

Taxonomic assessment of *Puntius thermalis* in Sri Lanka using DNA barcoding

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Puntius chola (*sensu lato*) Hamilton 1822, (family Cyprinidae) is a widely distributed fish species in the Asian region. The recent taxonomic revision of the genus *Puntius* revived the name *Puntius thermalis* (*sensu stricto*) Valenciennes 1844 for Sri Lankan specimens previously identified as *Puntius chola*. The use of DNA barcoding for the identification of species is now widely recognized, and a large number of taxonomic studies have used mitochondrial Cytochrome Oxidase I (COI) gene sequences to delineate fish species. The objective of this study was to use DNA barcoding to clarify taxonomic status of *Puntius chola* (*s.l.*) in Sri Lanka. DNA sequences of the partial mitochondrial COI gene region were produced, and alignment based comparisons were made with additional COI sequences for Indian *P. chola* and two selected out-group cyprinid taxa available from the Genbank. According to the derived phylogenetic tree, *P. chola* in Sri Lanka (4 locations) is clearly separated from Indian *P. chola*. The divergence levels between Sri Lankan and Indian *P. chola* ranged from 2.2% to 14.9%. There were no significant phylogenetic differences found among Sri Lankan *P. chola* sequences. It provides evidence for the presence of genetically diverged phylogenetic species in Sri Lanka closely related to the Indian taxon, and substantiates the recent taxonomic revival of the name *Puntius thermalis* for the Sri Lankan taxon. Further morphological studies with type specimens of Indian *P. chola* will be important to clarify these findings.

Keywords: Nucleotide divergence; *Puntius chola*; *Puntius thermalis*; phylogenetic species.

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