Structure of a cDNA clone specific to hepatoma cells with rearranged mitochondrial sequences

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Submitted October 7, 1988

Accession no. X13220

We have previously isolated cDNA clones which correspond to mRNAs present at much higher levels in rat hepatoma than in normal hepatocytes (1). One of these clones, the pHT 13 clone, has been sequenced (2), it presents a homology with part of two mitochondrial genes: 97.3% homology with the gene coding for one subunit of NADH dehydrogenase at one end (3, 4) and 93% homology with cytochrome oxidase subunit I gene at the other end (5) In normal mitochondrial DNA these two genes are separated by more than 6 kb, whereas in the cDNA they are separated by only 230 bases which present no homology with any known sequences. S1 nuclease protection assay showed the existence in hepatoma cells but not in normal hepatocytes of transcripts with this abnormal structure.

1	TAGAGGATCC	CTTGTTGAT	GGGTTATAAG ATAAG	ATTAAAAATA ATTAAAAATA	CCATTAAACC CTATTAAACC	TAAAAACGAA TAAAAACGAA	pHT13 rat URF6
61	CCCCAAACC	CTAAACTAT	TAAGCACCCA	ATACATCCAC	TAACAATCAA	TCCAAACCCA	pHT13 rat URF6
121	CCATAAATTG	GTGAAGGCTT	CAACGCCAAC	CCTAGACAAC	CAGTCAAAAA	CAGTAAACTT	pHT13 rat URF6
181	CCATAAATAG	GTGAAGGCTT	CAACGCCAAC	CCTAGACAAC	CAGTCAAAAA	CAGTAAACTT	pHT13 rat URF6
241	AACGTAAACA AAAATAAACA	TATAATTTGT TATAATTTGT	CATTATTTGT CATTATTT	TGATATCCGC	TCACAATTCC	ACACAACCAT	pHT13 rat URF6
301	ACGAGCCGGA	AGCTATAAAG	TGTAAAGCCT	GGGGTGCCTA	ATGAGTGAGC	TAACTCACAT	pHT13
361	TAATTGCGTT	GCGCTCACTG	CCCCTTTTCC	AGTCGGGAAA	CTGTCGTGCC	AGCTGCTTTA	pHT13
421	ATGAATCGGC	CAACGCGCGG	GGAGAGGCGG	TTTGCCTATT	GGGCGCAGGG	TGGTTTTTCT	pHT13
481	TTTCACAGTG	AGACGGGCTA A	TATTTGTCAA TGTTGTAA	TCGTTGACTC CCGTTGACTC	TTTTCAACTA TTTTCAACTA	ACCACAAAGA ACCACAAAGA	pHT13 rat C01
541	TATCGGAACC TATCGGAACC	CTCTACCTAT CTCTACCTAT	TATTTGGAGC TATTTGGAGC	CTGAGCAGGA CTGAGCAGGA	ATAGTAGGGA ATAGTAGGGA	CAGCTTTGAG CAGCTTTGAG	pHT13 rat C01
	TATTCTAATT TATTCTAATT	CGAGCTGAAC CGAGCTGAAC	TAGGACAGCC TAGGACAGCC	AGGCGCAGTC AGGCGCAGTC	pHT13 rat C01		

REFERENCES

- 1- Corral, M. et al. (1986) Cancer Res. 46, 5119-5124.
- 2- Sanger, F. et al. (1977) Proc. Natl. Acad. Sci. USA. 74, 5463-5467.
- 3- Kolke, K et al. (1982) Gene 20, 177-185.
- 4- Chomyn, A. et al. (1986) Science 234, 614-618.
- 5- Grosskopf, R. and H. Feldmann (1981). Curr. Genet. 4, 151-158.