

In-Vivo Association of Multivalent 11 Zinc Fingers Transcriptional Factors CTCF and Boris to YB-1 in Multiforme Glioma-RGBM Cell Line

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Abstract : CTCF is a unique, highly conserved and ubiquitously expressed 11 zinc finger (ZF) transcriptional factor with multiple target sites. It is able to bind to various target sequences to perform different regulatory roles including promoter activation or repression, creating hormone-responsive gene silencing element, and functional block of enhancer-promoter interactions. The binding of CTCF to the essential binding site is through the combination of different ZF domain. On the other hand, BORIS for brother of the regulator of imprinted sites, which expressed only in the testis and certain cancer cell line is homology to CTCF 11 ZF domains. Since both transcriptional factors share the same ZF domains hence there is a possibility for both to bind to the same target sequences. In this study, the interaction of these two proteins to multi-functional Y-box DNA/RNA-binding factor, YB-1 was determined. The protein-protein interaction between CTCF/YB-1 and BORIS/YB-1 were discovered by Co-immuno-precipitation (CO-IP) technique through reciprocal experiment from RGBM total cell lysate. The results showed that both CTCF and BORIS were able to interact with YB-1 in Glioma RGBM cell line. To the best of our knowledge, this is the first findings demonstrating the ability of BORIS and YB-1 to form a complex in vivo.

Keywords : immunoprecipitation, CTCF/BORIS/YB-1, transcription factor, molecular medicine

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