

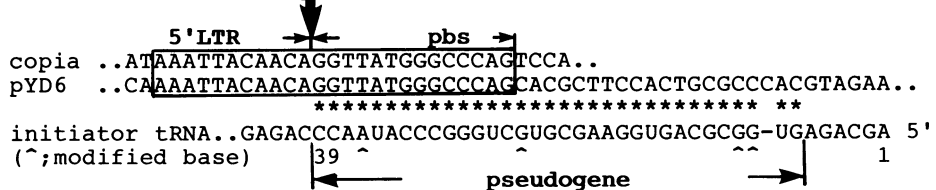
**A *copia* primer pseudogene possibly generated by an aberrant reverse transcription of a *copia*-related element in *Drosophila***

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A tRNA pseudogene homologous to the 5'half of an initiator tRNA has been found in *Drosophila* and is shown to be contained in a 1.15kb EcoRI/BamHI fragment (pYD6) having the characteristics of dispersed repetitive DNA(1). A comparison was made of the nucleotide sequence of this DNA with those of various *Drosophila* repetitive DNAs. A box in Figure shows the pYD6 sequence to have a perfect homology with a 25bp segment of *copia*, which includes both the 3'end of 5'LTR and the putative primer binding site(pbs)(2). In regard to this homology, it is unusual that one end of the psuedogene, corresponding to the nucleotide co-ordinate of tRNA of 39, is joined directly to the 3' terminal sequence of *copia* and hence all and only the nucleotide sequence of *copia* pbs is included in the pseudogene (see a vertical arrowhead). Since Kikuchi et al. (3) recently showed that the 5'half (1-39 nucleotides) of the initiator methionine tRNA can function as a primer for reverse transcription of *copia* RNA in VLP(2), the initiator tRNA pseudogene in pYD6 is suggested to be a derivative of a reverse transcript of *copia* primer RNA. It is the author's opinion that the unusual association of the 3'end of *copia* and its primer sequence and hence pseudogene generation resulted from aberrant reverse transcription of a *copia*-related element, in which nearly all the region of primer RNA (5'half molecule of an initiator tRNA) is used as a template and replicated, as has been suggested in the case of production of an unusual circular retroviral DNA having a tRNA gene between two LTRs(4).



**References**

(1)Sharp,A. et al.(1981) Nucl.Acids Res.9,5867-5882. (2)Emori,Y. et al(1985) Nature 316,773-776.(3)Kikuchi,Y. et al. Nature in press.(4)Colicelli,J. and Goff,S.P.(1986) J.Viol.57,674-677.