



Development of microsatellite markers of vandaceous orchids for species and variety identification

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ABSTRACT. Vandaceous orchids are a group of orchid genera in the subfamily Vandoideae. Among this group, *Mokara*, *Phalaenopsis*, and *Vanda* are the most popular and commercially important orchids in Thailand. Novel microsatellite markers were developed from *Mokara*, the intergeneric hybrid from 3 genera *Vanda*, *Ascocentrum*, and *Arachnis* by using enriched method. Six primers from this study plus one primer previously developed from *Vanda* genome, a total of 7 markers, were selected to characterize 4 orchid genera (*Mokara*, *Vanda*, *Rhynchostylis*,

and *Ascocenda*). The observed and expected heterozygosities varied in the 4 genera from 0.0000-1.0000 and 0.0000-0.8765, respectively. The transferability of these primers was also investigated in 76 vandaceous orchids from 12 genera. Three primer pairs, MOK26, MOK29, and MOK62, could successfully amplify the DNA of all samples, while MOK103 could be used with most of the samples. The total number of alleles from 76 samples ranged from 3 to 19 alleles per locus, with an average of 8.5714. Therefore, these markers could be used for variety/species identification, certification and protection, genetic diversity, and evolutionary studies.

Key words: Microsatellite markers; SSR markers; Vandaceous orchids; Orchid identification