B20

Molecular Characterization of the Promoter and Structure of Complete Sequence of the Gene Coding for the Silkworm Translationally Controlled Tumor Protein (P23/TCTP)

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We have identified a cDNA encoding the silkworm translationallly controlled tumor protein (TCTP P23) on the basis of the partial cDNA sequences registered in a *Bombyx mori* EST database. TCTP is also known as a histamine-releasing factor (HRF). The deduced amino acid sequence with 173 residues was 79 and 49% identical to those from *Drosophila melanogaster* TCTP and human TCTP/P23, respectively. The gene is organized into two introns and three exons and its total nucleotide length was 4256. Expression analysis by reverse transcription polymerase chain reaction demonstrated that the mRNA transcription occurred in all tissues examined as expected by its ubiquitous distribution on the silkworm EST database. The cloned genomic DNA fragment contained 1.9kb of 5'-flanking promoter region. The promoter contains several canonical transcription elements such as GATA box, AP1 and CCAAT motif, although there is no obvious TATA box element. Deletion analysis of the promoter regions of the BmTCTP gene, fused to the firefly luciferase coding sequence as a reporter, revealed that the construct (-1,513/+52) showed the highest promoter activity, and the regions (-102/-58) and (-173/-102) contained a basal transcription element and repressors, respectively. In order to understand the celluar function of BmTCTP, we are analyzing the effects of overexpression of TCTP using BmN4 cell line.