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A repetitive DNA element, associated with telomeric sequences in Drosophila melanogaster, contains open reading frames.

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Abstract.
He-T sequences are a complex repetitive family of DNA sequences in Drosophila that are associated with telomeric regions, pericentromeric heterochromatin, and the Y chromosome. A component of the He-T family containing open reading frames (ORFs) is described. These ORF-containing elements within the He-T family are designated T-elements, since hybridization in situ with the polytene salivary gland chromosomes results in detectable signal exclusively at the chromosome tips. One T-element that has been sequenced includes ORFs of 1,428 and 1,614 bp. The ORFs are overlapping but one nucleotide out of frame with respect to each other. The longer ORF contains cysteine-histidine motifs strongly resembling nucleic acid binding domains of gag-like proteins, and the overall organization of the T-element ORFs is reminiscent of LINE elements. The T-elements are transcribed and appear to be conserved in Drosophila species related to D. melanogaster. The results suggest that T-elements may play a role in the structure and/or function of telomeres.