

Cross-species amplification study of *Tor douronensis* and *Tor tambroides* using microsatellites from other cyprinids

ABSTRACT

This study examined twenty six microsatellite primers developed from three cyprinid fishes (*Cyprinus carpio*, *Barbus barbus* and *Barbonymus gonionotus*) in two indigenous mahseer, *Tor douronensis* and *T. tambroides*. A total of 10 (38%) and 12 (46%) primers were successfully amplified producing four and five polymorphic loci in *T. douronensis* and *T. tambroides*, respectively. The number of alleles per locus ranging from 2 to 5 and 2 to 7 in *T. douronensis* and *T. tambroides*, respectively. A significant deviation from Hardy-Weinberg equilibrium (HWE) was observed at three loci (Barb37, Barb59 and Barb62) in one or more populations in *T. tambroides* while two loci (Barb37 and Barb62) were deviated in *T. douronensis* population of Batang Ai. Bayesian cluster analysis performed with STRUCTURE showed that the most likely K value identified was K = 2 with no evidence of population substructuring, similar to those identified by the UPGMA dendrogram. The low genetic distances among populations were also supported by low interpopulation genetic differences (FST) among pairwise populations in both mahseer. Overall, the identified microsatellite loci exhibit promise for use in fine scale population structure analysis of *T. douronensis* and *T. tambroides* natural populations.

Keyword: Cross-species study; Microsatellites; Mahseer; Population structure