F816 Structure and Expression of Murine Poly(A) Binding Protein II Gene

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A genomic DNA clone and cDNA clones encoding murine poly(A) binding protein II (mPAB II), a component of the mammalian 3'-end processing machinery, were isolated in this study. The overall structure of mPAB II consists of an acidic N-terminal domain, an RNA-binding domain in the middle, and a basic C-terminal domain. Genomic structure of the mPAB II gene including the exon-intron arrangement shows significant homology with that of bovine PAB II. Southern blot analysis shows that the mPAB II gene has pseudogenes or related genes in mouse genome. Two mPAB II transcripts, 3.6 kb and 2.1 kb, are present in all tissues. An additional 1.4 kb transcript which is generated by differential polyadenylation is most abundantly produced in a testis-specific manner. The excessive exprssion of the mPAB II gene in testis, particularly in round spermatids, is related to the synthesis and the accumulation of all the mRNAs necessary for spermiogenesis.

F817 Genetic Characteristics of the UV-sensitive Mutants of *Drosophila melanogaster*

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For the purpose of identifying DNA repair-related genes in *D. melanogaster*, a wide variety of mutants have been produced by use of P-element. Of them 4 UV-sensitive lines have been selected through a set of screening methods. Several kinds of genetic studies involving UV-sensitivity tests, recombination frequency analyses(female), and insertion site determination by molecular techniques related as well as male recombination tests(MRT), have been performed. These lines (called PUS lines) showed somewhat different recombination rates from those of the normal lines which do not have P-element inserted. Moreover, chromosome walking using the very P-tagged genes is being carried out. The results so far obtained are as follows: the insertion sites of P in each PUS line are 3rd chromosome(PUS #25, #248), and X-chromosome(#92, #181). The relative UV-sensitivity of each line is 0.734(#25), 0.780(#92), 0.860(#181), and 0.611(#248), respectively. Especially, one of the intriguing features of PUS #25 is that its male recombination has occurred(approximately 0.14%). In addition, recombination rates(female) obtained were somewhat higher than those of the control groups, by 7.1% (#25), 3.46%(#92), and 6.09%(#181), respectively.