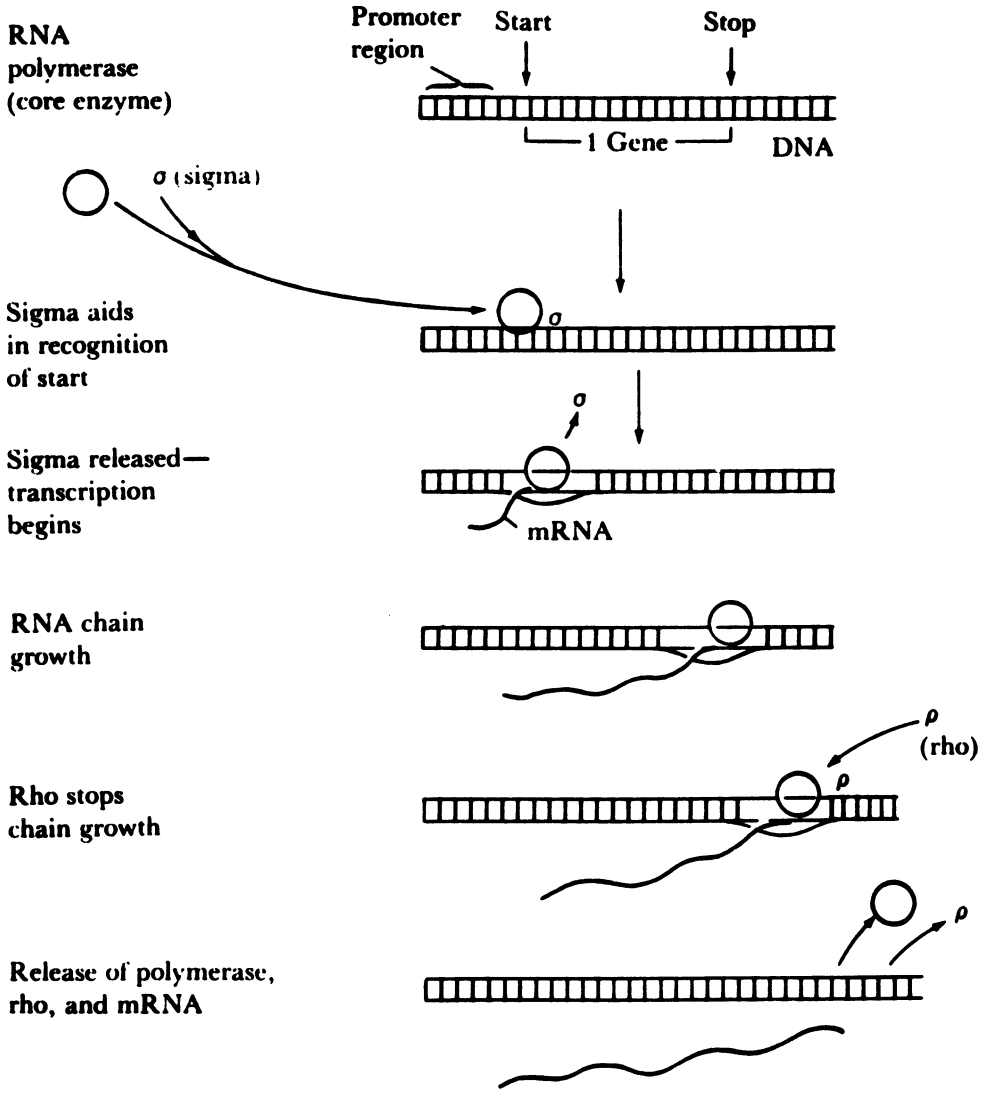

Figure 4.4. Steps in messenger RNA synthesis. The start and stop sites are specific nucleotide sequences on the DNA. RNA polymerase moves down the DNA chain, causing temporary opening of the double helix and transcription of one of the DNA strands. Rho binds to the termination site and stops chain growth; termination can also occur at some sites without rho. (With permission, from T. D. Brock, D. W. Smith, and M. T. Madigan, *Biology of Microorganisms*, 4th ed., Pearson Education, Upper Saddle River, NJ, 1984, p. 285.)

considerably more stable in cells from higher plants and animals). The student should consider for a moment why *m*-RNA is relatively unstable. The answer should become apparent as we discuss translation and regulation.

Although the general features of transcription are universal, there are some significant differences in transcription between procaryotic and eucaryotic cells. One example is