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Homology cloning, sequence characterization, and expression analysis of cDNA encoding electron transfer flavoprotein beta polypeptide in mud crab (*Scylla paramamosain*)

X.L. Hao[1,2], H.F. Yao[2], Y.Z. Cheng[2] and R.X. Wang[2]

[1]College of Life Science, Jilin Normal University, Siping, China
[2]Laboratory for Marine Living Resources and Molecular Engineering, College of Marine Science, Zhejiang Ocean University, Zhoushan, China

Corresponding author: R.X. Wang
E-mail: wangrixin1123@126.com

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ABSTRACT. Electron transfer flavoproteins (ETFs) are αβ-heterodimers found in eukaryotic mitochondria and bacteria. Herein we report a full-length complementary DNA of a mud crab (*Scylla paramamosain*) ETF β subunit (Scpa-ETFB) isolated with a homology cloning strategy. The complete complementary DNA of the Scpa-ETFB contains a 17-nt 5'-untranslated region, a 765-nt open reading frame encoding 254 amino acids, and a 248-nt 3'-untranslated region. The high identity of Scpa-ETFB with ETFB in other organisms indicated that Scpa-ETFB is a new member of the ETFB family. Although the conserved motif associated with flavin adenine dinucleotide binding is absent in Scpa-ETFB, the signature sequences of the ETF superfamily were identified. Using reverse transcriptase polymerase chain reaction, we detected the messenger RNA transcript of Scpa-ETFB in high levels in the tissues of the hepatopancreas, ovary, heart, and muscle. Phylogenetic analysis showed that Scpa-ETFB is most closely related to the ETFB genes of *Caligus rogercresseyi* and *Lepeophtheirus salmonis*.

These results provided basic information for elucidating the molecular mechanism of energy production in the mud crab.

Key words: Mud crab; Electron transfer flavoprotein β subunit; Homology cloning; Energy production

