Wook Jin Kim et al., J Biotechnol Biomater 2016, 6:8(Suppl)
http://dx.doi.org/10.4172/2155-952X.C1.068

PNA analysis for authentication of four medicinal *Paeonia* species based on rDNA-ITS sequence

Wook Jin Kim, Yunui Ji, Goya Choi and Byeong Cheol Moon
Korea Institute of Oriental Medicine, South Korea

Genus *Paeonia* is an important medicinal plant in Asian traditional medicines. Among *Paeonia* species, *P. lactiflora*, *P. japonica, P. veitchii,* and *P. suffruiticosa* are pharmaceutically defined in different ways in the national pharmacopoeias in Korea, Japan, and China. The roots of three *Paeonia* species, *P. lactiflora*, P. japonica and *P. veitchii,* commonly has been used as *Paeonia*e Radix, and the root bark of *P. suffruticosa* has been used as Moutan Radicis Cortex in Korean Traditional Herbal Medicine. However, only the roots of *P. lactifolora* and root bark of *P. suffruticosa* is pharmaceutically described as *Paeonia*e Radix and Moutan Radicis Cortex, respectively, in the pharmacopoeia of China and Japan. Since the morphological similarities of root and aerial part of these species, the identification of accurate species is very difficult. In addition, these herbal medicines bistributed as dried root slices or processed medicinal ingredients in the herbal market. Therefore, it is important to authenticate the different species used in these herbal medicines. So, we analyzed DNA barcode sequence of rDNA-ITS region using 17 samples of four *Paeonia* species and then obtained species-specific marker nucleotides that can be used as genetic markers to identify these four plants at the species levels. Based on rDNA-ITS sequences, peptide nucleic acids (PNA) analysis which is of probe-based fluorescence melting curve analysis was carried out to develop a powerful technique for detecting species-specific point mutations, namely marker nucleotide or single nucleotide polymorphism, capable to discriminate the four *Paeonia* species without sequence analysis. Also, this method can provide rapid and efficient authentication of four *Paeonia* species. Therefore, PNA analysis of four herbaceous *Paeonia* species will help to accurately authenticate each species and standardize the origin and quality of *Paeonia*e Radix and Moutan Radicis Cortex.

Biography

Wook Jin Kim is currently a Senior Research Scientist at the Korea Institute of Oriental Medicine (KIOM), South Korea. He has been working on development of DNA marker for discriminating between authentic medicinal plant species and adulterants since 2012.

ukgene@kiom.re.kr

Notes: