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Development of AFLP Markers for Authentication of Ginseng

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Objectives

Panax ginseng is one of the most important medical plants in the orient. The disguisement of Chinese and American ginseng into Korea ginseng becomes a problem in recent years in Korea and abroad. Amplified fragment length polymorphism (AFLP) analysis has been highlighted as an efficient method for the detection and study of the genetic polymorphism in plant species.

We reported the genetic analysis and marker development to distinguish between *panax ginseng* and others using AFLP analysis

Materials and Methods

1. Materials: Plant – ginseng (*Panax ginseng, Panax quinquefolius, Panax japonicum*)
2. Methods
   1) Extraction of Genomic DNA : The genomic DNA was extracted from leaves or roots.
   2) Digestion of genomic DNA by EcoRI and MseI and adapter ligation
   3) Pre-selective amplification and selective amplification
   4) Acrylamide gel electrophoresis and silver staining
   5) Sequencing and conversion of AFLPs to sequence-specific PCR marker
   6) PCR amplification and electrophoresis

Results and Discussion

Representative AFLP analysis was performed the *P.ginseng, P.quinquefolius and P.japonicum.* We used several combinations of primer pairs, EcoRI+AC/MseI+CTG, EcoRI+AT/MseI+CTT, EcoRI+ACA/ MseI+GTT and EcoRI+TA/MseI+GTT. We obtained specific bands among *P. ginseng, P.quinquefolius and P.japonicum* by AFLP analysis. And we carried out sequencing of these bands and the specific primer designed from the sequences of AFLP primers. From these results that AFLP analysis is capable of differentiating *P.ginseng, P.quinquefolius and P.japonicum.*

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