

Abstract

P elements, a well-studied DNA transposon in *Drosophila* is predicted to be domesticated in vertebrates such as human, zebrafish and chicken. The P-element transposase protein also known as THAP9 is known to express in certain human and zebrafish tissues. However, the functional importance of THAP9 is not known. The previously cloned full length ZfTHAP9 and human THAP9 transcript variant X4 were successfully expressed in bacterial cells and purified using chromatography techniques. The purified proteins were analyzed for transposability. The ZfTHAP9 protein-but not the human THAP9 X4 variant, showed significant transposition. Attempts were made to clone ZfTHAP9 with carboxy-terminal V5 and FLAG tags in pcDNA3.1(+) and human THAP9 in pET28a(+). A separate study was carried out to investigate the role of different stress conditions such as oxidative stress, osmotic stress and starvation on the mRNA expression pattern of human THAP9 in fibroblast and HEK293T cells.