Molecular systematic analyse of the species of Triglidae family in the Mediterranean Sea

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Aim of the study: Systematic analyse of the species of the family Triglidae including ten species (Chelidonichthys cuculus, Chelidonichthys lucerna, Chelidonichthys obscurus, Eutrigla gurnardus, Lepidotrigla cavillone, Lepidotrigla dieuzeidei, Trigla lyra, Trigloporus lastoviza), Dactylopteridae (Dactylopterus volitans), Peristedidae (Peristedion cataphractum) from the Turkish seas were investigated with genetic (mitochondrial COIII, 16S rRNA genes sequencing) and morphological (morphometric and meristic) technics.

Material and Methods: C. cuculus, C. lucerna, C. obscurus, E. gurnardus, L. cavillone, L. dieuzeidei, T. lyra, T. lastoviza, D. volitans, P. cataphractum were collected from the Mediterranean, Aegean Sea, Marmara Sea and Black Sea Coasts of Turkey. Total genomic DNA was isolated using the standard phenol-chloroform extraction method. The COIII and 16S rRNA regions of mtDNA were amplified via PCR using universal primers.

Results: The mtDNA COIII Neigbour Joining analysis, L. cavillone and L. dieuzeidei showed closest relationship and E. gurnardus was sister to this group. C. cuculus and T. lyra were distinctly clustered to these species respectively. In another side of Triglidae main branch, C. lucerna and T. lastoviza were grouped together. The other two family members, D. volitans and P. cataphractum were grouped highly separately from the Triglidae family members, and P. cataphractum showed most distinct relationship among them. The mtDNA 16S rRNA Neighbour Joining analysis, Triglidae family member were grouped together at the genus level in which L. cavillone and L. dieuzeidei were clustered together as a close species, and T. lyra and T. lastoviza were sisterly clustered, respectively. C. cuculus ve C. lucerna were clustered together and E. gurnardus was clustered sisterly this group in another main branch of the Triglidae main branch. The other two family members, D. volitans and P. cataphractum were grouped highly separetly from the Triglidae family members, and D. volitans showed most distinct relationship among them. In the morphological analysis, D. volitans and P. cataphractum were found to be very different from the species of Triglidae family.

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Key words: Triglidae, Gumard species, molecular systematic, mtDNA sequencing, morphology.