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rDNA 염기서열을 이용한 황금의 품질 오염 조사

한국한의학연구원
채병찬, 육진아, 김영화, 고병섭, 이미영*

A Survey of Quality Decontamination of *Scutellaria* Radix by Nuclear rDNA Sequences

Korea Institute of Oriental Medicine
Byoung-Chan Chae, Jin-Ah Ryuk, Young-Hwa Kim, Byoung-Seob Ko,
Mi-Young Lee*

Objectives

Scutellariae Radix is a plant in the *Labiatae* family. It is usually used as medicine after eliminating its rootlets and exterior cortex. Herbal medicines like *Scutellariae* Radix are not only highly vulnerable to contamination in its production, cultivation, distribution, preservation and marketing environments by microorganisms such as numerous bacteria and fungi or other foreign subjects, but also with high potential of contact with diverse impurities. If elimination of such microorganisms or foreign substances do not take place, it is apprehended that decomposition or mutation by microorganisms would take place and such may lead to deterioration in quality.

Materials and Methods

PCR was performed to amplify the ITS region of rDNA from the total community DNA using the primer set ITS1(TCC GTA GGT GAA CCT GCG) and ITS4(TCC TCC GCT TAT TGA TAT GC). PCR was performed with an initial denaturation step of 95℃ for 7 min; followed by 34 cycles of 94℃ for 30 sec, 51.7℃ for 30 sec, 72℃ for 1 min; followed by a final elongation step of 72℃ for 10 min. The amplified products were purified and cloned using Vector cloning kit. Sequencing was done in Applied biosystems ABI3730 sequencer.

Results and Discussion

In this study, the rDNA base sequences of the *Scutellariae* Radix cultivated or produced from the wild were evaluated in order to identify contamination by microorganisms in this medicine easily decomposed. Among the 24 specimens used, soil fungus (SF) was detected from 13%, 33% and 63% were respectively 99.85% identical to the base sequences of *Scutellariae* (SC) Radix and *Erysiphales* (ER, *Leotinomycetes*) which is usually discovered from *Lycium barbarum* and *Ligusticum chuanxion*. In other words, mycorrhizal fungi, which has symbiotic relationship with

Corresponding author : 이미영 E-mail : mylee@kiom.re.kr Tel : 042-868-9504

plants, is identified inside the root cells of *Scutellariae* Herba. Furthermore, the fact that powdery mildew was discovered indicates that *Scutellariae* Radix used as herbal medicine may deteriorate in quality due to vermin and microorganisms. Thus, the continuance of studies on the correlation between *Scutellariae* Radix and microorganisms according to soil conditions or preservation methods is necessary.

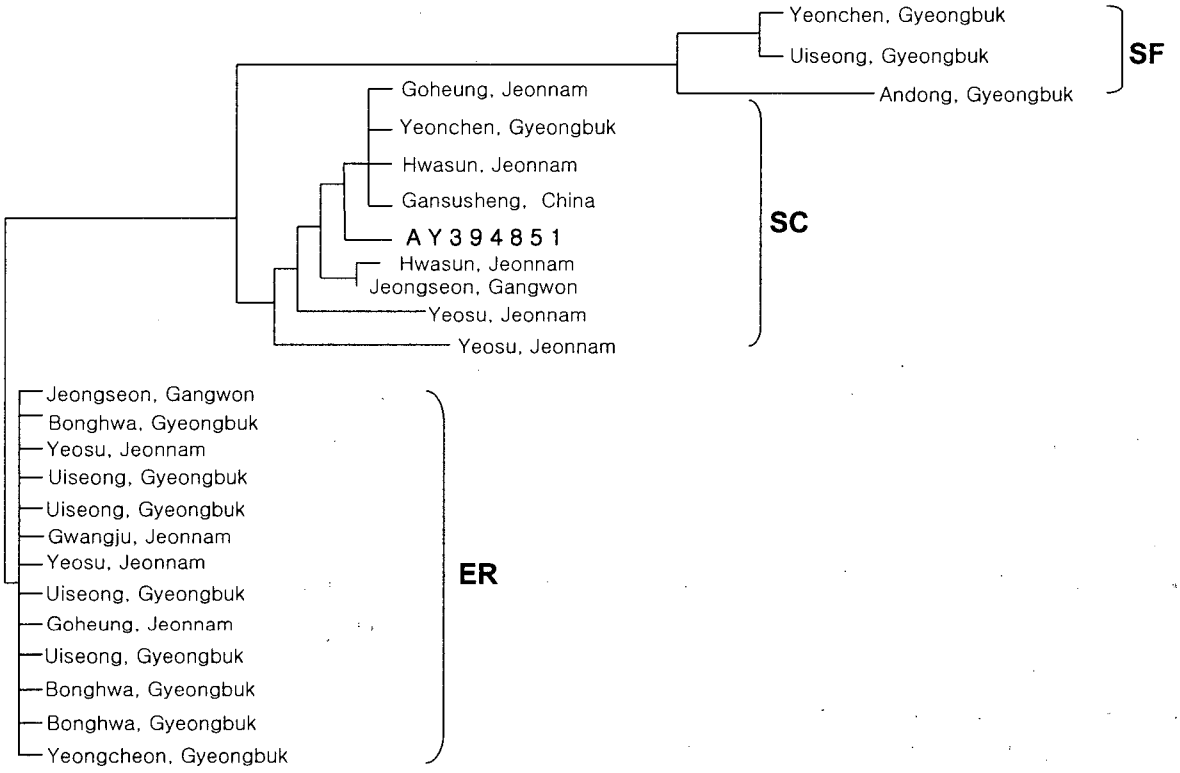

Fig. 1. Dendrogram inferred from ITS sequence of *Scutellariae* Radix