Identification of *Fritillaria pallidiflora* using diagnostic PCR and PCR-RFLP based on nuclear ribosomal DNA internal transcribed spacer sequences.

Chong-Zhi Wang, Ping Li, Jia-Yi Ding, Guo-Qian Jin, Chun-Su Yuan

1Key Laboratory of Modern Traditional Chinese Medicines, and Department of Pharmacognosy, School of Traditional Chinese Medicine, China Pharmaceutical University, Nanjing, P. R. China
2Tang Center for Herbal Medicine Research, and Department of Anesthesia & Critical Care, The Pritzker School of Medicine, The University of Chicago, Chicago, Illinois, USA

Letter

© Georg Thieme Verlag KG Stuttgart · New York

Identification of *Fritillaria pallidiflora* Using Diagnostic PCR and PCR-RFLP Based on Nuclear Ribosomal DNA Internal Transcribed Spacer Sequences

Abstract

*Fritillaria pallidiflora* Schrenk (Liliaceae) is a commonly used antitussive herb. There are 9 species of *Fritillaria* recorded as herbal drugs in the Chinese Pharmacopoeia. The other species are often marketed as *F. pallidiflora*, and thus, the therapeutic effects of *F. pallidiflora* are not achieved. Methods to distinguish *F. pallidiflora* from the 8 other species of *Fritillaria* are limited by the current morphological and chemical methods. In this study, we report two molecular authentication methods based on the sequences of nuclear ribosomal DNA internal transcribed spacer (nrDNA ITS) regions. For diagnostic PCR, we designed a pair of species-specific primers to authenticate *F. pallidiflora*. The PCR program consisted of only two steps for every repeated cycle. For PCR-RFLP, we identified a distinctive site which can be recognized by the restriction endonuclease *Eco8I* in the nrDNA ITS1 region of *F. pallidiflora*. PCR-RFLP analysis was established to differentiate *F. pallidiflora* from the other species of *Fritillaria*. These methods provide effective and accurate identification of *F. pallidiflora*.