

The bacterial cell must be able to rapidly change its gene expression to survive unstable external conditions. Transcription is the key level that affects gene expression. The pivotal enzyme of transcription is RNA polymerase (RNAP). Activity of RNAP is tightly regulated by transcription factors (TFs). These factors affect RNAP in different ways. This work presents an overview of various proteins and others factors, description of their effects on transcription and also mechanisms of their actions. TFs could be divided according to various criteria. In this work, TFs are divided according to how they interact with RNAP: TFs interacting only with RNAP; TFs binding simultaneously DNA and RNAP; TFs interacting with RNA and RNAP. This work presents a comprehensive overview of various TFs that are involved in the bacterial cell's reprogramming of gene expression that is required to withstand the changes in the environment.