

Discrimination of 21 *Artemisia* Herbs collected in Korea  
by PCR-RFLP Based on *trnL-F* region

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Objectives

It has been reported that 41 *Artemisia* species are distributed throughout Korea. Among those *Artemisia* species, *A. annua*, *A. apiacea*, *A. princeps*, *A. argyi*, *A. capillaries*, *A. gmelini*, *A. japonica*, *A. keiskeana*, and *A. selenensis* are primarily used as medicinal materials in traditional Oriental medicine. Identifying these many kinds of *Artemisia* herbs morphologically is very ambiguous because young leaves of *Artemisia* herbs are very similar among them in early spring when *Artemisia* herbs are generally used for medicine, and undergo extreme variations depending on parts and developmental stages, and *Artemisia* herbs are generally distributed in dried or sliced in the market. In this study, we performed PCR-RFLP on *trnL-F* region in order to derive a way of identifying *Artemisia* plants at DNA level.

Materials and Methods

1. *trnL-F* region was amplified by *trnC* and *trnF* primer (Taberlet et al. 1991, Fig. 1)

- Forward primer *trnC*: 5'- CGAAATCGGTAGACGCTACG-3'

- Reverse primer *trnF*: 5'- ATTTGAACTGGTGACACGAG-3'

2. PCR-RFLP was conducted with *HinfI* restriction enzyme recognizing 5'-G/ANTC-3'.

## Results

1. Specific banding patterns for *A. apiacea*, *A. keiskeana* and *A. sieversiana* will be able to be sufficiently applied as a DNA marker for discriminating them from other *Artemisia* species of Korea (Fig. 2).

2. PCR-RFLP markers using *Hinf*I restriction enzyme based on *trnL-F* region will help to supply correct materials for developing new medicines or food using *Artemisia* herb resources, particularly, *A. apiacea*, *A. keiskeana* and *A. sieversiana*, and to keep the legitimate distribution in the market.



Fig. 1. A schematic diagram of *trnL-F* region of cpDNA. Arrows indicate the directions and positions of the primers.

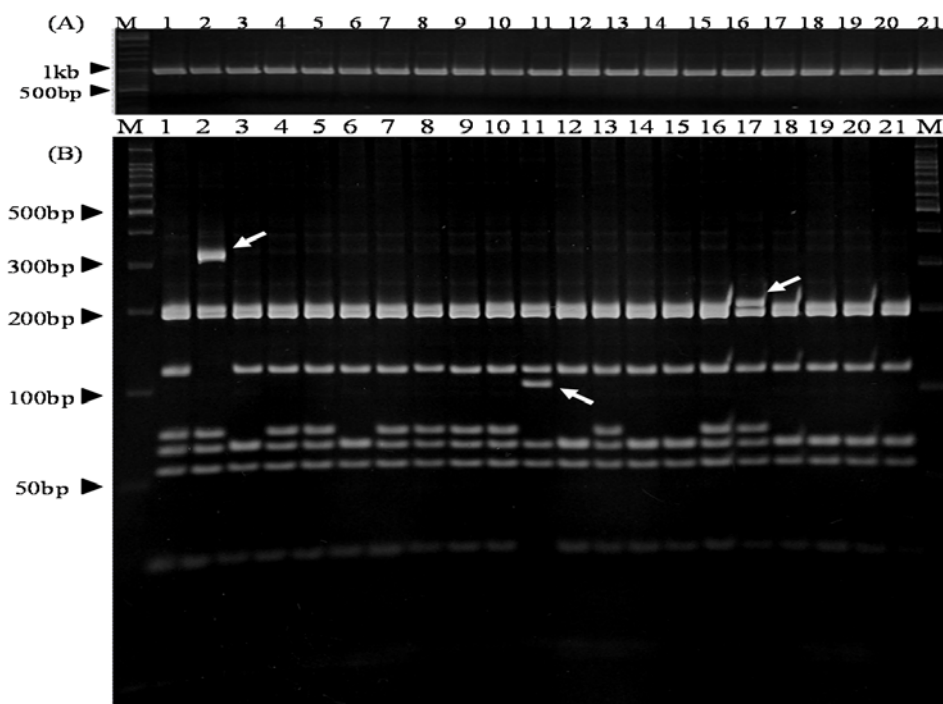


Fig. 2. PCR amplification of *trnL-F* region and PCR-RFLP patterns restricted by *Hinf*I from 21 Korean *Artemisia* species. Arrows indicate discriminable specific bands. Lane M: 100bp molecular weight marker (Promega).