Genetic characterization of two mahseer species (Tor douronensis and Tor tambroides) using microsatellite markers from other cyprinids.

ABSTRACT

This study examined the genetic characteristics of twenty-six microsatellite primers developed from three cyprinid fishes(Cyprinus carpio Linnaeus,Barbus barbus Linnaeus and Barbonymus gonionotus Bleeker) in two indigenous mahseer. The Tor douronensis Valenciennes were randomly collected from two locations in Sarawak (N=52), while Tor tambroides Bleeker were obtained from Peninsular Malaysia (N=56). A total of ten and twelve primers were successfully amplified producing four and five polymorphic loci in T. douronensis and T. tambroides, respectively. The number of alleles perlocus ranging from 2 to 5 in T.douronensis and 2 to 7 in T. tambroides. 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. Population structure analysis showed low level of inter-population genetic differentiation in both mahseer. Overall, the identified microsatellite loci should be useful in analysing T. douronensis and T. tambroides natural populations.

Keyword: Cross-species study; Genetic characterization; Mahseer; microsatellites.