

## The Efficiency of Cytochrome Oxidase Subunit 1 Gene (cox1) in Reconstruction of Phylogenetic Relations among Some Crustacean Species

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**Abstract :** Some *Metapenaeus monoceros* *cox1* gene fragments were isolated, purified, sequenced, and comparatively analyzed with some other Crustacean *Cox1* gene sequences (obtained from National Center for Biotechnology Information). This work was designed for testing the efficiency of this system in reconstruction of phylogenetic relations among some Crustacean species belonging to four genera (*Metapenaeus*, *Artemia*, *Daphnia* and *Calanus*). The single nucleotide polymorphism and haplotype diversity were calculated for all estimated mt-DNA fragments. The genetic distance values were 0.292, 0.015, 0.151, and 0.09 within *Metapenaeus* species, *Calanus* species, *Artemia* species, and *Daphnia* species, respectively. The reconstructed phylogenetic tree is clustered into some unique clades. Cytochrome oxidase subunit 1 gene (*cox1*) was a powerful system in reconstruction of phylogenetic relations among evaluated crustacean species.

**Keywords :** crustaceans, genetics, *Cox1*, phylogeny

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