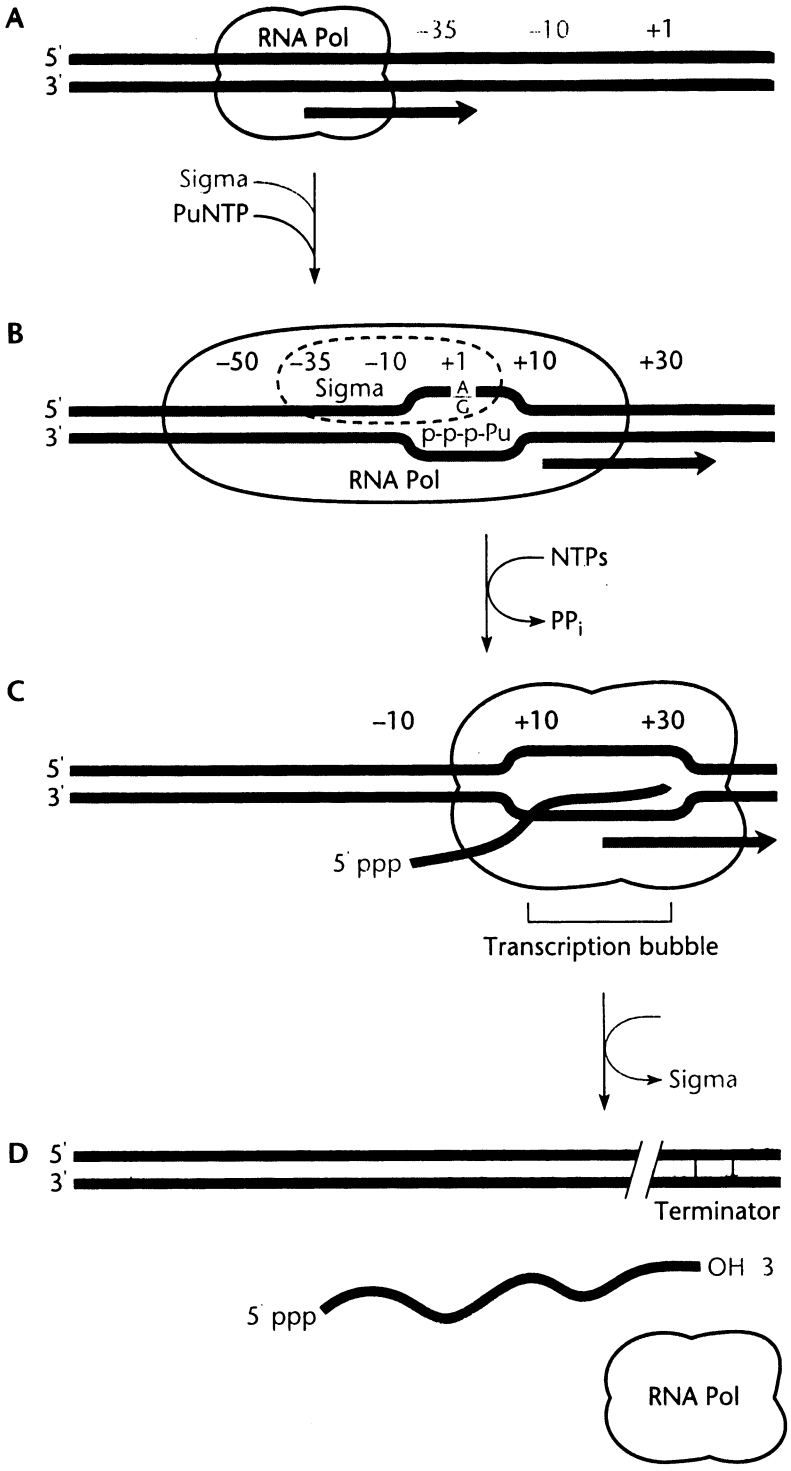

Figure 2.8 Transcription begins at a promoter and ends at a transcription terminator. (A and B) RNA polymerase (Pol) moves along the DNA until it recognizes a promoter. Transcription begins when the strands of DNA are opened at the promoter. (C) As the RNA polymerase moves along the DNA, polymerizing ribonucleotides, it forms a transcription bubble containing an RNA-DNA double-stranded hybrid, which helps hold the RNA polymerase on the DNA. The sigma factor is released. (D) The RNA polymerase encounters a transcription terminator and comes off the DNA, releasing the newly synthesized RNA.

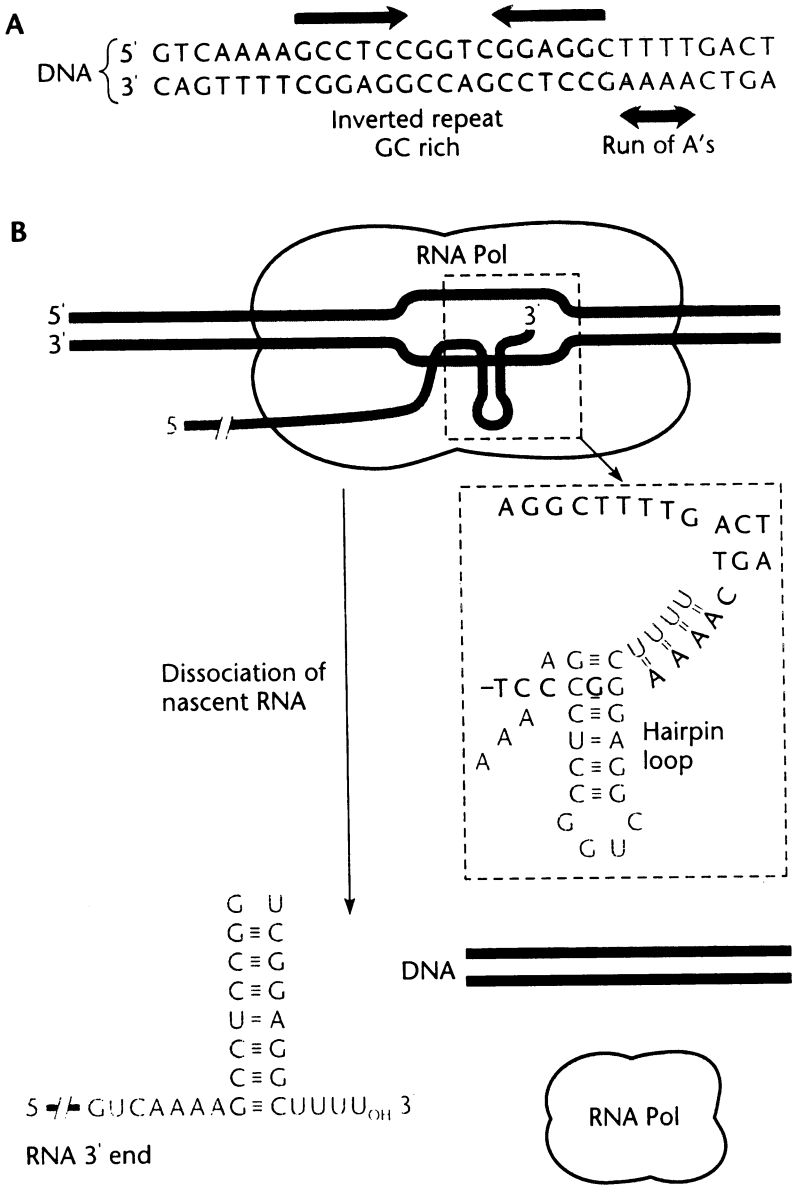

Figure 2.9 Transcription termination at a factor-independent termination site (A). (B) The RNA hairpin loop forms because the inverted repeat in the RNA is more stable than the DNA-RNA hybrid in the transcription bubble. Loss of the transcription bubble destabilizes the polymerase on the DNA, causing it to come off at a string of A's in the template.

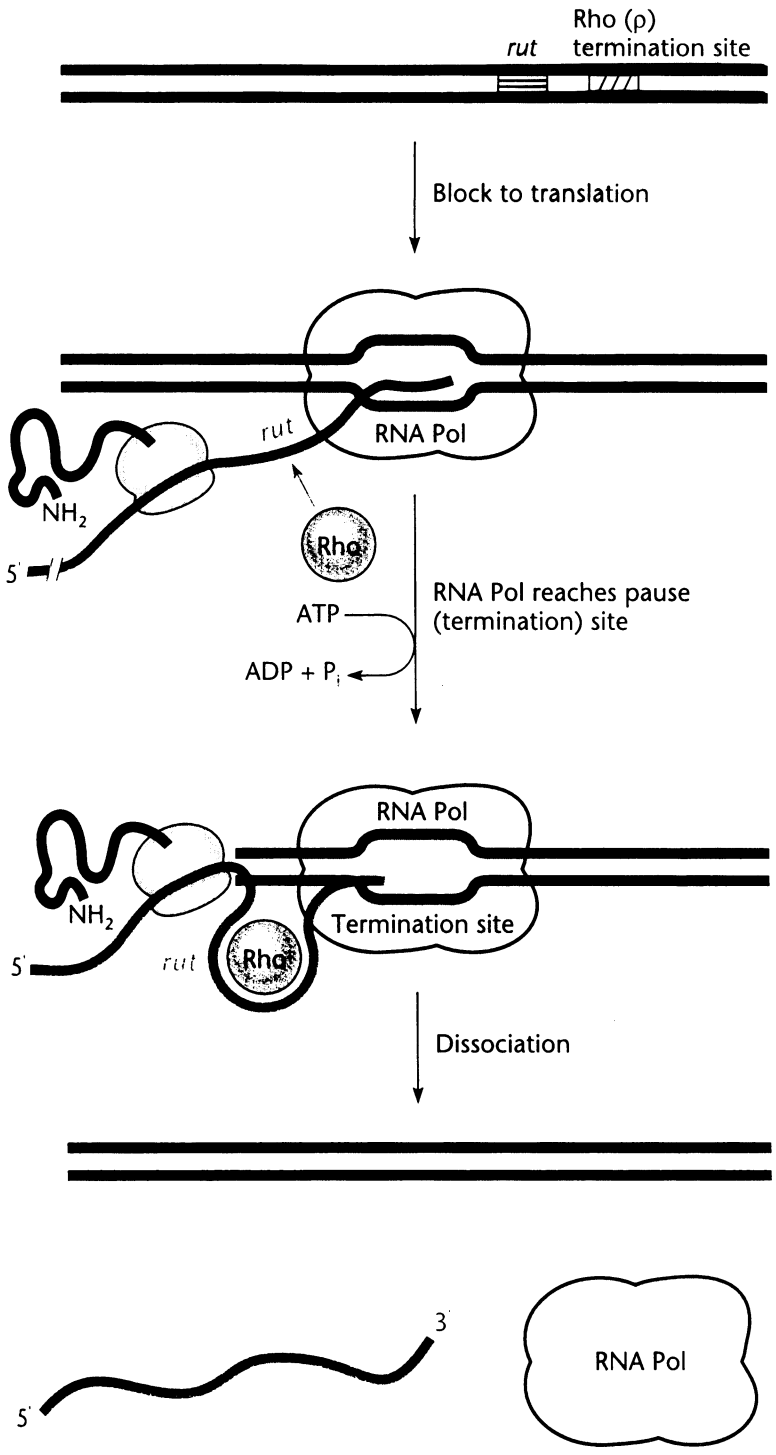

Figure 2.10 A model for factor-dependent transcription termination at a ρ termination site. The ρ-factor attaches to the mRNA at a *rut* site if the mRNA is not being translated and then chases the RNA polymerase along the mRNA until it catches up when the RNA polymerase pauses at a ρ-termination site. The ρ factor then dissociates the RNA-DNA hybrid in the transcription bubble, causing the RNA polymerase to come off the DNA.