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Molecular Characterization of Ginger (z. Officinale rOSC.) by Microsatellite DNA

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Ginger (*Zingiber officinale* Rosc) is a source of important pharmacologically active constituents such as gingerols. Despite their important, a high variation of gingerols content may occur from place to place due to influence of environment and/or genetic factors. In the present study, the ginger-leaf plantlets derived from Sabah, Bukit Tinggi and Tanjung Sepat (China cv.) have been used to assess genetic diversity. Three single microsatellite oligo-nuclide primers: $(CATA)_5$, $(GATA)_5$ and $(GAC)_6$ used as DNA molecular markers in the polymerase chain reaction. The PCR products revealed 7 polymorphic bands with a polymorphic rate about 17.9%. Furthermore, the UPGMA cluster analysis revealed a high degree of similarity at 0.875 between ginger from Bukit and Tanjung Sepat and a lower degree of similarity at 0.643 to Sabah ginger. A small genetic similarity at 0.563 was observed between ginger from Sabah and Tanjung Sepat. Thus, a simple sequence repeats (SSR) marker has been successfully used for the detection of polymorphic DNA of the genotypes studied.

Keywords: Genetic-polymorphisms, Ginger (*Zingiber officinale* Rosc.), Microsatellite DNA.