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The nucleotide sequence of a human protamine 1 cDNA

Chul-Hoon Lee, Sigrid Hoyer-Fender and Wolfgang Engel

Institut für Humangenetik der Universität Göttingen, Gosslerstrasse 12d, D-3400 Göttingen, FRG
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We have isolated a cDNA encoding the human protamine 1(P1) from a human testis specific cDNA library in vector λgt 11 using as a probe the bovine protamine cDNA(1), which is expressed postmeiotically during bovine spermatogenesis(2). The cDNA-clone encodes a polypeptide of 50 amino acids of which 24 are arginines and 6 are cysteines. The insert contains the complete 3'-noncoding region and a canonical polyadenylation signal, AATAAA, upstream of the poly A track as well as 100 bases of the 5'-noncoding region. Interestingly, the homology of the 5'- and 3'-noncoding regions of human protamine 1 and bovine protamine cDNAs is higher(76 and 86%, respectively) than that of the coding regions of both protamine cDNAs(60%).The amino acid sequence of the human protamine 1 was recently published(3) and is founde to be identical to that deduced from the cDNA nucleotide sequence.

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5' CCCTCTCAGCTGCCCACAGAGTTCCACCTGCTGACAGGTTGGCTGGCTCAGCCAAGGT
  -100      -90                              -60  ***
   GGTGCCCTGCTCTGAGCATTCAGGCCAAGCCCATCCTGCACC ATG GCC AGG TAC
              -30                                  1    A   R   Y
   AGA TGC TGT CGC AGC CAG AGC CGG AGC AGA TAT TAC CGC CAG AGA
    R   C   C   R   S   Q   S   R   S   R   Y   Y   R   Q   R
   CAA AGA AGT CGC AGA CGA AGG AGG CGG AGC TGC CAG ACA CGG AGG
    Q   R   S   R   R   R   R   R   R   S   C   Q   T   R   R
   AGA GCC ATG AGG TGC TGC CGC CCC AGG TAC AGA CCG AGA TGT AGA
    R   A   M   R   C   C   R   P   R   Y   R   P   R   C   R
   AGA CAC TAA TTGCACAAAATAGCACATCCACCAAACTCCTGCCTGAGAATGTTACC
    R   H                                 180
   AGACTTCAAGATCCTCTTGCCACATCTTGAAAATGCCACCATCCAATAAAAATCAGGAG
         210                              240
   CCTGCTAAGGAACAATGCCGCCTGTCAATAAATGTTGAAAAGTCAAAAAAAAAAAAAAA 3'
         270                              300                  321
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