Nucleotide sequence of cDNA for rat liver and brain cytochrome *c* oxidase subunit VIa*(Vb)

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Recently we described the cDNA for subunit IV from rat brain and liver cytochrome c oxidase [EC 1.9.3.1] [1]. Here we report the nucleotide sequence of the cDNA for subunit VIa (Vb)[2] from rat liver. The cDNA insert of the liver was 434 bp, containing a 5'- untranslated region of 54 bp, a coding region of 297 bp, a 3'- untranslated region of 83 bp and a poly(A) tail. The deduced amino acid sequence is composed of 99 residues, including the amino terminal methionine, and differs from the amino acid sequence of bovine heart mature subunit VIa [2] by 17 out of 98 residues. This subunit may be synthesized without presequence similarly as rat and human VIc[3,4], rat VIb (VIa)[5] and human VII (VIb)[6]. Since the nucleotide sequence of rat brain cDNA was found to be completely identical with that of liver, we assume that the same gene is expressed both in the liver and brain of rat.

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        GCGGCTCAGGCCCTGAGGGCCCACGGACCCCGTGGCGTGGCCGCTACCCGCTCC  -1

ATGGCTTCTGGAGGTGGTGTCCCTACTGATGAGGAGCAGGCTACCGGGCTGGAGAGGGAG  60
MetAlaSerGlyGlyGlyValProThrAspGluGluGlnAlaThrGlyLeuGluArgGlu
ATCATGATAGCAGCACAGAGGGGACTGGATCCATACAATATGCTACCTCCAAAGGCAGCT 120
IleMetIleAlaAlaGlnArgGlyLeuAspProTyrAsnMetLeuProProLysAlaAla
TCGGGCACCAAGGAAGACCCCAATCTAGTCCCATCCGTTAGCAACAAGAGAATAGTGGGC 180
SerGlyThrLysGluAspProAsnLeuValProSerValSerAsnLysArgIleValGly
TGCATCTGTGAAGAGGACAACTGCACTGTCATCTGGTTCTGGCTGCACCAAGGCGAGAGC 240
CysIleCysGluGluAspAsnCysThrValIleTrpPheTrpLeuHisGlnGlyGluSer
CAGCGATGCCCCAACTGTGGAACACATTACAAGTTGGTGCCCTACCAAATGGTCCACTGA 300
GlnArgCysProAsnCysGlyThrHisTyrLysLeuValProTyrGlnMetValHisEnd
GCCCACCCCTGGTTTAACATTTCAGAATGTAAAGGAAAACGTCTCTCTAATAAAGACTAG 360

CCAACGCACTGGCTCCTTCCAAAAAAA                                   387
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*The subunit IV, VIa,VIb VIc and VII are defined according to Buse and those defined by Kadenbach are presented in parenthesis.

References

[1] Goto,Y., Amuro,N., and Okazaki,T.(1989) Nucl. Acids Res.17, 2851. [2] Biewald,R. and Buse,G.(1982) Hoppe-Zeyler's Z. Physiol.Chem. 363, 1141-1153. [3] Suske,G., Mengel,T., Cordingley,M. and Kadenbach,B.(1987) Eur.J.Bicohem. 168, 233-237. [4] Otuka,M., Mizuno,Y., Yoshida,M., Kagawa, Y. and Ohta,S.(1988) Nucl. Acids Res. 16,10916.[5] Schlerf,A., Droste, M., Winter,M. and Kadenbach,B. (1988) EMBO J. 7, 2387-2391. [6] Taanman, J.-W., Schrage,C., Ponne,N., Bolhuis,P., de Vries,H. and Agsteribbe, E. (1989) Nucl. Acids Res. 17, 1766.

