

Application of Intersimple Sequence Repeats (ISSR) Technique in DNA Fingerprinting and Genetic Relationship among *Ganoderma* Species

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ABSTRACT

This study was conducted to utilize ISSR technique to determine phylogenetic relationship among *Ganoderma* species collected in Thailand. Nine *Ganoderma* species were collected and isolated for differentiation. Sixteen primers were utilized for DNA finger printing and differentiation of genetic relationship among *Ganoderma* species.

The results of the study revealed that 11 primers were able to differentiate and gave amplified fragments out of 16 primers used. A total of 105 DNA fragments were amplified and 103 fragments were polymorphic with a value of 98%. The above primers were able to amplify fragments of 7 *Ganoderma* species. Hence, these primers will serves as a marker for strain identification among species of *Ganoderma*. It was observed further that *Ganoderma* isolate coded as MG3 have distinct morphology which resulted to have higher amplified fragments compared to the other species. The result of the phylogenetic tree indicated that MG3 isolate was genetically distant from other species. The results of the study therefore proved that ISSR is efficient method for polymorphic identification of *Ganoderma* species with high degree of polymorphism.

Keywords: *Ganoderma* species; intersimple sequence repeats (ISSR), DNA fingerprinting, phylogenetic relationship