Nucleotide sequence of a cDNA for bovine cytochrome c oxidase subunit VIIa

R.Sathiagana Seelan, Donalyn Scheuner⁺, Margaret I.Lomax¹ and Lawrence I.Grossman*

Department of Molecular Biology and Genetics and Center for Molecular Biology, Wayne State University School of Medicine, Detroit, MI 48201 and ¹Department of Anatomy and Cell Biology, University of Michigan Medical School, Ann Arbor, MI 48109, USA
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Cytochrome c oxidase (EC 1.9.3.1) contains thirteen subunits in animals, three encoded by mitochondrial DNA and the remainder by nuclear DNA. At least three of the ten nuclear encoded subunits are found in different tissues to have different predominant forms, termed isoforms [reviewed in (1)]. These are VIa, VIIa, and VIII.

We are studying the structure and function of the isoform genes and present the sequence of subunit VIIa of a bovine liver cDNA. It contains a typical presequence that is positively charged and appears amphiphilic (2). The coding region for the mature protein (starting at *) is similar to the corrected (3) partial amino acid sequence (4) and different from the sequence of the bovine heart polypeptide (5). One amino acid (Arg-30) differs from the corrected partial protein sequence (3, 4). This difference may represent a polymorphism.

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1 GAATCCGATAAGAGGTTGGTGGGTAGTAAC TGAGCCAAGATGCTACGGAATCTTCTGGC
                                     M L R N L L A
61 TCTCCGTCAGATTGCTAAGAGGACCATAAGTACTTCTTCACGCAGGCAGTTTGAAATAA
   L R Q I A K R T I S T S S R R Q F E N K
121 GGTTCCAGAGAAACAAAAGCTGTTTCAGGAGGATAATGGAATTCAGTGCATCTGAAGGG
    V P E K Q K L F Q E D N G I P V H L K G
181 TGGGATAGCTGATGCCCGCTGTATAGAGCCACCCTGATTCTTACAGTTGGTGGGAACGGC
    G I A D A R L Y R A T L I L T V G G T A
241 ATATGCCATGTATGAAC TGGCTGTGGCTTCATTTCCCAAGAAGCAGGATTGACTTGAGTT
    Y A M Y E L A V A S F P K K Q D *
301 TATCCTCCCAGCAATCAGTTGGGTCAATTCATTACAGTCTCTGTGGACCAGTAATCTGA
361 TACGTAAC TGAGTTCTTTGGGGATCAATATTTATTGACTTGATTAGCTGCCCGGAATTC

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*To whom correspondence should be addressed at Department of Molecular Biology and Genetics, Wayne State University School of Medicine, 540 East Canfield, Detroit, MI 48201, USA

⁺Present address: Department of Pharmacology, University of Michigan Medical School, Ann Arbor, MI 48109, USA

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