Wheat TFIID TATA binding protein

Victoria Apsit†, John A. Freeberg, Michael R. Chase, Elizabeth A. Davis and Steven Ackerman*
Biology Department, University of Massachusetts – Boston, 100 Morrissey Blvd, Boston, MA 02125, USA

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Using the cDNA clone for yeast TATA binding protein (TBP) (1) we have isolated a cDNA coding for wheat TBP from a wheat seedling cDNA library. Wheat TBP is 201 amino acids (wh, Figure 1). Comparison to other plant TBPs (Figure 1) indicates short, and moderately conserved, amino terminal domains. Dictyostelium also has a short amino domain, but it diverges from those of plants. In contrast the carboxy domains of all TBPs are highly conserved (Figure 1). We have not detected additional wheat TBP cDNA clones using wheat and yeast cDNAs as probes. PCR analysis of wheat genomic DNA using a primer overlapping the wheat TBP translation start site and a primer complementary to and overlapping the translation stop signal produced a single band of the expected size. Product that might be generated by a larger coding sequence or by introns was not observed using high or low stringency RAPIDS PCR. Probing a Southern blot of total PCR product demonstrated hybridization to only the single observed band, the PCR product. This result indicates that introns are not present, nor is there an additional translation product. Another report of a wheat TBP cDNA clone (2) indicated an additional 32 amino terminal residues (wh??, Figure 1). This larger product was not evident in our PCR results. From an evolutionary perspective (PHYLIP parsimonious program for phylogenetic trees) these extra 32 residues would place the large wheat sequence on a more divergent evolutionary branch, closer to Dictyostelium than to other plants.

The EMBL accession number for the DNA and translation sequences is Z1804; the GenBank accession number is L07604.

REFERENCES


* To whom correspondence should be addressed
† Present address: Botany Department, University of Georgia, Athens, GA 30602, USA
‡ EMBL: Z18804; GenBank: L07604