

DNA 마커를 이용한 목향(Aucklandiae Radix)류 식물 감별

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Discrimination of medicinal herbs utilizing Muxiang (Aucklandiae Radix) by DNA Marker(s)

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실험목적 (Objectives)

Aucklandiae Radix (Muxiang) is derived from the dried root of *Aucklandia lappa*, a perennial plants of the family Asteraceae, used as a medicinal herbs for digestive system disorders, including loss of appetite, indigestion, diarrhea and abdominal pain. Owing to the morphological similarity and trade names, Vladimiriae Radix (Chuan-Muxiang), the roots of *Vladimiria souliei* and *V. souliei* var. *mirabilis* and Inulae Radix(Tu-Muxiang), the roots of *Inula helenium* and *I. racemosa*, as well as Aristolochiae Radix (Qing-Muxiang), the roots of *Aristolochia debilis* and *A. contorta* which containing renal toxic aristolochic acid are often used confusedly as substitutes or adulterants of Aucklandiae Radix. Therefore, a reliable authenticatino of Muxiang species is essential for conservation measure and prevention of misuse. In this study, we will reveal the genetic relationship among collected samples based on variation in the determined nucleotide sequences of the ITS and trnL-F intergenic spacer. Forthermore, we develop DNA Marker(s) for the identification and discrimination of Aucklandiae Radix (Muxiang), Inulae Radix(Tu-Muxiang) and Aristolochiae Radix (Qing-Muxiang).

재료 및 방법 (Materials and Methods)

○ 실험재료

Samples of cultivated *A. lappa* (*S. lappa*) and several medicinal plants which have the trade name of Muxiang, including *Vladimiria souliei*, *Inula helenium* in the family of Asteraceae and *Aristolochia deveilis* in the family of Aristolochiaceae were collected from Korea and China.

○ 실험방법

To analyze the genetic relationship among collected samples and to develop an efficient method for the identification of each plant, we determined the nucleotide sequences of the ITS and *trnL-F* intergenic sapcer region of samples.

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실험결과 (Results)

We amplified 685 - 734 bp ITS and 415 - 453bp *trnL-F* intergenic spacer products and confirm whether or not the difference in nucleotide sequences of among the collected samples are sufficient for discrimination. Based on the results, we develop DNA Marker(s) for the identification and discrimination of *A. lappa* (Aucklandiae Radix) and *I. helenium* (Inulae Heleni Radix) from other substitutes and adulterants of Muxiang. Also, we develop common DNA marker to discrimination of *Aristolochia* species.

* 시험성적 (표 또는 그림으로 별장으로 작성할 것)

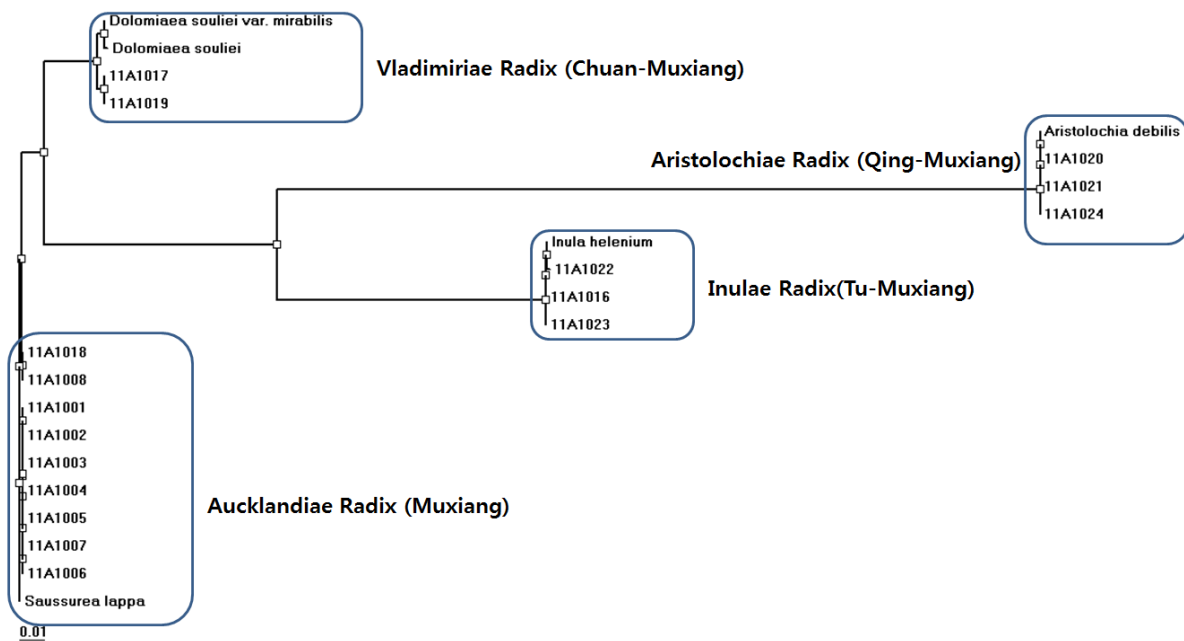


Fig. 1. Dendrogram of Muxiang hergbs based on the nucleotide sequence of ITS