



## Characterization of novel microsatellite markers derived from Korean rose bitterling (*Rhodeus uyekii*) genomic library

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**ABSTRACT.** Korean rose bitterling (*Rhodeus uyekii*) is a freshwater fish endemic to Korea. Natural populations of this species have experienced severe declines as a result of habitat fragmentation and water pollution. To conserve and restore *R. uyekii*, the genetic diversity of this species needs to be assessed at the population level. Eighteen novel polymorphic microsatellite loci for *R. uyekii* were developed using an enriched partial genomic library. Polymorphisms at these loci were studied in 150 individuals collected from three populations. The number of alleles at each locus ranged from 3 to 47 (mean = 17.1). Within the populations, the observed heterozygosity ranged from 0.032 to 1.000, expected heterozygosity from 0.082 to 0.967, and polymorphism information content from 0.078 to 0.950. Six loci showed significant deviation from Hardy-Weinberg equilibrium after Bonferroni's correction, and no

significant linkage disequilibrium was detected between most locus pairs, except in three cases. These highly informative microsatellite markers should be useful for genetic population structure analyses of *R. uyekii*.

**Key words:** *Rhodeus uyekii*; Korean rose bitterling; Microsatellite loci; Genetic diversity