

Genomic sequence of a Sprague-Dawley rat β -globin gene

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The heterogeneous nature of hemoglobin in rat is very unusual when compared with other members in the rodent family or even with other mammals (1). In order to clarify this problem we proceeded to molecular cloning of the globin genes in rat. The following DNA sequence which contain one of the entire β -globin genes was isolated from our genomic library. The nucleotide sequences were determined by M13 and Maxam Gilbert sequencing methods. Detailed sequence analyses and comparison with all available globin sequences and our cDNA library indicated that this is an active gene with extensive homology with the mouse β -minor. The initiation site, coding regions and the termination sites are underlined.

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1 GAATTCTTAA TATAATAGTT AAGGATGTTT TAGAGACAGA GTTTGCTGCA AGGGAAGAA
61 CACACAGTAT TCAGAGTGAG GACCTGGAAC TCTTATACCT AAGCCTGTAC CATAGCCACC
121 CTGAGTAGGT ATGGCTATCA TCTCTGAAGC CTCACCCTGC AGAGGCACAC CCTCACATTG
181 CCCAATCTGC TCACACAGGA CAGAGTGATC AGGGGCCAGA ATTTGGCATA TAAAGCAGAA
241 CAGAACCAGT TGCTTCTTAT ATTTGCTTCT GATACTGTTG TGTTGACTCG CAACCTCAGG
301 AACAGACACC ATGGTGACC TAACTGATGC TGAGAAGGCT ACTGTTAGTG GCCTGTGGGG
361 AAAGGTGAAC CCTGATAATG TTGGCGCTGA GGCCTGGGC AGTGTGGTAT CCAGGTTACA
421 AGGTAGCTCC TAAGTAGAAG TTTGGTGCTT GGAGACAGAG GTCTGCTTTC CAGCAGGCAC
481 TAACTTTTTT GTCTTCTGGC TATGTTTCCC TTTGTAGGCT GCTGGTTGTC TACCCTTGGA
541 CCCAGAGGTA CTTTTCTAAA TTTGGGGACC TGTCTCTGTC CTCTGCTATT ATGGGTAACC
601 CCCAGGTGAA GGCCCATGGC AAGAAGGTGA TAAATGCCTT CAATGATGGC CTGAAACACT
661 TGGACAACCT CAAGGGCACC TTTGCTCATC TGAGTGAECT CCACTGTGAC AAGCTGCATG
721 TGGATCCTGA GAACTTCAGG GTGAGTCTAA TGGGCTCCCC ACTGGGTGTC CTTCTGTGG
781 CTTTCTGTCT CAAATTCCTA TCAGAAGGAA AGAGGAAGCA ATTCTAGGGA GCAGTTTTGA
841 TGATGATGTG TGGATATGCC CTGTGGATTG TTGACAGGAG TCCAGTTATT TTATCCTCTA
901 TTCACAATCA CTTCTCCCTC TCACTCTGTT CTTCTATGTT GTCATTTTCT CTTTCTTTGG
961 TAAACTTTTA ATTTTTCTGT TGCAGGTTTA AAGTACATCT TTTATGTACT TTCTCTCTTT
1021 TTTTATTCAG CCATGAGGGT ACCTTCTAGA CTTTAAAAAA CGTAGTACTT TCTCTTTTGT
1081 TTCAAGTGTT TCCTGCTACT TTA CTCTGAG GACATAAAGA TAAATGATTC ACTCATTTCA
1141 CAGCTGTAA GAAATAGTAG ACAATAATTG GCTTTCAGGC TAAGATGATA GGAAGAATA
1201 TATTTTGCAT ATAAATTTG TCTGCTAGAA GAATTCCTT CAAAATTGAC CAGGAGAACT
1261 CAGTAGTCAT TCTGCCCTGTC TTTTAAGATT ATA ACTGCAA ACTCCATTTG AAATGGGCCT
1321 GCAGTGCTCG ATATTGTTG TCTACTTCAT GTTGAAACAT CTTCCCTCTT CCCACAGCTC
1381 CTGGGCAATA TGATTGTGAT TGTGTTGGGC CACCACCTGG GCAAGGAATT CACCCGCTCT
1441 GCACAGGCTG CCTTCCAGAA GGTGGTAGCT GGAGTGGCCA GTGCCCTTGC TCACAAGTAC
1501 CACTAAGCCC CTTTTCTGTC TTGTCTATGC ACAAGGTTA TGTGTCCTGT AGAGAACAAC
1561 TGTCAACTGT GGGGGGAAAT GATGAAGGCC TTTGGGCAGC TAGCTTCTAT CTAATAAATG
1621 ATATTTACTT TCATCGATGG TGTGTTTTAA TTA CTGTTGTT TTCTTGGAAG GTTAATGTGA
1681 AGCATTATG ATATAAAGCT GTTGGGACAT GCTAGAGGGA GGTGAAGTC ATGTCATTCT
1741 ATTCAATTA A

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