

Isolation and characterization of 24 microsatellite loci in *Paphiopedilum rothschildianum*, an endangered slipper orchid

Abstract

This paper describes the characterization of 24 polymorphic microsatellite loci in *Paphiopedilum rothschildianum*, an endangered slipper orchid endemic to Sabah, Malaysia. A total of 36 clones containing microsatellite repeat motifs yielded 41 dinucleotide, 20 tetranucleotide and 30 cryptic simple repeat sequences. Thirty microsatellite loci were randomly selected to characterize the population, of which 24 were found to be polymorphic. The expected heterozygosity ranged from 0.0813 to 0.7279 (mean 0.4533) and the observed heterozygosity ranged from 0 to 1 (mean 0.3800). The results indicated that there was limited migration between the three subpopulations and a significant degree of genetic differentiation ($F_{ST} = 0.5098$) between populations implying that gene flow has been disrupted as a result of habitat fragmentation. The molecular markers have a potential application in population management, CITES enforcement and the forensic detection of specimens in international trade. © 2008 Springer Science+Business Media B.V.