

Segregation and genetic linkage analyses of river catfish, *Mystus nemurus*, based on microsatellite markers

ABSTRACT

The river catfish *Mystus nemurus* is an important fresh water species for aquaculture in Malaysia. We report the first genetic linkage map of *M. nemurus* based on segregation analysis and a linkage map using newly developed microsatellite markers of *M. nemurus*. A total of 70 of the newly developed polymorphic DNA microsatellite markers were analyzed on pedigrees generated using a pseudo-testcross strategy from 2 mapping families. In the first mapping family, 100 offspring were produced from randomly selected dams of the same populations; dams of the second family were selected from 2 different populations, and this family had 50 offspring. Thirty-one of the 70 markers segregated according to the Mendelian segregation ratio. Linkage analysis revealed that 17 microsatellite markers belonging to 7 linkage groups were obtained at a logarithm of the odds score of 1.2 spanning 584 cM by the Kosambi mapping function, whereas the other 14 remained unlinked. The results from this study will act as primer to a more extensive genetic mapping study aimed towards identifying genetic loci involved in determining economically important traits.

Keyword: Linkage analysis; Microsatellites; *Mystus nemurus*; Pseudo-testcross strategy; River catfish; Segregation