

Comparison of Total Polyphenol, Total Flavonoid Content and Antioxidant Activity of *Codonopsis lanceolata* Extracts Stored at Different Temperatures and for Different Durations

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[Introduction]

As an herb, *Codonopsis lanceolata*(CL) is widely used in food preparation, but its medicinal application has not been explored yet in Korea. The roots of CL have been used as a tonic crude drug and an edible plant in Korea, and it is well known to affect various pharmacological effects for human health and its consumption is increasing. The objection of this study was to investigate the change of phenolic content according to storage temperature and storage period from root extract of CL, and investigate the antioxidant activity of the extracts by in vitro methods.

[Materials and Methods]

CL grown in Jeju region was purchased from a farm. The roots of CL at different temperatures (5°C, 15°C, 25°C, 35°C, and 45°C) using thermo-chamber and storage periods (0, 15, 30, 45, 60, 75, and 90 days) were freeze dried and ground to a fine powder. The powder was stored at -20°C until analyses. Total phenols were determined by the modified method the Folin-Ciocalteu assay. Total flavonoid was measured using the modified method of Zhishen *et al.* (1999). The spectrophotometric analysis of ABTS scavenging activity of PG was determined according to the method described previously (Re *et al.*, 1999). The nitrite scavenging activity was determined according to a method using Griess reagent.

[Results and Discussions]

Total polyphenol and flavonoid content decreased with increasing temperature, and the content was relatively high at temperature of 15°C or less. In different storage period conditions, the total polyphenol and flavonoid content tended to decrease as the storage period became longer. The DPPH activity was presumed that there was not a large change in the scavenging activity when stored for below 60 days or at temperature below 25°C. The shorter the storage period and the lower the storage temperature, the ABTS radical scavenging activity was relatively high. The nitrite scavenging effect was the highest at pH 1.2 in all samples tested. In addition, phenolic compounds appear to be responsible for the antioxidant activity of CL extracts. Therefore, the results of current study suggested that the CL root may assist in the potential biological activities, and can be used as a source of human health products.

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