

Antp transcriptional activity is modulated by the formation of the trimeric Antp-TBP complexes with TFIIIE β , Exd and BIP2

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Homeoproteins are transcriptional factors that bind to DNA through a highly conserved binding domain known as the homeodomain (HD) which recognizes short regions rich in A-T to control the development of the body appendages of organisms. However, their structural and recognition similarities make it difficult to explain how homeoproteins are capable of carrying out their function. Previous results have shown that Antp homeoprotein can establish dimeric interactions with TBP, TFIIIE β , Exd, BIP2 and more recently through BiFC-FRET we confirmed that Antp and TBP can form trimeric complexes with TFIIIE β /Exd/BIP2. Therefore, is important to show how these trimeric complexes modulate Antp transcriptional activity. The experimental approach selected for this project was to perform *in vitro* transactivation assays in HEK-293 cells transfected with the combinations of Antp and TBP-producing plasmids with TFIIIE β / Exd / BIP2 plasmids using a Luciferase reporter plasmid. Our results show that trimeric interaction of Antp-TBP-TFIIIE β induced a significant increase of 138% in the Antp transcriptional activity. By contrast, trimeric complexes of Antp-TBP-Exd and Antp-TBP-BIP2 modified the transactivating capacity of Antp, decreasing transcription by 20 and 26% respectively. According to this, we were able to confirm that the trimeric complexes Antp-TBP/TFIIIE β /Exd/BIP2 are involved in the modulation of Antp transcriptional activity. So, now it is interesting to analyze how these trimeric complexes are involved in the activation and/or repression of target genes of Antp during genetic control of development in *Drosophila melanogaster*.