

Cloning and nucleotide sequencing of transthyretin (prealbumin) cDNA from rat choroid plexus and liver

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Transthyretin (TTR) cDNA clones were isolated from a λ gt10 cDNA library prepared from choroid plexus RNA from inbred Buffalo rats, using a previously characterized Sprague-Dawley rat liver TTR cDNA (1) as a probe. The complete nucleotide sequence was determined by dideoxy sequence analysis of both strands with overlapping fragments and is presented below. The obtained sequence was similar to that previously reported for Sprague-Dawley rat liver TTR cDNA (1) except for the third base of codon 26 (see underlined nucleotide). This may reflect a genetic difference between the two rat strains. The nucleotide sequence of codon 26, obtained by sequencing the previously isolated exon 2 clone of the Buffalo rat TTR gene (2), was identical to that of Buffalo rat choroid plexus cDNA. Resequencing of the Sprague-Dawley rat liver TTR cDNA showed that the differences in the third bases of codons 28 and 32 between the TTR cDNAs from Buffalo and Sprague-Dawley rats were due to errors in the previously reported sequence (1).

The identical sequences of TTR cDNA from rat liver and choroid plexus together with the Southern analysis pattern (2) strongly suggests that the same TTR gene is expressed in both the liver and the choroid plexus.

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      Presegment                                     Mature
      ↗                                               ↘ protein
GGATGGCTTC CCTTCGCCTGTTCCTCCTCGCCTGGACTGATATTTGCGTCTGAAGCTGGCCCTGG 70
GGGTGCTGGAGAATCCAAGTGCCTCTGATGGTCAAAGTCCCTGGATGCTGTCGGAGGCAGCCCTGCCTGC 140
GATGTGGCCCGTGAAAGTGTTCAAAAAGACTGCAGACGGAAGCTGGGAGCCGTTTGCCTCTGGGAAGACCG 210
CCGAGTCTGGAGAGCTGCACGGGCTCACACAGATGAGAAGTTCACGGAAGGGGTGTACAGGGTAGAACT 280
GGACACCAAATCGTACTGGAAGGCTCTTGGCATTCCCCATTCATGAATACGCAGAGGTGGTTTTTCACA 350
GCCAATGACTCTGGTCAATCGCCACTACCCATCGCAGCCCTGCTCAGCCGTACTCCTACAGCACCCTG 420
*** (Stop codon)
CTGTGCTCAGTAACCCCCAGAACTGAGGGACCCAGCCAGGAGGACCAGGATCTTGCCAAAGCAGTAGCT 490
TCCCATTTGTACTGAAACAGTGTTCCTTGCTCTATAAACCGTGTAGCAACTCGGGAAGATGCCGTGAAAC 560
GTTCTTATTAACACACCTTTATTCATTC - Poly(A)
  
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References

- (1) Dickson, P.W., Howlett, G.J. and Schreiber, G. (1985) *J. Biol. Chem.* **260**, 8214-8219.
- (2) Fung, W.P., Thomas, T., Dickson, P.W., Aldred, A.R., Milland, J., Dziadek, M., Power, B., Hudson, P. and Schreiber, G. (1988) *J. Biol. Chem.* **263**, 480-488.