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Studies on Adulteration and Misusage of Gentianae Radix in Taiwan

YA-HUI HSU, PEI-YI CHEN, WEN-HUI CHEN, FANG-SU LIU, CHI-FANG LO
AND JER-HUEI LIN

Pharmacognosy Division

ABSTRACT

The botanical origin of Gentianae Radix is the dried root of *Gentiana macrophylla* Pall., *Gentiana straminea* Maxim., *Gentiana crassicaulis* Duthie ex Burk. or *Gentiana dahurica* Fisch. Because of the morphological similarities of Gentianae species, alternatives and adulterants were found and reported in literatures. In order to identify the botanical origins of commercial Gentianae Radix in Taiwan, fifty samples, purchased from market, were distinguished from authentic materials by morphology, microscopy, thin layer chromatographic analysis and DNA sequencing.

Identification approaches were established in this study and applied to identify botanical origins of samples. The results showed that 46 out of 50 samples (92%) were Gentianae Radix, including 29 of *G. crassicaulis*, 13 of *G. straminea* and 4 of *G. dahurica*. 4 out of 50 samples were adulterants, including 3 of *G. zekuensis* and 1 of *G. tianschanica*.

Key words: *Gentiana macrophylla*, *Gentiana straminea*, *Gentiana crassicaulis*, *Gentiana dahurica*, *Gentiana zekuensis*, *Gentiana tianschanica*, identification