

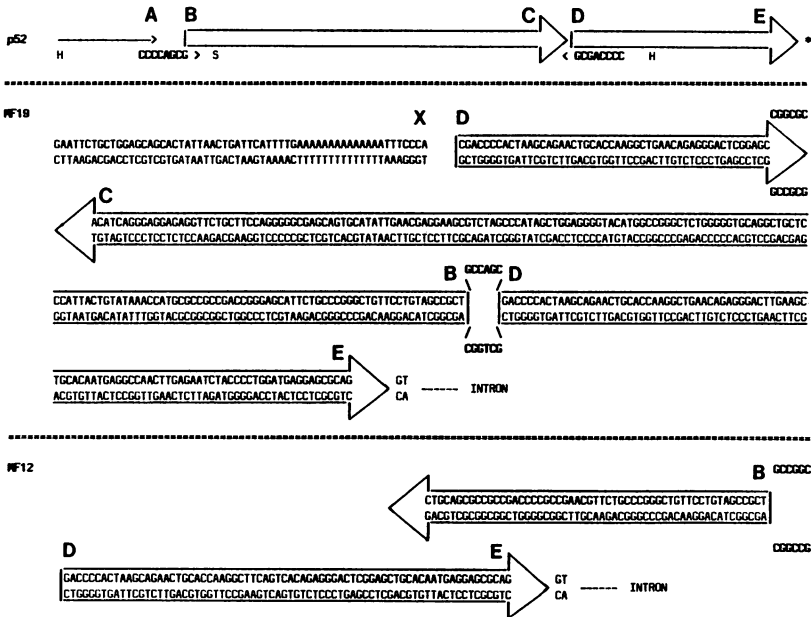
Site-specific inversions in repeated *Xenopus laevis* homeobox gene 2 sequences

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A segment of X1Hbox 2 DNA hybridizes to 20-30 bands in Southern blots of *X. laevis* DNA at high stringency. A short repeated sequence of about 300 bp was mapped to exon 2 and part of its following intron (ref.1). Two genomic repeats (MF12 and MF19) were sequenced. When compared to X1Hbox 2 cDNA clone p52 (ref.1) both genomic DNAs contained short inversions at sequence-specific sites (3 times at site D, 2 at site B), with 6 extra nucleotides (predominantly G and C) inserted at the junctions:



Nucleotide insertions and deletions interrupt the reading frames of MF12 and 19. Similar short inversions (including the insertions of extra nucleotides) have been described in aberrant Ig gene rearrangements which become incorporated into the genome (Fig.4 in ref.2). Southern blot analysis of various tissues and embryonic stages failed to detect reproducible differences in the repeated X1Hbox 2 bands during development. However, rearrangements in a small population of cells could have escaped detection.

ACKNOWLEDGEMENTS

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REFERENCES

- (1) Wright, C. V. E. et al. (1987) EMBO J. 6, 4083-4094.
- (2) Alt, F. and Baltimore, D. (1982) PNAS 79, 4118-4122.