

## A Taxonomic Review of *Polygonatum Rhizoma* and *Polygonati Odorati Rhizoma* Based on Phylogenetic analysis

Mi Young Lee, Seong Jin Lee, Seong Mi Hong and Byong Seob Ko\*

Department of Inspection Enterprise, Korea Institute of Oriental Medicine, Seoul 135-100, Korea

### Objectives

The objectives of the present study were to estimate the discriminatory power of RAPD markers in describing the variations of *Polygonatum* species and to assess the use of this tool in the taxonomic study of this genus.

### Materials and Methods

#### 1. Material

A total of 23 accessions of *Polygonatum* were studied. 3 species of *P. Rhizoma* and 8 species of *P. Odorati Rhizoma* were used in this study.

#### 2. Methods

DNA was isolated from fresh leaves following the protocol of Doyle and Doyle (1990). Sixty nucleotide primers, obtained from UBC Technologies Inc. were used to amplify 10ng of DNA as described by Williams et al (1990)

### Results and Discussion

The phylogenetic relationship of *Polygonatum* species were analyzed by comparing RAPD analysis. *Polygonatum Rhizoma* is called "Whang-jung" and used as a source plant of Korean pharmacopeia. *Polygonatum* species, *Polygonati Odorati Rhizoma*, are also called "Wui-yu" is used as the Korean Pharmacopeia. From the cluster analysis by using polymorphic bands, the genus *Polygonati* were divided into 2 groups at similarity coefficient. The result was corresponded closely to morphology-based classification and RAPD analysis. The phylogenetic tree revealed that *Polygonatum sibiricum* Red and *P. stenophyllum* are most closely related. Moreover, *P. falcatum* A. Gray was included in a group of the *Polygonati Odorati Rhizoma*.