The source plants and the chemical composition of the passion flower products available as dietary supplements

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Abstract

In our continuing research on guarantee for the safety of dietary supplements derived from medicinal plants, commercial passion flower products were investigated for their botanical origin on the basis of nrDNA ITS1 and cpDNA trnL-F IGS sequences, as well as with analyses of flavone glycoside and β-carboline alkaloid composition using LC-PDA-MS. Both nuclear and chloroplast DNA sequences well distinguished *P. incarnata*, from other species of the same genus, such as *P. edulis*, *P. caerulea*, *P. quadrangularis* and others. Three ITS1 genotypes were found in passion flower products which were assigned to *P. incarnata*, *P. edulis* and *P. edulis f. flavicarpa* with reference to the sequences of referential *Passiflora* plants. Flavone glycoside composition showed the species- and forma-specific variation and the profile of each product supported the results of DNA sequence analyses. Fourteen passion flower products were analyzed for their source plant species, and were shown to be made from *P. incarnata* (nine samples) and *P. edulis* sensu lato (five samples) on the basis of the DNA and LC-PDA-MS analyses. Furthermore, β-carboline alkaloids such as harmine and harmaline which were reported as the constituents of *P. incarnata* were not detected in the products.

Plant materials legally restricted to medicinal use in Japan are specified by their scientific names and listed on the Pharmaceutical Affairs Bureau Notification. However, those for general herbal products are not specified. According to the results, plant material used for general herbal products are suggested to be specified by scientific names in order to ensure their safety.