The human TTP protein: sequence, alignment with related proteins, and chromosomal localization of the mouse and human genes

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The mouse tristetraprolin (TTP) protein is a basic proline-rich protein of Mr 33,600 that contains three PPPPG repeats (1). Its mRNA levels increase dramatically after stimulation with various mitogens. Also called Nup 475 (2) and TISII (3), it has been localized to the cell nucleus and is thought to contain an unusual zinc-finger structure (2). A distinct protein (cMGl) with an analogous zinc-finger structure was cloned recently (4). We report here the sequence of human TTP, which is 87% identical to the mouse protein; the putative zinc-finger structure is conserved among human and mouse TTP and rat cMGl (Figure 1).

The human gene encoding TTP was localized to chromosome 19 using panels of rodent/human hybrid cell lines (5, 6). The mouse gene was localized to chromosome 7 using an interspecific cross; in 114 out of 114 meiotic events, it cosegregated with the D19F11S1 locus, which maps approximately 6.0 cM from the proximal end of mouse chromosome 7 (7). This is in the middle of a linkage group conserved with a segment of human chromosome 19 (7); the mouse mapping suggests that the human gene is at band q13.1 on human chromosome 19. This was confirmed by in situ hybridization of the human cDNA probe to metaphase chromosome spreads.

In recognition of its probable zinc-finger structure (2), the gene encoding the mouse TTP protein has been labeled Zfp-36 by the Committee on Standardized Genetic Nomenclature for Mice. The human gene is ZFP36.

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REFERENCES