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 class - XII
 subject - Biology

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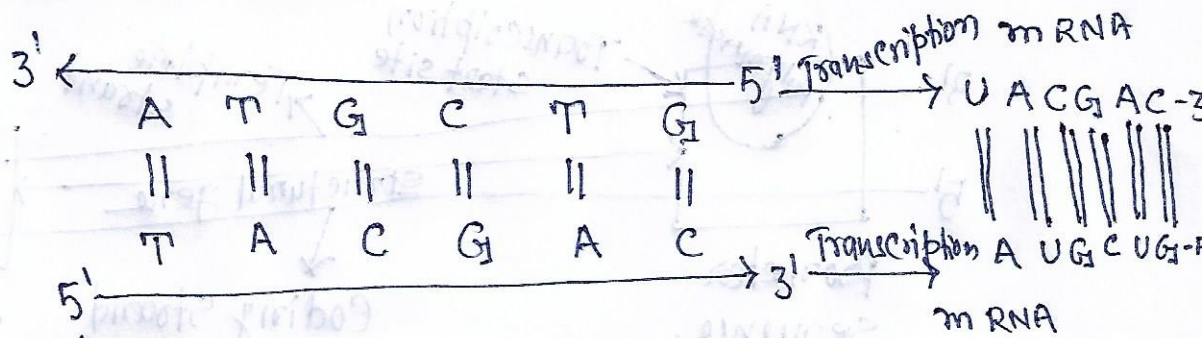
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Topic - Genetics
Transcription :->



Cistron is the gene which produces mRNA (protein)

Genes which code for rRNA and tRNA only transcribe but do not translate polypeptide



The amino acid sequence of proteins produced by the 2 mRNA will be different

If both strands are transcribed together the mRNA

In Prokaryotes :->

RNA polymerase (DNA dependent RNA polymerase) is of only one type

Produced will bind to each other and form dsRNA which is not able to translate



Core enzyme



protein
Sigma factor

It has 5 sub units

(Helps core RNA polymerase to specifically bind to promoter sequence)

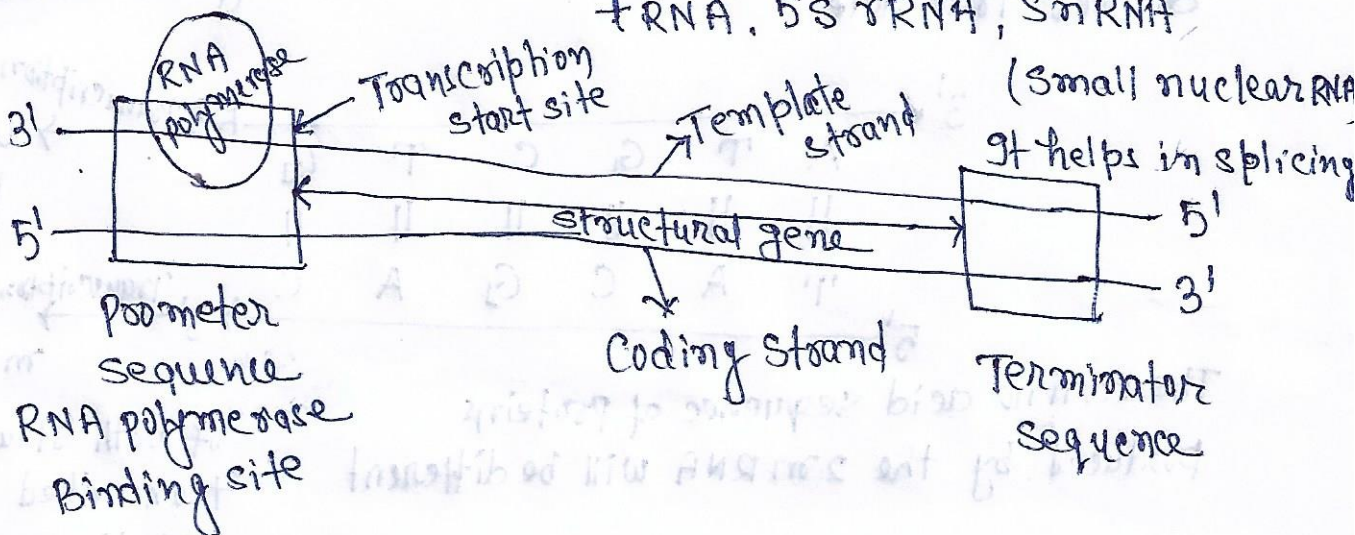
α - 2 sub units

β - 1 sub unit } (protein)
 β' - 1 sub unit }

Types of RNA polymerases in Eukaryotes

In Eukaryotes there are 3 types of RNA polymerase

- (i) RNA polymerase I → Transcribes rRNA genes
18S, 5.8S and 28S and rRNA
- (ii) RNA polymerase II → transcribes
hn RNA (heterogenous nuclear RNA also called as precursor of mRNA)
- (iii) RNA polymerase III → transcribes
tRNA, 5S rRNA, snRNA



Gene or Transcription unit

Template strand or Non coding strand or Antisense strand
 coding strand or Non template strand or sense strand

Template strand → 3' AATTGCTA — 5'

Coding strand → 5' TTAA CGAT — 3'

m. RNA → 5' UUAACGAU — 3'

- Coding strand is parallel to mRNA except (T → U)

- Template strand is Complementary and anti parallel to both coding strand and m-RNA

promotes is up stream of structural gene → 3' ← 5' Terminator is down stream of structural gene