

HPLC-PDA를 이용한 포공영(蒲公英) 종별비교

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Comparative analysis of the various Taraxaci Herba by HPLC-PDA

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Objectives

Taraxaci Herba have been widely used as a medicinal plant and food in Korea. This plant was listed on KHP and origin is the definition of *Taraxacum platycarpum* H. Dahlstedt and same species. To distinguish the original plant, we were collected 135 samples in 5 species (*T. ohwianum*, *T. platycarpum*, *T. coreanum*, *T. officinale* and *T. platyepidum*) which were considered of area (mountainous, Namhae, JeJu in Korea and East-North area in China) and harvest period (May and July). Pattern analysis was performed by HPLC and PCA methods.

Materials and Methods

○ Plant Materials

4 species were *T. ohwianum*, *T. platycarpum*, *T. officinale* and *T. coreanum* collected in mountainous areas, southern region, jeju (Island) in Korea and *T. platyepidum* was gathered in est-north area in China. The dried powdered samples (3g) were extracted twice with 100% methanol (25 ml) at 1 hr under ultrasonic extraction. Prior to injection, 2.0 mL was filtered through a 0.20 μ m membrane filter (PALL Corporation, Ann Arbor, MI, USA). Each sample solution was analyzed in triplicate.

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- HPLC analysis Methods

The HPLC system was performed by HPLC system (Waters, 2695 model) coupled with photodiode array detector (Waters, 2996 model) and data processing was carried out Empower software (Waters Co., Milford, MA, USA). Separation was performed with Symmetry C₁₈(4.6 × 250 mm I.d., 5 μm, Waters, Milford, MA, USA) using mixture methanol (solvent A) and 0.1% acetic acid in water (solvent B): 22-78% A (0-28 min), 29-71% A (28-54 min), 55-45% A (54-67 min), 100-0% A (54-67 min), 100-0% A (67-75 min). The flow rate was 0.7 ml/min and the sample injection volume was 10 μl. The UV wavelength was scanned over the range of 210 ~ 400 nm and recorded at 280 nm. Sample peaks were assignment according to retention time and the UV spectra of Chlorogenic acid and ruteolin in the chromatogram.

Results

Quantitative analyses of five species Taraxaci Herba and PCA analysis were based on peak area in chromatogram. As a result, we could distinguish *T. ohwianum* and *T. platyepidum* form others. The three species which were *T. ohwianum*, *T. officinale* and *T. coreanum* in mountainous areas was able to classify, however samples of another region could not categorize. Grouping of origin plants which were collected in the Namhae and Jeju (Island) were difficult. Number peaks and contents of two compounds for samples which were collected at May were more than another.