

13th International Conference on

Structural and Molecular Biology: Techniques & Market Analysis

October 22-23, 2018 | Ottawa, Canada

DNA-based identification of *Anchovies (Engraulidae)* in the Persian Gulf and Oman sea

Iman Sourinejad, Mahboobeh Afrand, Seyed Abolhassan Shahzadeh Fazeli, Arash Akbarzadeh and Zahra Ghasemi Laleh Vajheh Sari
University of Hormozgan, Iran

So far, no documented molecular study has identified and classified Anchovies (*Engraulidae*) in the Persian Gulf and Oman Sea. The utility of mitochondrial cytochrome oxidase subunit I (COI) for identification of Anchovies from the Persian Gulf and Oman Sea was examined.

Methodology: The specimens of Anchovies were collected at seven different stations in the Persian Gulf and Oman Sea. Total genomic DNA was extracted from muscle tissue of six individuals of each species. The LCO1490 and HCO2198 primer pairs were used to amplify a 658 bp fragment of the COI gene. The purified PCR products were sent for bidirectional sequencing. The COI sequences were assigned accession numbers. All the information were submitted to BOLD and GenBank databases. The obtained sequences from two strands were assembled and manually corrected using the SeqMan software. The sequences were aligned using CLUSTAL W in Meg Align software and variable sites were determined. Pairwise sequence divergence was calculated by using Kimura's two-parameter distance. Maximum Likelihood trees with bootstrap analysis of 1000 replicate based on K2P distance were constructed in MEGA.

Findings: Eight species of *Thryssa hamiltonii*, *Thryssa setirostris*, *Thryssa vitrirostris*, *Thryssa whiteheadi*, *Thryssa dussumieri*, *Encrasicholina punctifer*, *Encrasicholina pseudoheteroloba*, and *Stolephorus indicus* were identified. No results were found for six sequences indicating these sequences belonged to the endemic species of this region known as "*Thryssa whiteheadi*". The intraspecies and interspecies genetic distances were 0.00 and 0.168 to 0.275, respectively. The highest interspecies genetic distance (0.275) was between *T.vitrirostris* and *S. indicus* and the lowest (0.168) was between *T.dussumieri* and *T.whiteheadi*. Maximum Likelihood phylogenetic tree placed Anchovies in two main and eight under distinct clusters.

Conclusion & Significance: This fact that the same species from different regions clustered in a major clade suggests that COI gene sequences could serve as universal DNA markers in fish barcoding studies.

Biography

Iman Sourinejad was born on 09.09.1982, is an Associate professor. at Department of Aquaculture and Fisheries, Faculty of Marine Science and Technology, University of Hormozgan, Bandar Abbas City, Hormozgan Province, Southern Iran. His research area of interest is Genetics and Biotechnology in Fisheries and Aquaculture. He has published more than 80 papers in Persian and English.

sourinejad@hormozgan.ac.ir

Notes: