4 Study on the Identification and Genetic Relationship of *Adenophora radix* and *Codonopsis radix* Using RAPD

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Recently, *Codonopsis radix* has been sold instead of *Adenophora radix* in herbal medicine market. Therefore, this study was conducted to develop the genetic marker and to examine the phylogenetic relationships between two *Adenophora triphylla* (Thunb.) A. DC. var. *japonica* Hara, two *Adenophora radiatifolia* Nakai, five *Codonopsis lanceolata* (Sieb. et Zucc) Trautv. using RAPD analysis. Forty decarmer oligonucleotide primers were screened in the RAPD analysis to identify of these herbal medicine. Three primer generated distinct markers were each specific to *Adenophora radix* and *Codonopsis radix*. And based on these RAPD patterns, the genetic relationships between three herbal medicine were analyzed by UPGMA (Unweight Pair Group Method with Arithmatic mean) method. As a result, genetic relationships in the *Adenophora radix* and *Codonopsis radix* were classified into two major subgroups on the basis of the genetic similarity coefficient. The technique proved that reproducibility could be obtained not only from fresh materials but from dried materials. We expected that the result of this study provide the useful information for the genetic distance, and the powerful method to identify in medicine plant species.

Keywords: *Adenophora radix* and *Codonopsis radix*, RAPD, identification, dried root