Genomic sequence of rat β-globin minor gene

Milena Stevanović and Radomir Crkvenjakov

Genetic Engineering Centre, Vojvode Stepe 283, PO Box 794, 11 000 Beograd, Yugoslavia
Submitted May 16, 1989 EMBL accession no. X15160

In order to understand the complexity of rat β-like globin locus a number of clones covering the region was isolated from heterogenus genomic library prepared in EMBL 3 vector from Wistar strain animals carrying Belgrade anemia (1). The folowing DNA sequence which contains one entire rat β-globin gene (β_b^{minY}) from clone λ11 was determined using Sanger's dideoxy sequencing method. The detailed sequence analysis and comparison with available globin mRNA, globin gene and protein sequences indicate that this is an active β^{min} globin gene wich shares extensive homology with the mouse β^{min} globin gene(2, 3, 4). The coding regions are underlined.

1	CCCTGGTAGT	TATGGCTATC	ATCTCTGAAG	CCTCACCCTG	CAGAGGCACA
51	CCCTCACATT	GCCCAATCTG	CTCACACAGG	ACAGAGTGAT	CAGGGGCCAG
101	AATTTGGCAT	ATAAAGCAGA	ACAGAACCAG	TTGCTTCTTA	TATTTGCTTC
151	TGATACTGTT	GTGTTGACTC	GCAACCTCAG	GAACAGACAC	CATGGTGCAC
201	CTAACTGATG	CTGAGAAGGC	TACTGTTAGT	GGCCTGTGGG	GAAAGGTGAA
251	TGCTGATAAT	GTTGGCGCTG	AGGCCCTGGG	CAGGTTGGTA	TCCAGGTTAC
301	AAGGTAGCTC	CTAAGTAGAA	GTTTGGTGCT	TGGAGACAGA	GGTCTGCTTT
351	CCAGCAGGCA	CTAACTTTTT	TGTCTTCTGG	CTATGTTTCC	CCTTTGTAGG
401	CTGCTGGTTG	TCTACCCTTG	GACCCAGAGG	TACTTTTCTA	AATTTGGGGA
451	CCTGTCCTCT	GCCTCTGCTA	TCATGGGTAA	CCCCCAGGTG	AAGGCCCATG
501	GCAAGAAGGT	GATAAATGCC	TTCAATGATG	GCCTGAAACA	CTTGGACAAC
551	CTCAAGGGCA	CCTTTGCTCA	TCTGAGTGAA	CTCCACTGTG	ACAAGCTGCA
601	TGTGGATCCT	GAGAACTTCA	GGGTGAGTCT	AATGGGCTCC	CCACTGGGTG
651	TCCTTCCTGT	GGCTTTCCTG	CTCAAATTCC	TATCAGAAGG	AAAGAGGAAG
701	CAATTCTAGG	GAGCAGTTTT	GATGATGATG	TGTGGATATG	CCCTGTGGAG
751	TGTTGACAGG	AGTCCAGTTA	TTTTATCCTC	TATTCACAAT	CACTTCTCCC
801	TCTCACTCTG	TTCTTCTATG	TTGTCATTTC	CTCTTTCTTT	GGTAAACTTT
851	TAATTTTTCT	GTTGCAGGTT	TAAAGTACAT	CTTTTATGTA	CTTTCTCTCT
901	TTTTTTTTAT	TCAGCCATGA	GGGTACCTTC	TAGACTTTAA	AAAACGTAGT
951	ACTTTCTCTT	TTGTTTCAAG	TGTTTCCTGC	TACTTTACTC	TGAGGACGTA
1001	AAGATCAATG	ATTCACTCAT	TCCACACCTG	TAAGGAATAG	TAGAACAATA
1051	ATTGGCTTTC	AGGCTAAGAT	GATAGGGAAA	TATATATTTT	GCATATAAAT
1101	TTTGTCTGCT	AGAAGAATTC	TTATCAAAAT	TGACCAGGAG	AACTCAGTAG
1151	TCATTCTGCC	TGTCTTTTAA	GATTATAACT	GCAAACTCCA	TTTGAAATGG
1201	GCCTGCAGTG	TCTGATATTG	TTGTTCTACT	TCATGTTGAA	ACATCTTCCC
1251	TCTTCCCACA	GCTCCTGGGC	AATATGATTG	TGATTGTGTT	GGGCCACCAC
1301	CTGGGCAAGG	AATTCACCCC	CTGTGCACAG	GCTGCCTTCC	AGAAGGTGGT
1351	GGCTGGAGTG	GCCAGTGCCC	TGGCTCACAA	GTACCACTAA	ACCTCTTTTC
1401	CTGCTCTTGT	CTTTGTGCAA	TGGTCAATTG	TTCCCAAGAG	AGCATCTGTC
1451	AGTTGTTGTC	AAAATGACAA	AGACCTTTGA	AAATCTGTCC	TACTAATTAA
1501	AGGCATTTAC	TTTCACTGCA	ATGGTGTGTT	AAATTAATTG	TATCTCATAG
1551	AAGGGTTCAT	GCTTAGGTTC	AAGATACAAA	GCAGTGAGGG	

References

1. Stevanović, M., Paunesku, T., Radosavljević, D., Drmanac, R. and Crkvenjakov, R. (1989) Gene, 79, 139-150. (In press)
2. Oshita, Y., Hozumi, T. (1987) Nucl. Acid. Res. 15, 1336
3. Wong, W. M., Lam, V. M. S. L., Cheng, L. Y. L and Tam, J. W. O. (1988) Nucl. Acid Res. 16, 2342.
4. Garrick, L. M. Sloan, R. L., Ryan, T. W., Klonowski, T. J. and Garrick, M. D. (1978) Biochem. J. 173, 321-330.

