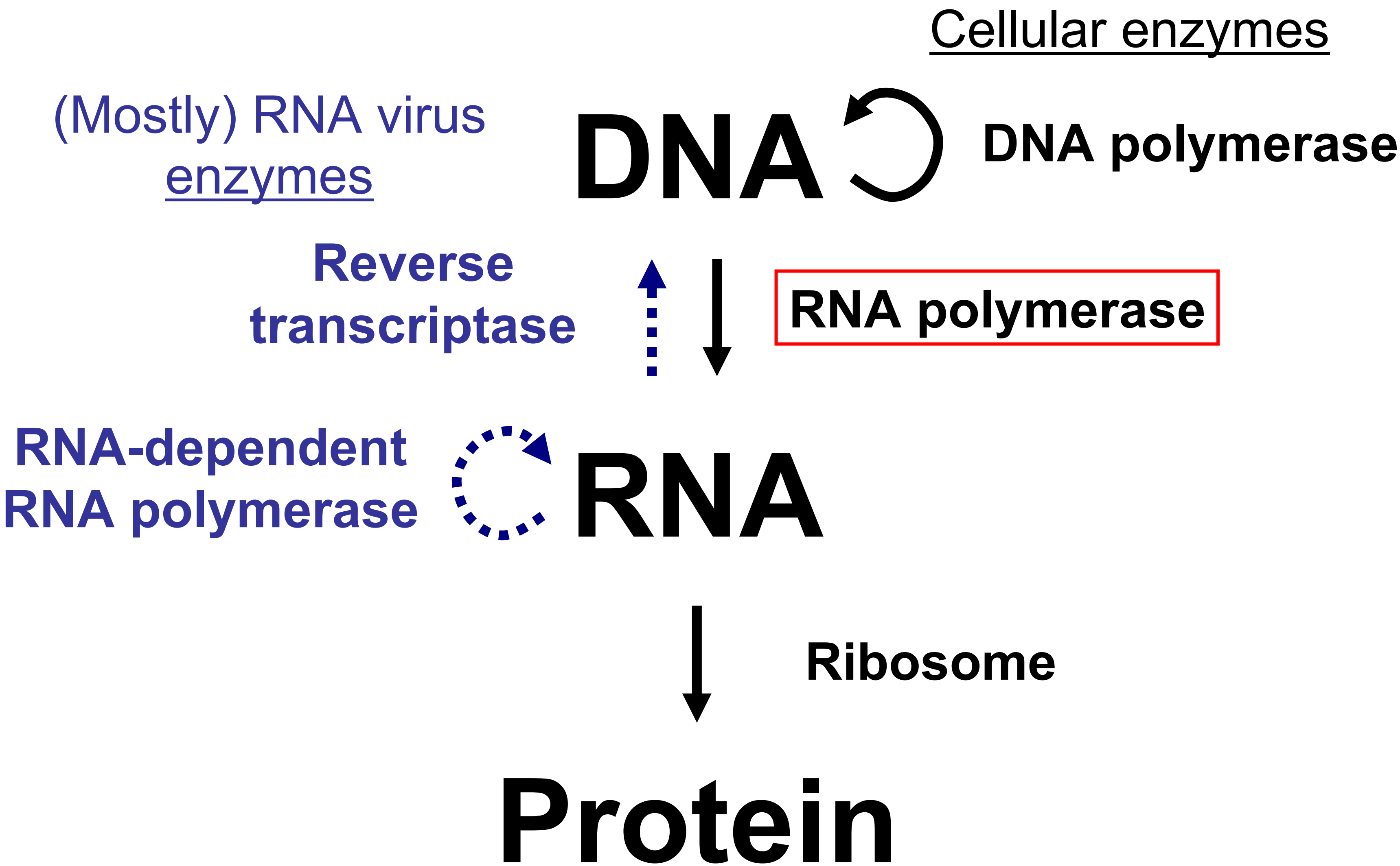
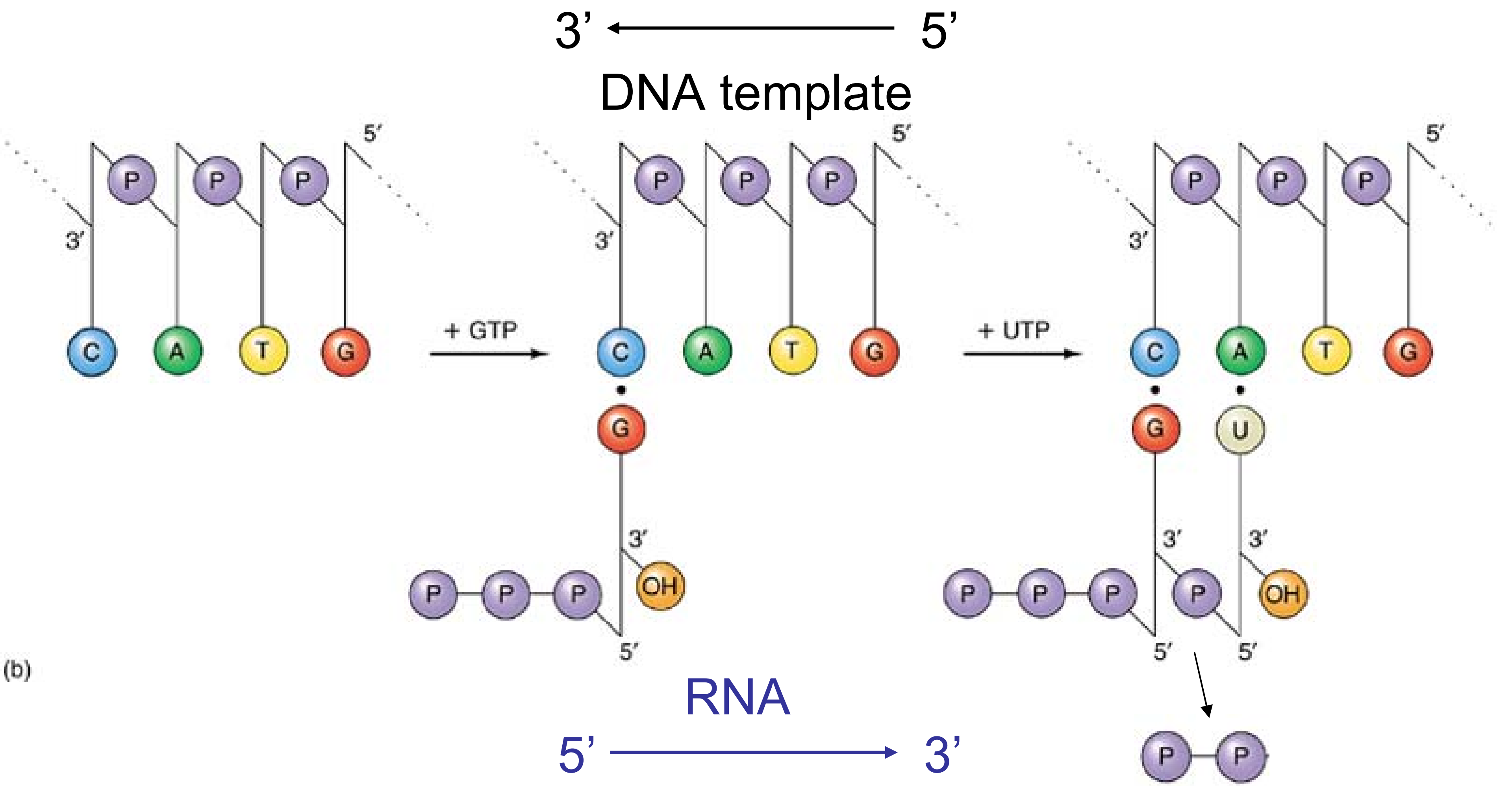
Enzymes in the central dogma



The process of transcription



The three steps of transcription: initiation, elongation and termination

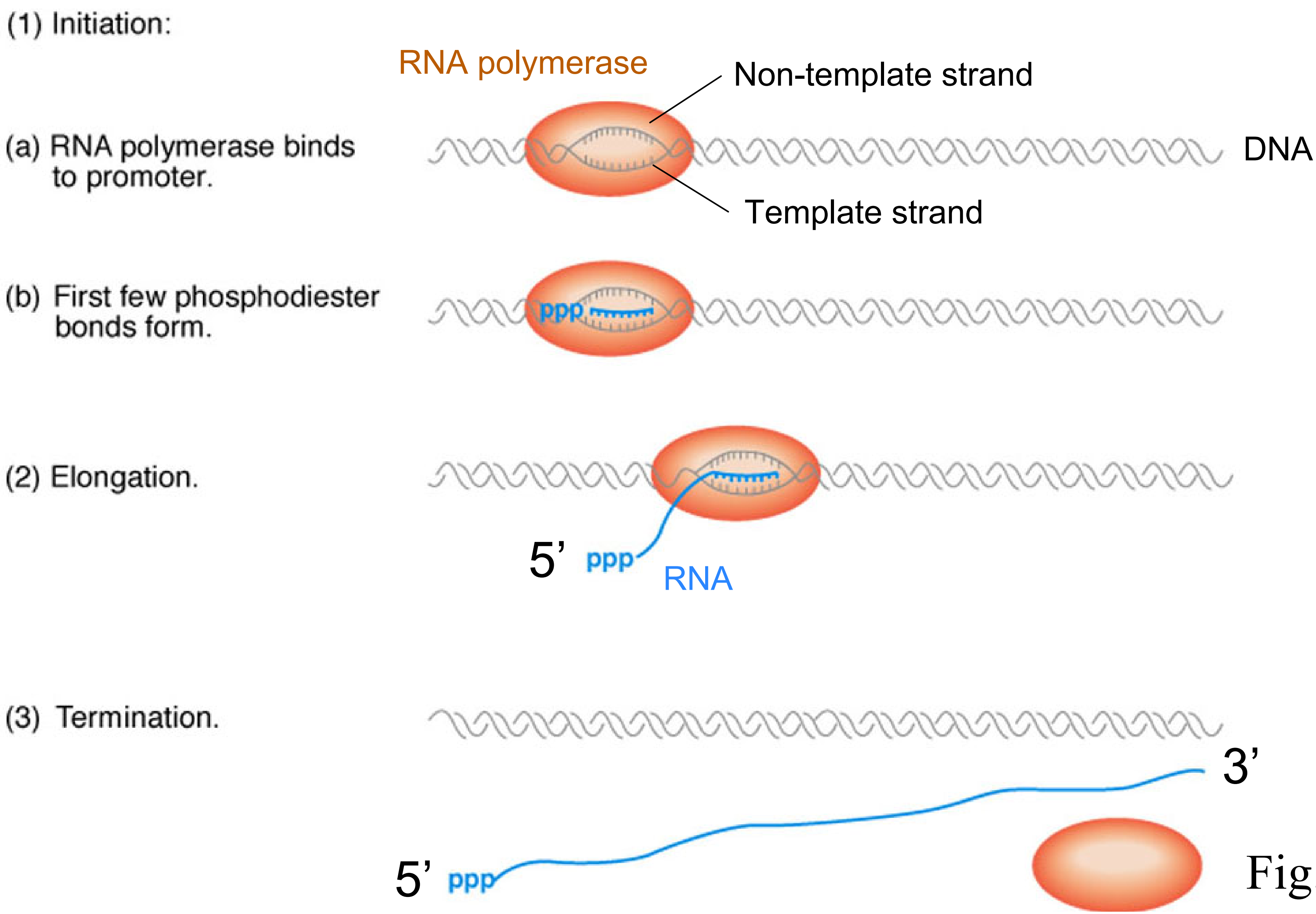


Fig. 3.14

E. coli promoter

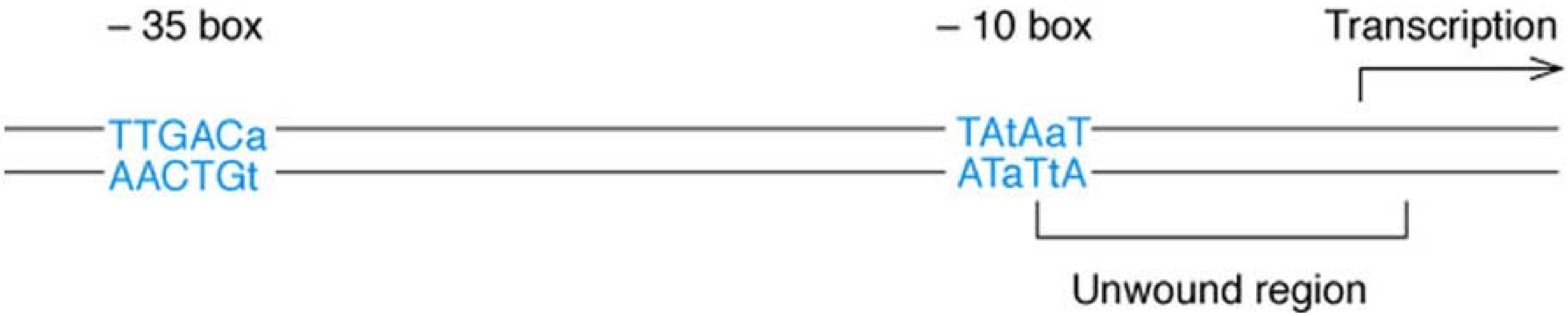
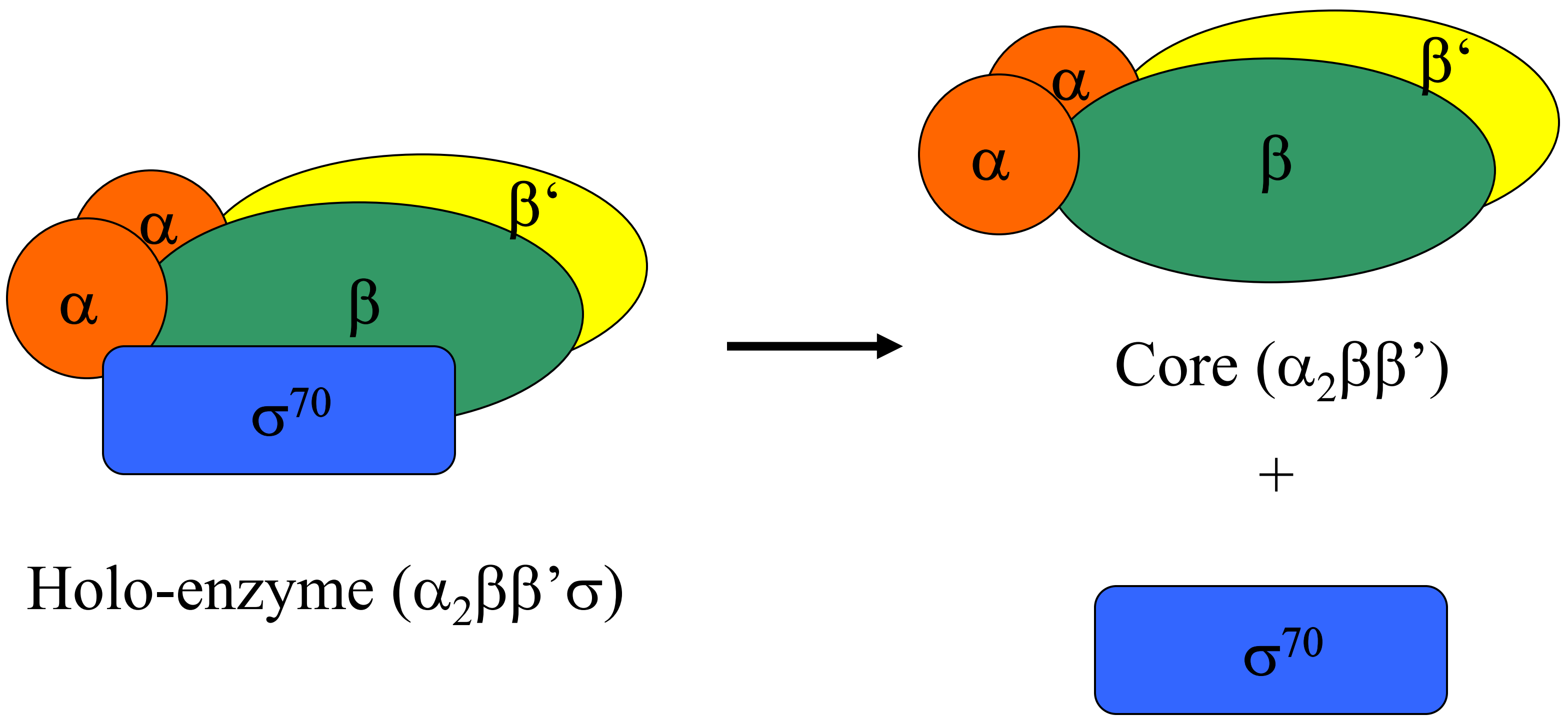


Fig. 6.6

- Clicker Question -

E. coli RNA polymerase



Sigma factor is needed for promoter binding

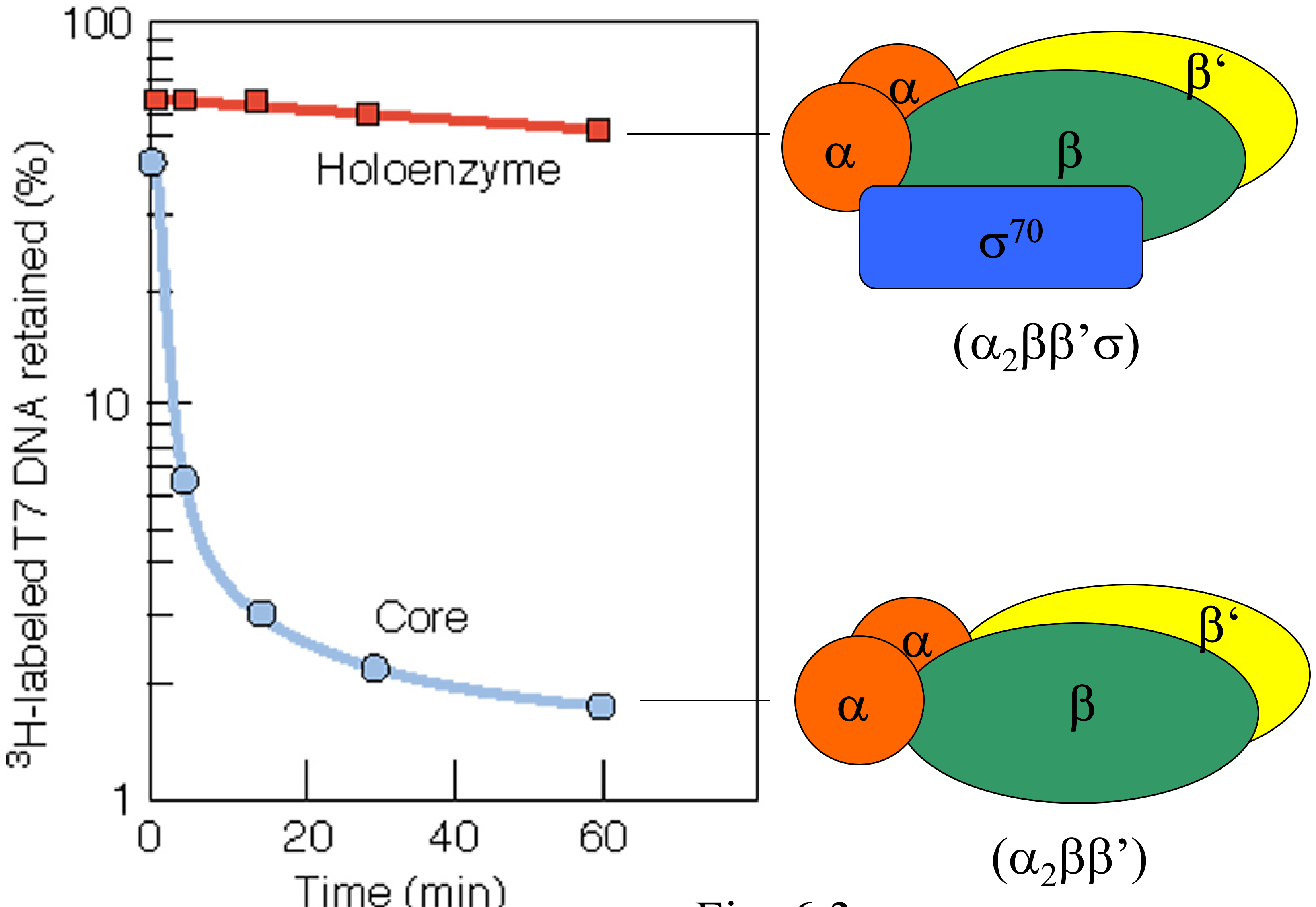
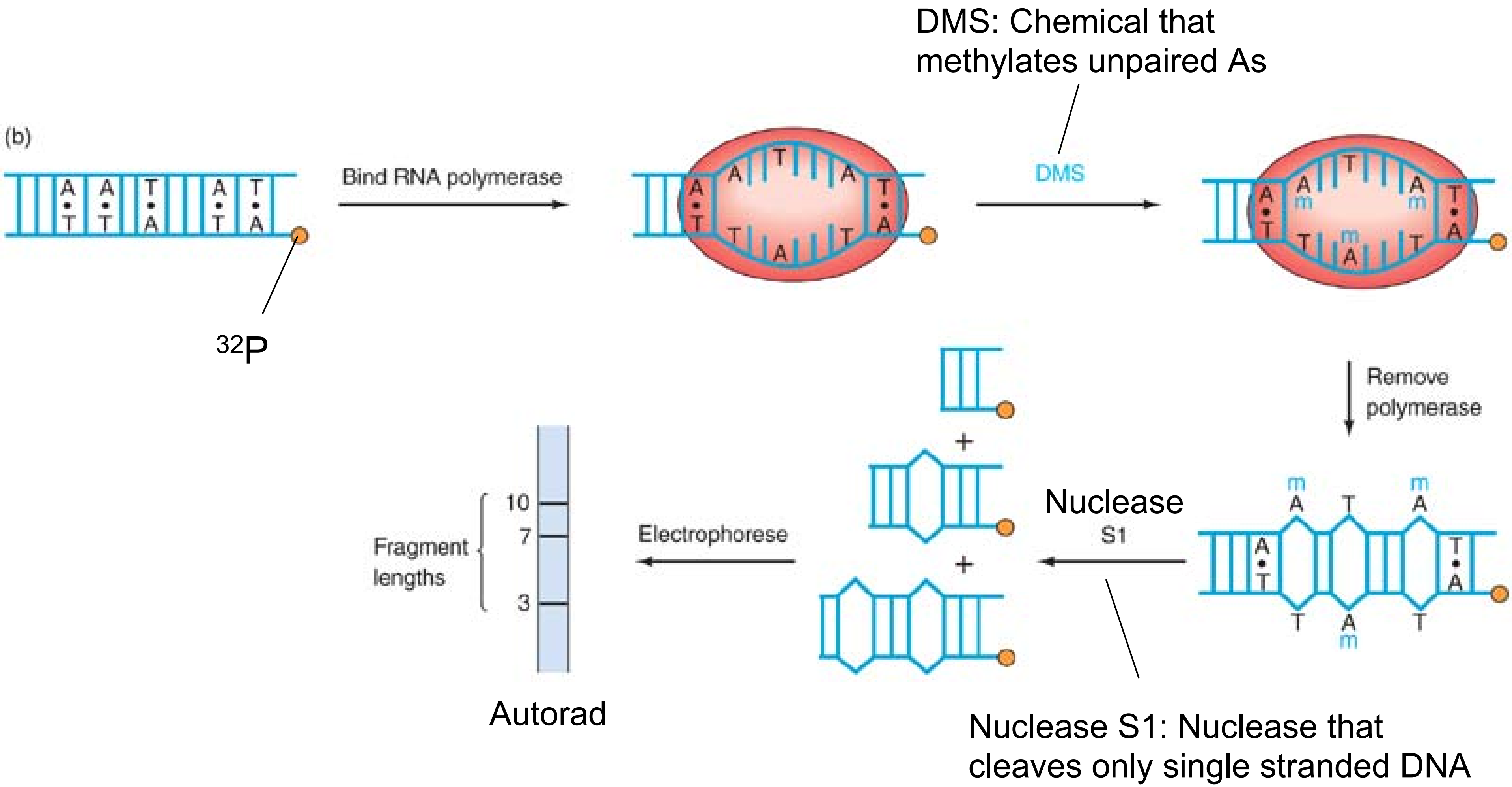


Fig. 6.3

Experiment to test whether the RNA polymerase melts the region around the transcription start site



Technique: see DNase/DMS footprinting (Weaver Ch. 5, p. 116-119)

Fig. 6.16

Evidence that the RNA polymerase melts the region around the transcription start site

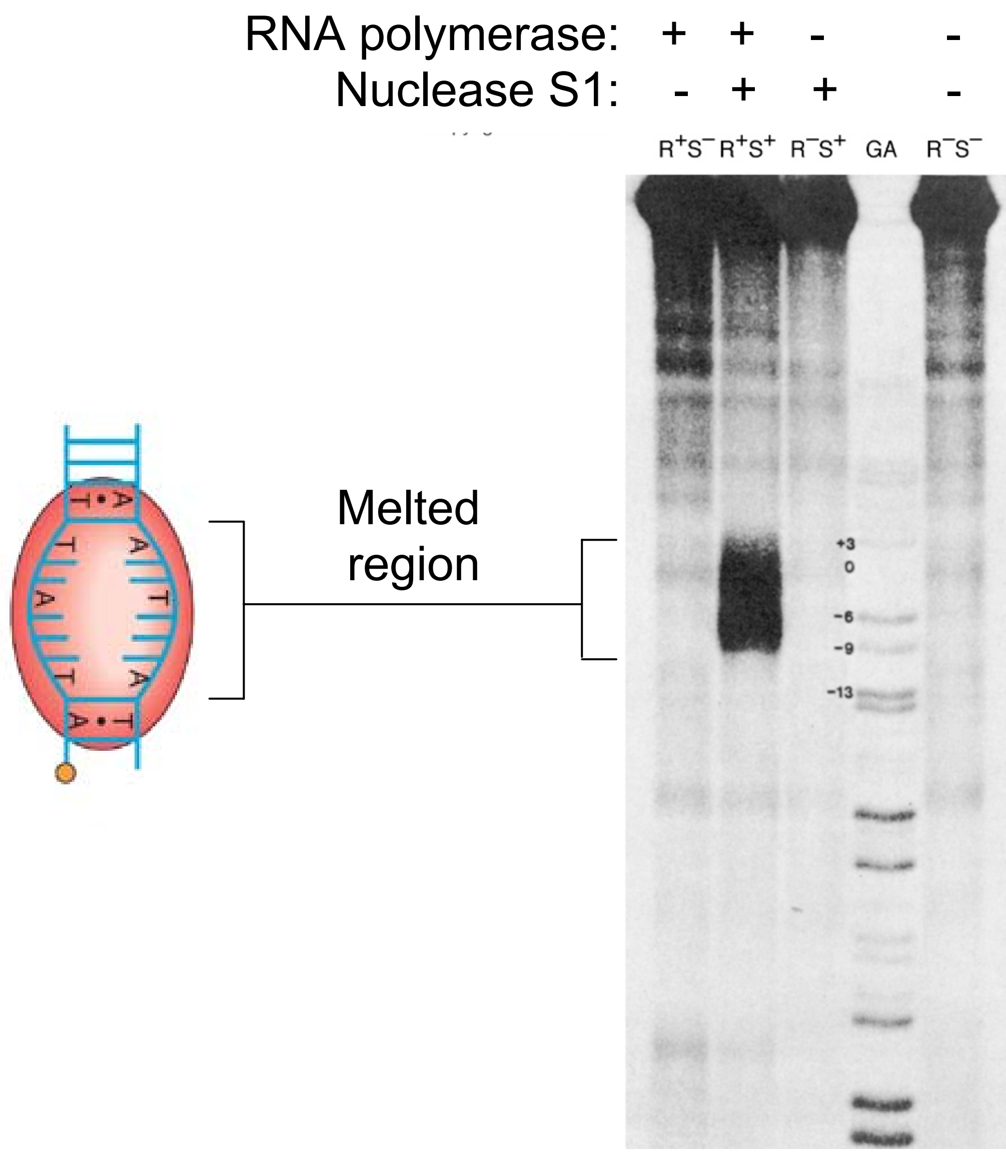
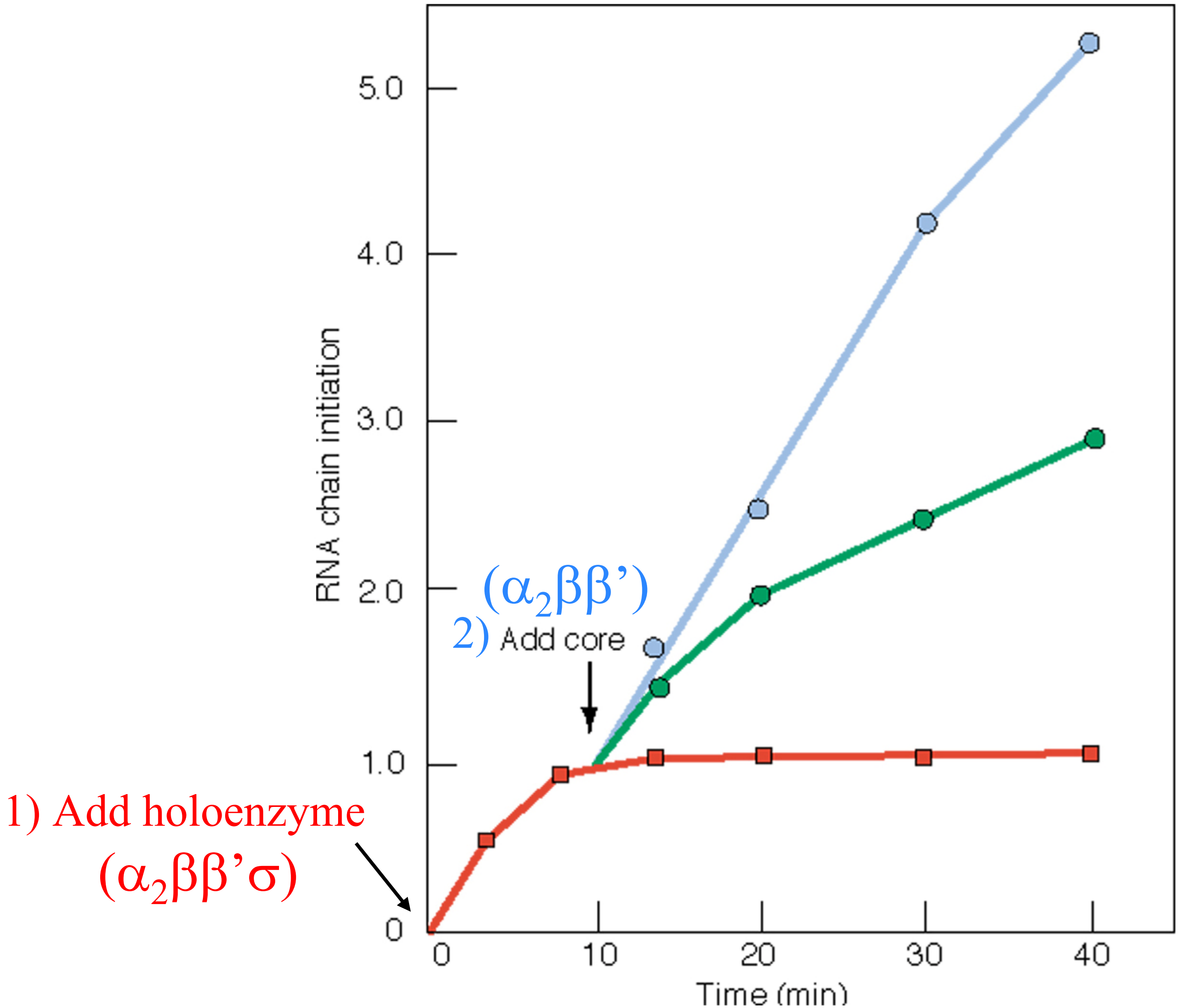


Fig. 6.17

- Clicker Question -

Evidence that the sigma subunit is reused



Incorporation of γ^{32}P-ATP/GTP

Fig. 6.11

Evidence that sigma stays bound during transcription elongation

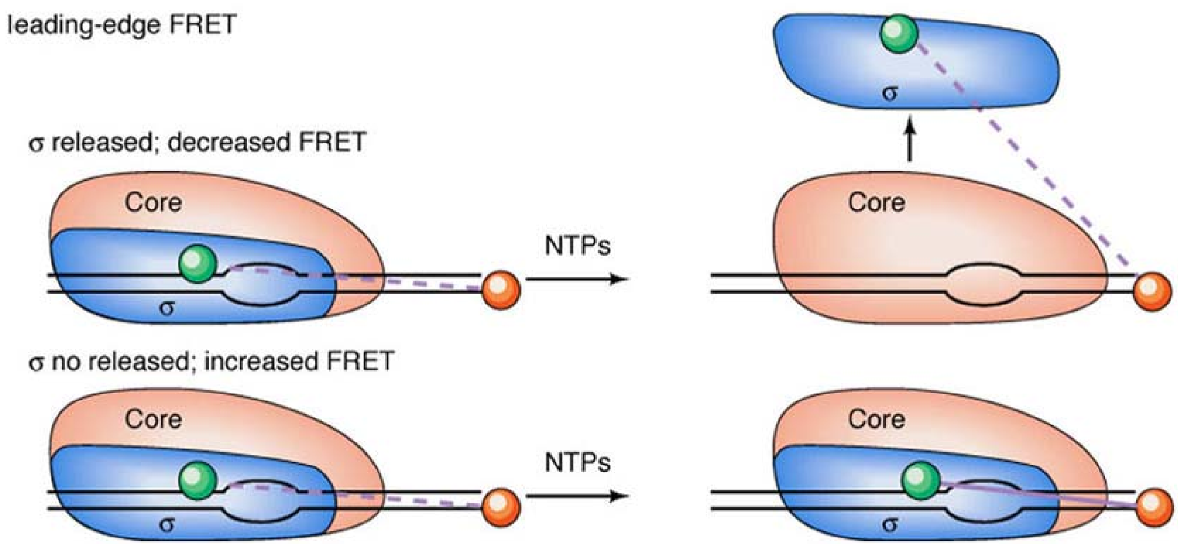


Fig. 6.13b

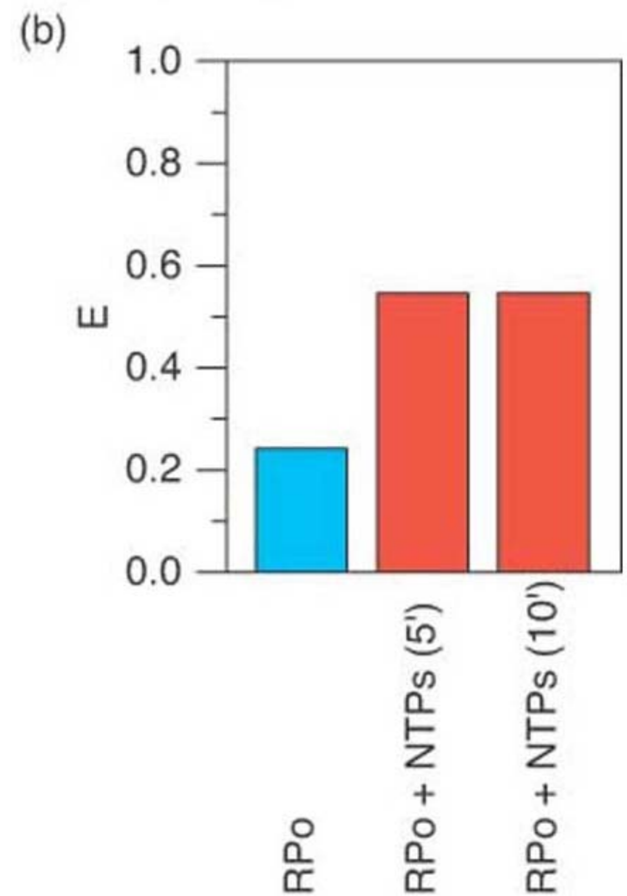


Fig. 6.14b

The steps of transcription initiation in bacteria

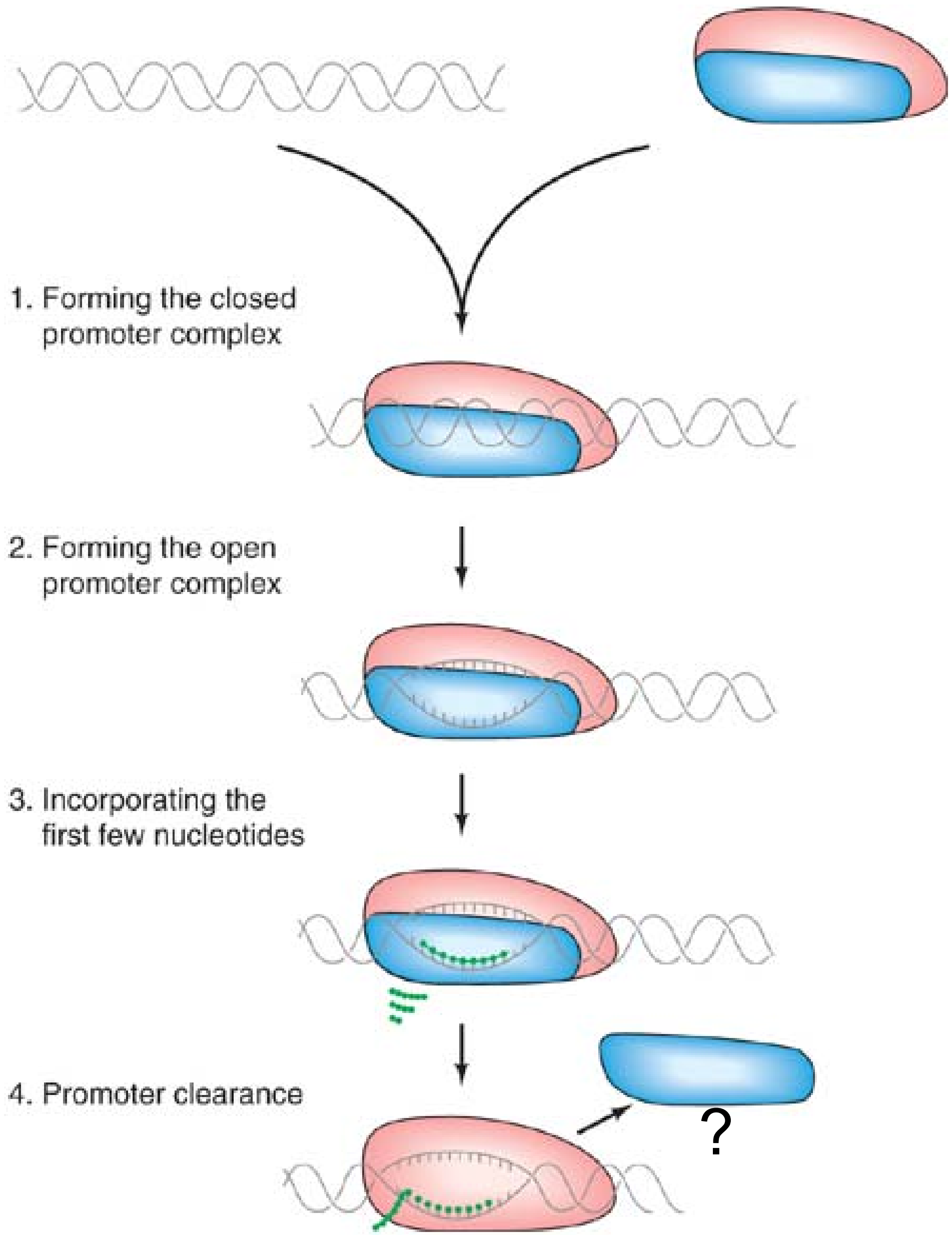


Fig. 6.9

The alpha subunit of RNA polymerase can bind upstream (UP) elements in strong promoters

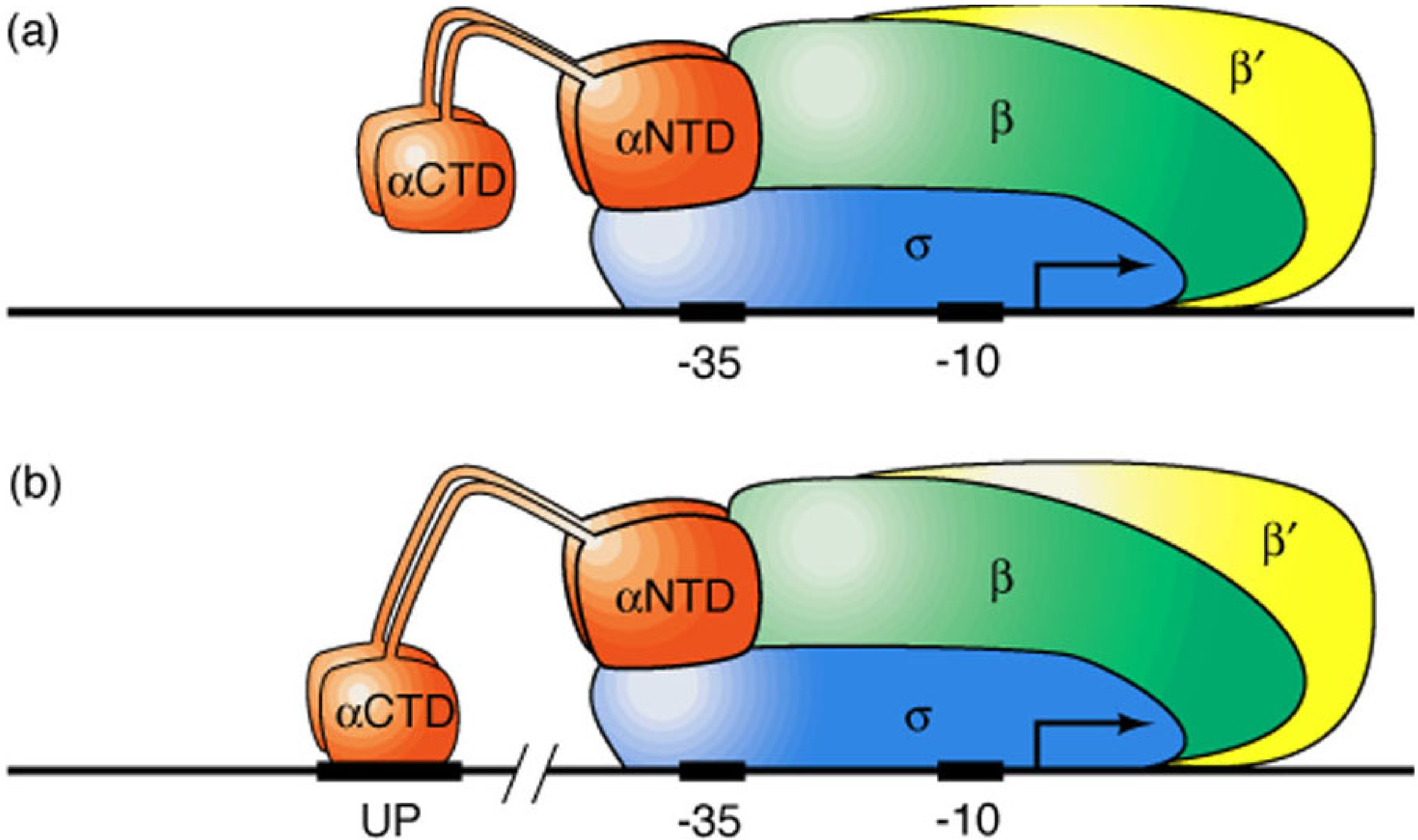


Fig. 6.26

Nucleotides cross-link to the RNA polymerase β subunit

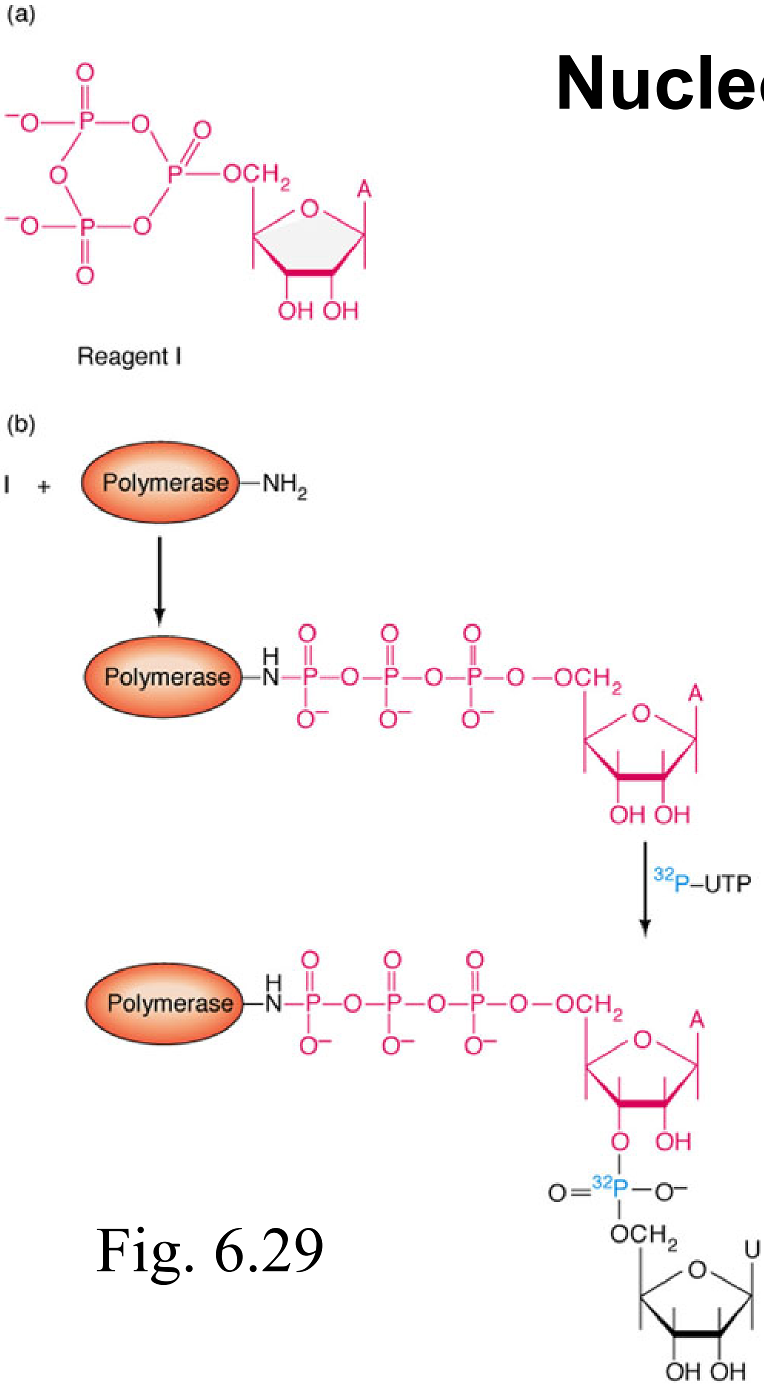


Fig. 6.29

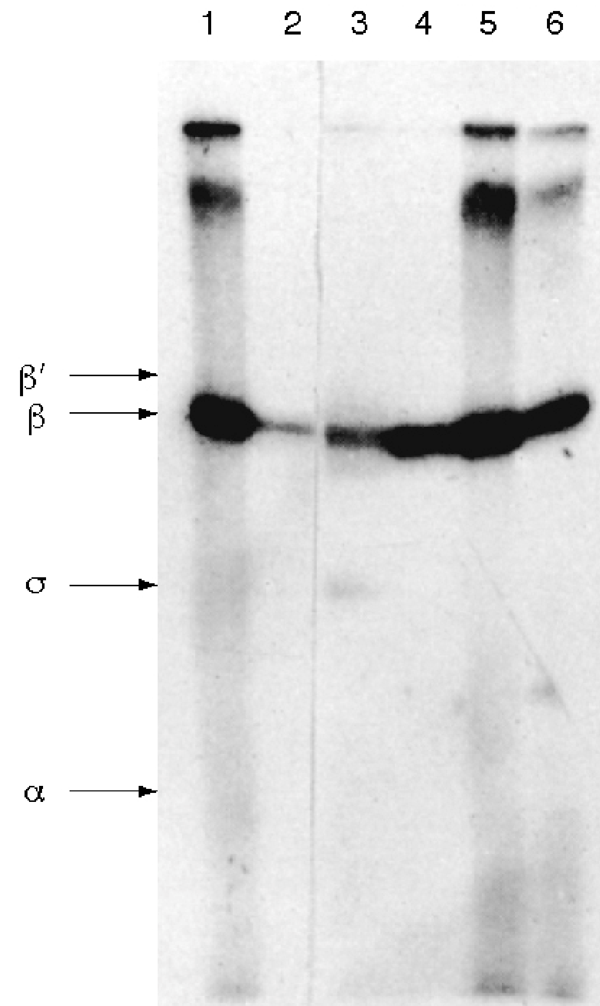


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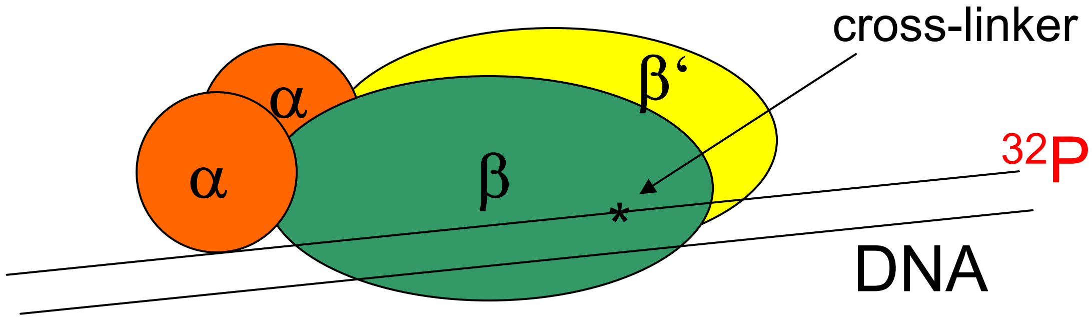
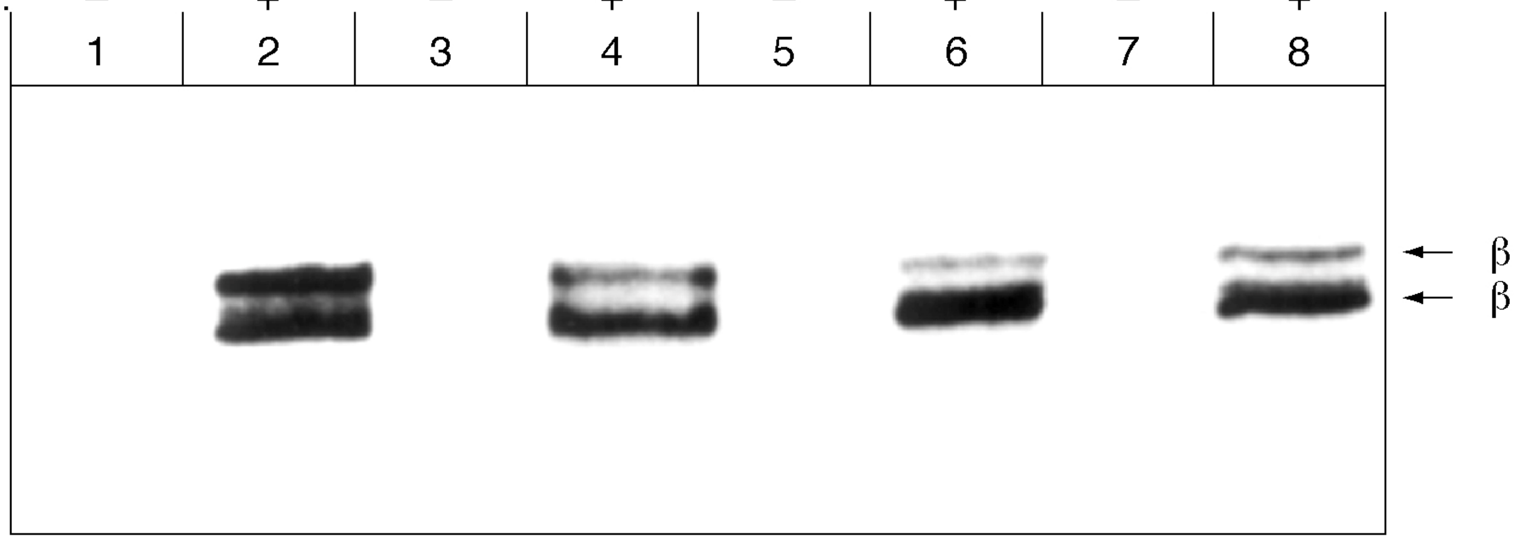
Fig. 6.30

Both β and β’ subunits interact with DNA during transcription



ss or ds DNA:	ds	ds	ss	ss	ds	ds	ds	ds
cross-link position:	+6	+6	+6	+6	+1	+1	–3	–3
chase:	–	+	–	+	–	+	–	+



(Source: Nudler et al., Transcription processivity: Protein-DNA interactions holding together the elongation complex. *Science* 273 (12 July 1996) f. 5c, p. 214. © AAAS.)

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Fig. 6.33

Model of the transition from closed (RPc) to open (RPo) promoter complex

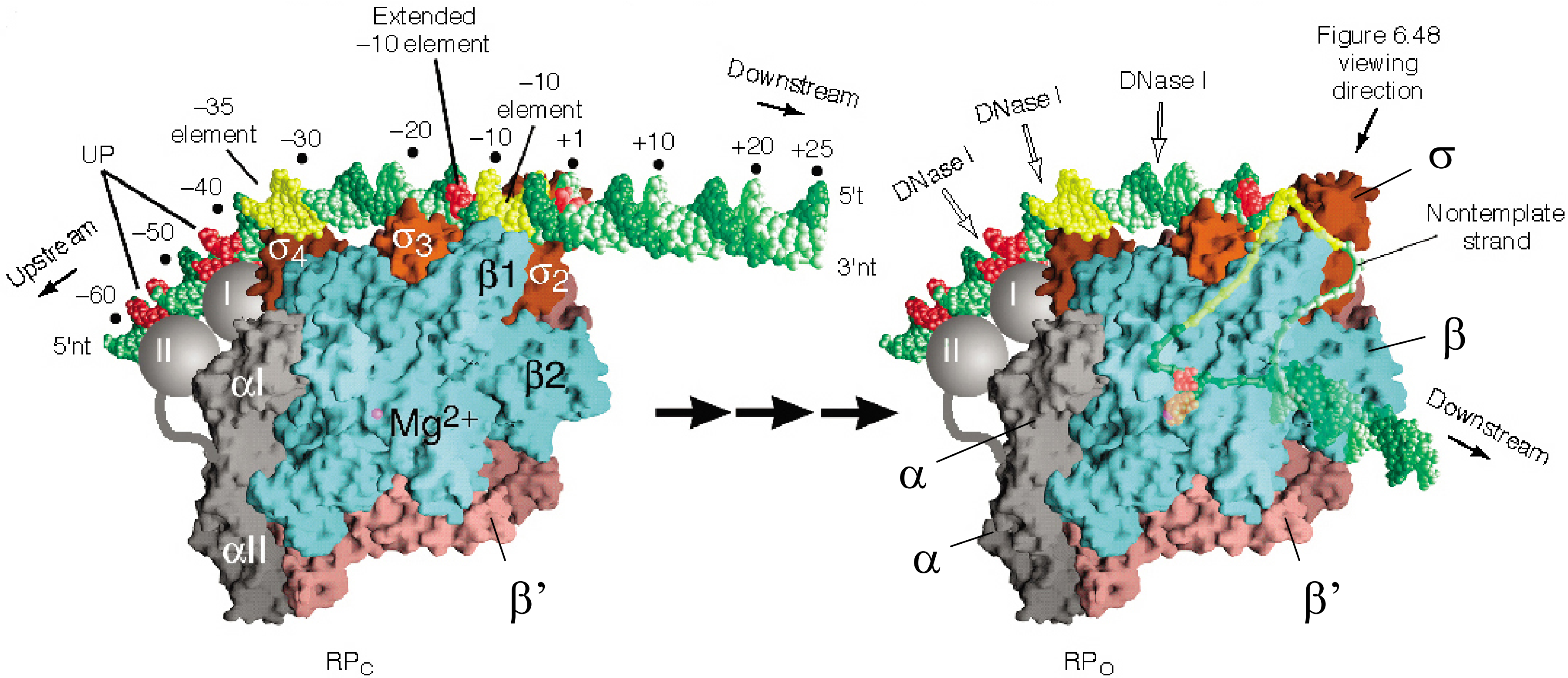


Fig. 6.43a

- Clicker Question -

- Clicker Question -

Model for Rho-independent (simple) transcription termination in bacteria

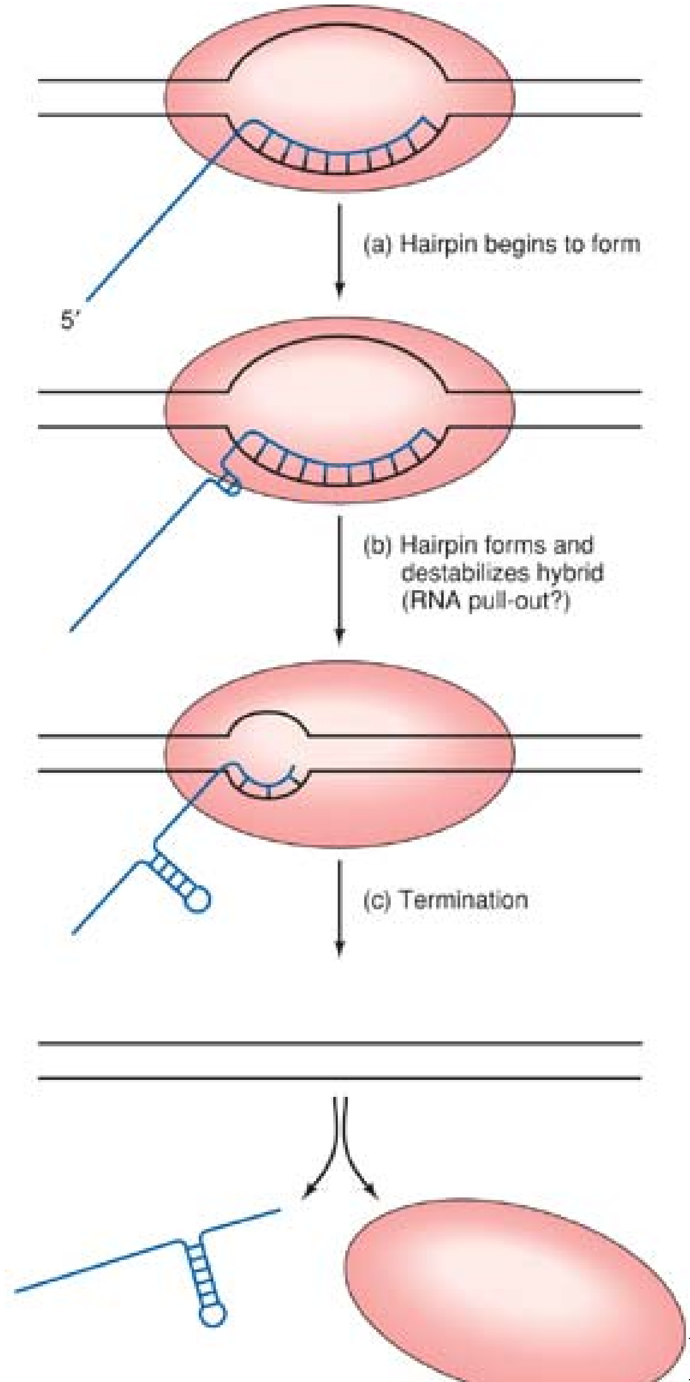
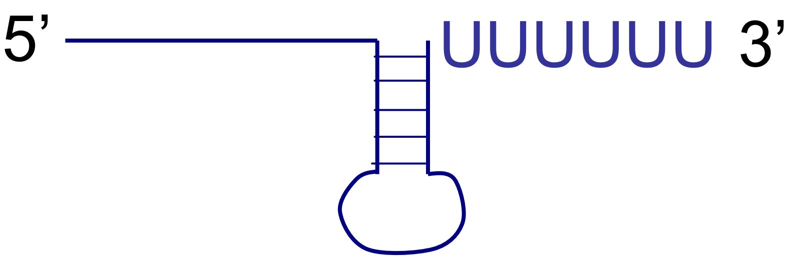
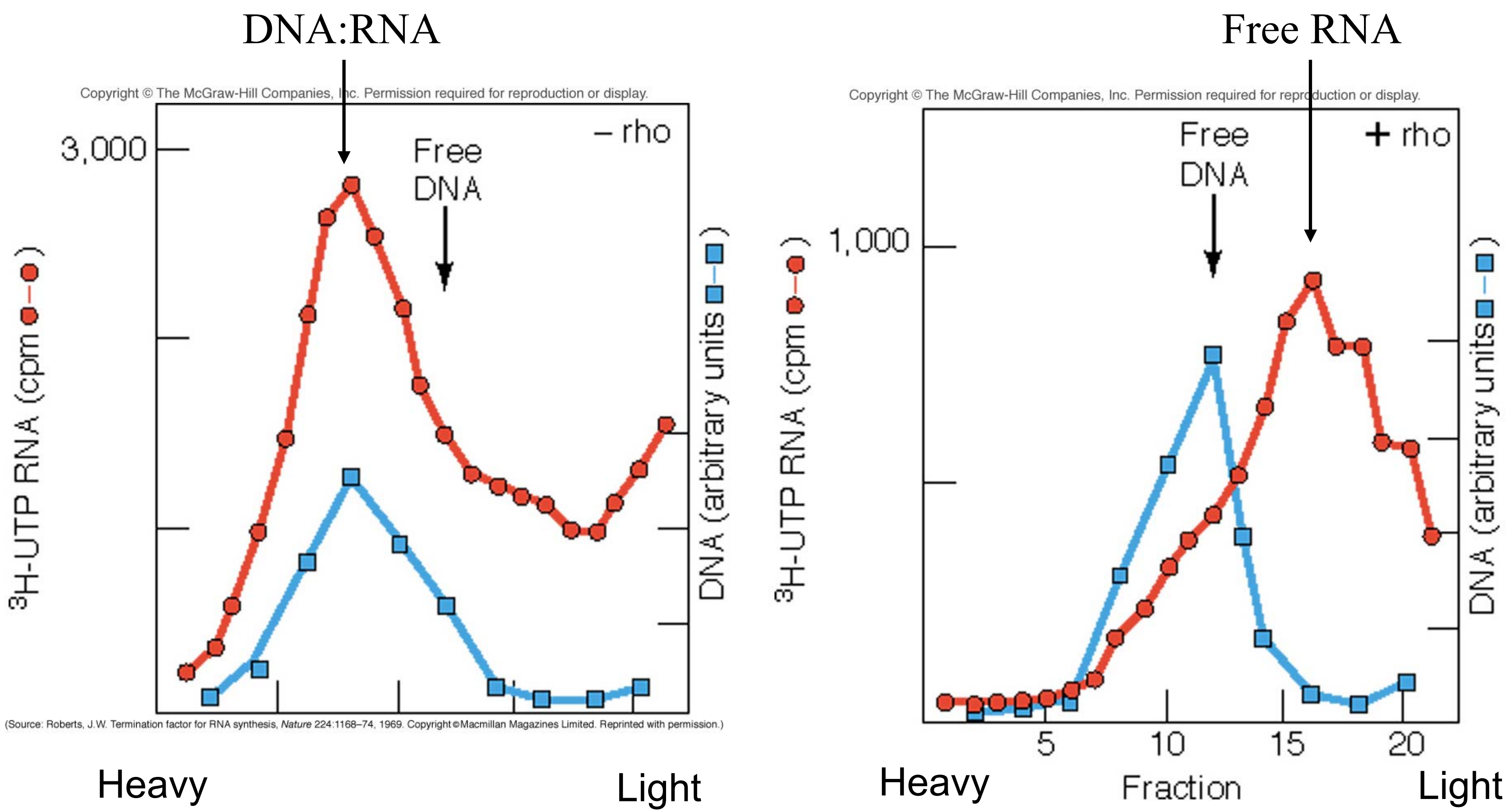


Fig. 6.46

RNA 3'end of simple terminator:



Some terminators depend on the protein Rho



DNA/RNA separated in CsCl density gradients

Fig. 6.50

Model for Rho-dependent transcription termination in bacteria

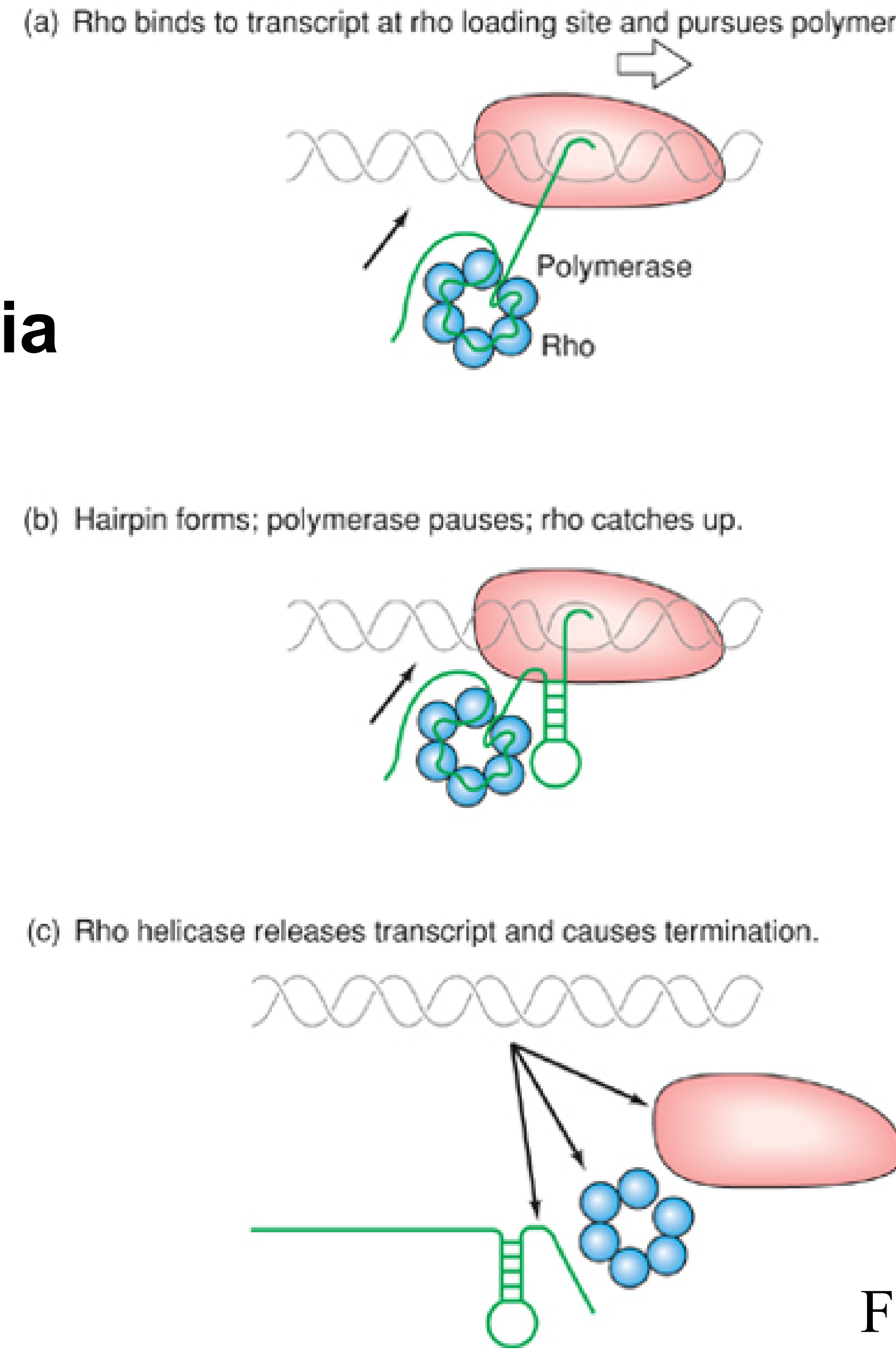


Fig. 6.51

- Clicker Question -