

Origin, Diversification, and Historical Biogeography of the Genus *Trachurus* (Perciformes: Carangidae)

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Abstract

We addressed phylogenetic relationships in the genus *Trachurus* using cytochrome *b* gene and D-loop sequences. The trees showed five groups: (1) the Southwest Pacific species (*T. japonicus*, *T. novaezelandiae*, and *T. declivis*); (2) The Mediterranean Sea and Eastern Atlantic species (*T. mediterraneus*); (3) The Atlantic Ocean species (*T. lathami* and *T. trecae*); (4) Eastern Atlantic species (*T. trachurus* and *T. capensis*); and (5) a group of highly mobile pelagic species, two from the Eastern Pacific (*T. symmetricus* and *T. murphyi*) and one from the Eastern Atlantic (*T. picturatus*). The phylogeny based on Cyt b, supports the molecular clock hypothesis and our results agree with the reported fossil indicating that the origin of this genus occur when the Thetys Sea closed (around 18.4 MYA). In addition, a very slow neutral substitution rate is reported identified only two periods of maximum diversification: the first occurring between 18.4 and 15.0 MYA and the second between 8.4 MYA and present day.