



regulation of transcription is a complex process that involves many different proteins and DNA sequences. The diagram shows how a strongly inhibiting protein can block a strongly activating assembly, preventing it from promoting transcription. The neutral assembly of regulatory proteins can also influence the process, but its effect is less direct. The spacer DNA region is important for the proper spacing of these proteins relative to the gene. The overall result is a finely tuned system that can respond to various signals and control gene expression in a precise manner.

synthesis of proteins that serve as regulators of gene transcription. This large number of genes reflects the exceedingly complex network of controls governing expression of mammalian genes. Each gene is regulated by a set of gene regulatory proteins; each of those proteins is the product of a gene that is in turn regulated by a whole set of other proteins, and so on. Moreover, the regulatory protein molecules are themselves influenced by signals from outside the cell,