RAMA UNIVERSITY

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FACULTY OF ENGINEERING &TECHNOLOGY
DEPARTMENT OF BIOTECHNOLOGY

Termination of transcription

Termination of the synthesis of the RNA molecule in bacteria is of two types-

a) Rho (ρ) dependent termination-

- The termination process is signaled by a sequence in the template strand of the DNA molecule—a signal that is recognized by a termination protein, the rho (ρ) factor.

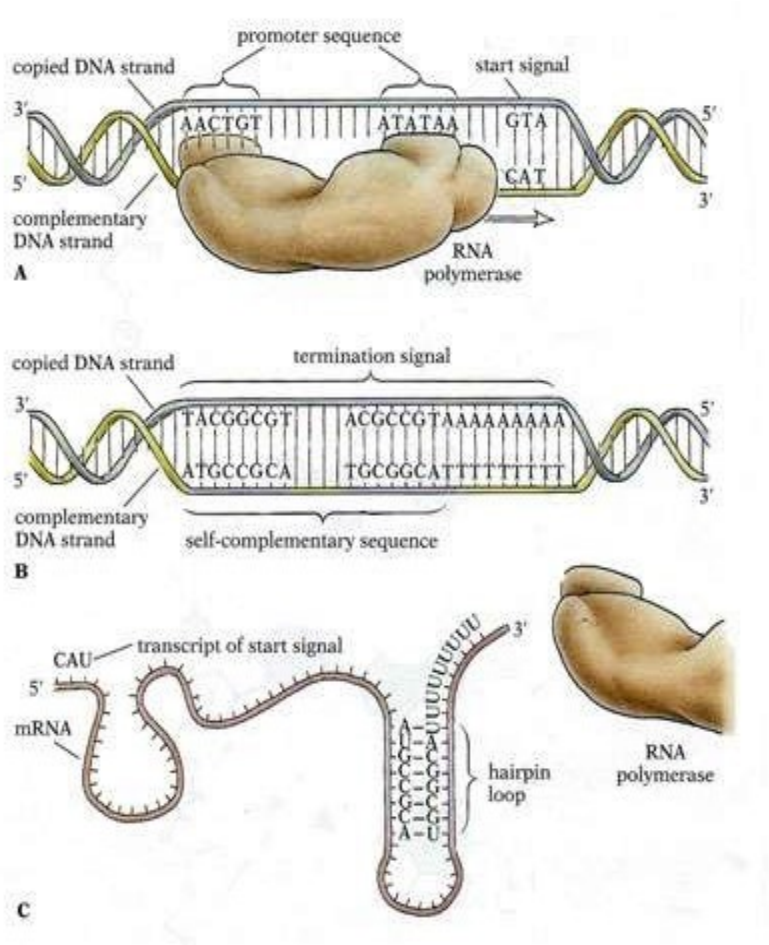
- Rho is an ATP-dependent RNA-stimulated helicase that disrupts the nascent RNA-DNA complex.

b) Rho independent termination

- This process requires the presence of intrachain self complementary sequences in the newly formed primary transcript so that it can acquire a stable hair pin turn that slows down the progress of the RNA polymerase and causes it to pause temporarily.
- Near the stem of the hairpin, a sequence occurs that is rich in G and C.
- This stabilizes the secondary structure of the hair pin.

•Beyond the hair pin, the RNA transcript contains a strings of Us, the bonding of Us to the corresponding As is weak.

•This facilitates the dissociation of the primary transcript from DNA.



- After termination of synthesis of the RNA molecule, the enzyme separates from the DNA template.
- With the assistance of another factor, the core enzyme then recognizes a promoter at which the synthesis of a new RNA molecule commences.