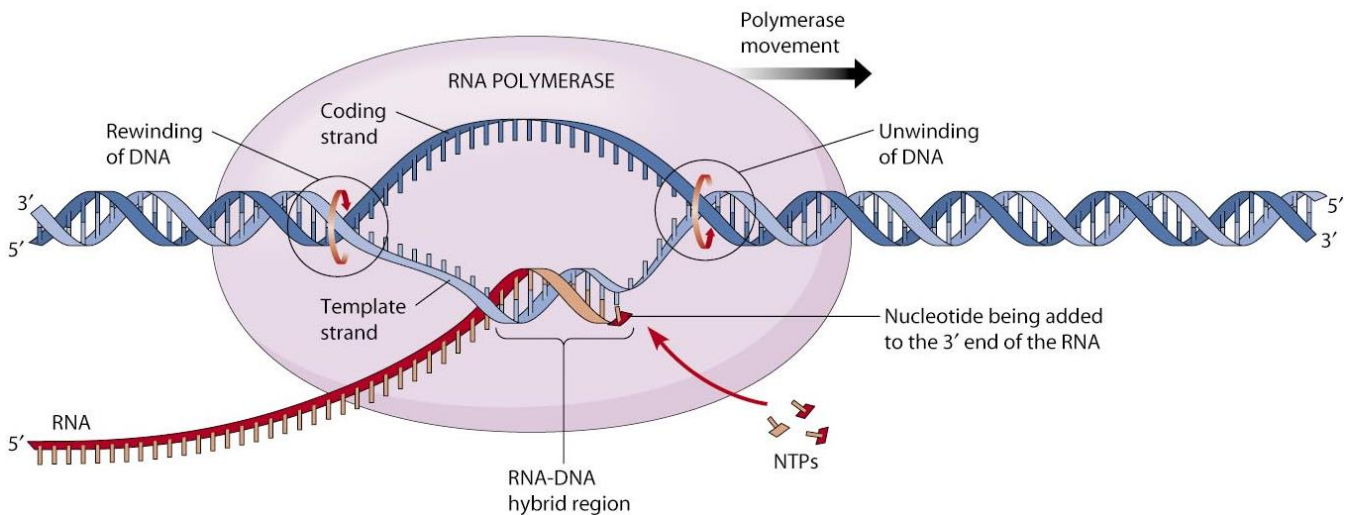
Initiation

- RNA polymerase (RNAP) binds to the double stranded DNA molecule at a promoter sequence (with the help of initiation factors)
- It is able to locally unzip DNA with its own built in helicase activity as it constructs an RNA transcript of the DNA



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Elongation



Termination

- A terminator sequence on the coding strand tells RNAP when to stop transcribing the mRNA
- RNAP is released and reused and mRNA is released

Processing

- In Eukaryotic cells the RNA transcript is called pre-mRNA (or primary RNA) because it must still be modified before it leaves the nucleus

Why does mRNA need processing?

