

Analysis of genetic Relationship among *Sinomeni Caulis et Rhizoma* based on *trnL-F* sequences

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trnL-F 영역의 염기서열을 이용한 방기의 유연관계 분석

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Objectives

This study was conducted to identify the exact original plant of *Sinomeni Caulis et Rhizoma* and to evaluate the genetic relationship among herb medicine called Bang Gi on the market.

Materials and Methods

○ Materials

Thirty samples were collected from fresh leaves and purchased from a commercial supplier in Korea, China and Japan.

○ Methods

The genomic DNA of each sample was extracted according to the manual for the genomic DNA plant kit (Macherey-Nagel, Germany). Primers *trnF* and *trnL* described by *Taberlet et al.* (1991) were used to amplify the *trnL-F* intergenic spacer of chloroplast DNA. The nucleotide sequences of the resulting inserted DNA fragments were determined by an automatic DNA sequencer (ABI, 3730 Applied Biosystems, U.S.A.).

Results

There are many variations in *Sinomeni Caulis et Rhizoma* that are currently commercialized as an herbal medicine. We were compared the base sequences of *trnL-F* intergenic space of chloroplast DNA. According to the results, *Sinomenium acutum*, *Cocculus orbiculatus*, *Akebia triflojata* and *Stephania* specis were divided into four groups. *Sinomenium acutum* (I Group), *Cocculus orbiculatus* (II Group) and *Akebia triflojata* (III Group) showed 99% homology with NCBI(national center for biotechnology information) genbank number EF143902, EF143891 and AF335294 separately. On the other hand, *Stephania* specis (IV Group) were divided into two groups. Nevertheless, the *trnL-F* sequence analysis was a useful approach for constructing phylogenetic relationships among accessions of *Sinomeni Caulis et Rhizoma*.

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Table 1. Materials used in this study

No.	Medicine name	Collection place	Collection date	Voucher No.	No.	Medicine name	Collection place	Collection date	Voucher No.
1		Korea	2010.10.14	112-1-1*	16		Korea	2011.04.01	11B1022 ^A
2		Korea	2010.10.14	112-1-2*	17		Japan	2011.04.01	11B1009 ^A
3		Korea	2010.10.15	112-1-3*	18		China	2009.01.12	ㄷ-8-3 ^A
4		Korea	2011.04.27	112-2-1*	19		China	2009.01.12	ㄷ-8-4 ^A
5		Korea	2011.04.28	112-2-2*	20		China	2011.07.21	35-3-6*
6		Korea	2011.04.28	112-2-3*	21		China	2011.07.21	35-3-7*
7	Sinomeni	Korea	2011.06.02	112-3-1*	22	Sinomeni	China	2011.07.21	35-5-2*
8	Caulis et	Korea	2011.06.04	112-3-2*	23	Caulis et	China	2011.04.01	11B1010 ^A
9	Rhizoma	Korea	2011.04.01	11B1001 ^A	24	Rhizoma	China	2011.04.01	11B1011 ^A
10		Korea	2011.04.01	11B1003 ^A	25		China	2011.04.01	11B1012 ^A
11		Korea	2011.04.01	11B1004 ^A	26		China	2011.04.01	11B1024 ^A
12		Korea	2011.04.01	11B1007 ^A	27		China	2011.07.14	11B1029 ^A
13		Korea	2011.04.01	11B1018 ^A	28		China	2011.07.14	11B1032 ^A
14		Korea	2011.04.01	11B1019 ^A	29		China	2011.07.14	11B1033 ^A
15		Korea	2011.04.01	11B1021 ^A	30		China	2011.07.11	S2 ^A

* : fresh leaf, ^A : dried herb medicine

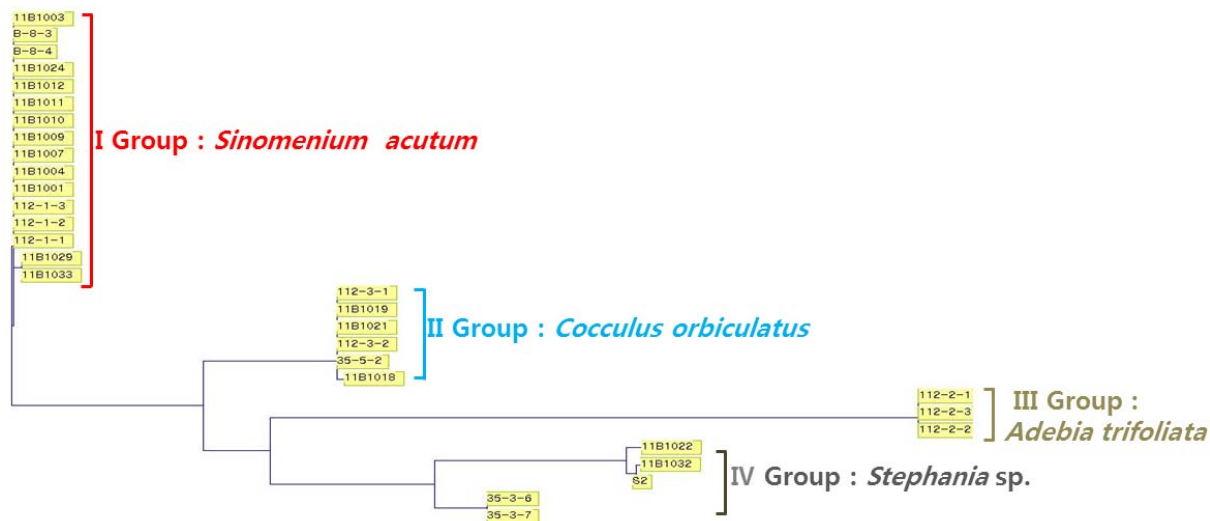


Fig. 1. Classification of *Sinomenium acutum*, *Cocculus orbiculatus*, *Adebia trifoliata* and *Stephania* species in the sequences based on the *trnL-F* region of cpDNA.