

다양한 용매에 따른 쑥의 페놀 함량과 항산화능의 평가
건국대학교 : 김하정, 권정웅, 김선진, 김은혜, 송성현, 용수정, 장미소,
이예지, 정석준, 정일민*

Evaluation of The Total Phenolics and Their Antioxidant Activity of
Various Solvent Extracts from *Artemisia princeps*

College of Life and Environment Science, Konkuk University
Ha-jung Kim, Jung-woong Kwon, Sun-jin Kim, Eun-hye Kim, Sung-hyun Song,
Soo-jung Yong, Mi-so Jang, Ye-ji Lee, Suk-jun Jung and Ill-min Chung*

Objectives

Many Korean wild vegetables have been used for herbal remedy in Korea. Especially, *Artemisia princeps* have played a major role in herbal medicine. This study was performed to determine the contents of total phenolics and evaluate antioxidant activities of various solvent extracts in *Artemisia princeps*. The total phenolics of *Artemisia princeps* were determined according to Folin-Ciocalteu method. And the antioxidant activity of *Artemisia princeps* was measured by DPPH method.

Materials and Methods

○ Materials

Artemisia princeps was purchased from local market and cleaned.

○ Methods

- Preperation of samples and Extraction

All samples were air-dried at room temperature. Dried plant materials were ground in mixer to make powder form. 100g of samples were extracted by stirring them with methanol and filtered through Whatman No. 1 filter paper. After filtration, rotary evaporation was performed to remove methanol. All extracts from this procedure were dissolved with each solvent(water, hexane, ethyl acetate).

- Estimation of Total Phenolics

The total phenolic was determined by using Folin-Ciocalteu method with some modification. And total phenolic contents are expressed as gram of gallic acid equivalent per gram plant extract. The absorbance was measured spectrophotometrically at 750nm using OPTIZEN POP UV-spectrophotometer.

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주저자 연락처(Corresponding author) :정일민 E-mail : imcim@konkuk.ac.kr Tel : 02-450-3730

- Determination of Free Radical Scavenging Activity.

The effect of *Artemisia princeps* on DPPH radical was determined according to the method Shyamala *et al* (2005). All spectrophotometric data were acquired using OPTIZEN POP UV-spectrophotometer. The activity of scavenging the DPPH radical was calculated using the following equation:

$$\begin{aligned} & \% \text{DPPH radical scavenging effect} \\ & = \frac{(\mathbf{A}_{\text{control}} - \mathbf{A}_{\text{sample}})}{\mathbf{A}_{\text{control}}} \times 100 \end{aligned}$$

Results

The results from the Table 1. indicate that different solvents used may have different effects on total phenolics. And using water as a solvent is the best way to acquire total phenolics. The water extract of *Artemisia princeps* found to have highest phenolics(137.77±1.71). And the ethyl extract of *Artemisia princeps* showed the lowest contents(55.81±2.69).

As can be seen from the Figure 1, among the four extracts, water extract exhibited the greatest scavenging activity (93.17%) of DPPH radical followed by methanol, hexane, and ethyl acetate(93.05%, 71.93%, 57.21%, respectively).

Table 1. The total phenolics for different extracts.

Extraction solvent	Phenolic content (mg/g ² GAEs extract)
Methanol	127.06±3.03 ¹⁾
Water	137.77±1.71
Hexane	57.01±0.25
Ethyl acetate	55.81±2.69

¹⁾The values are expressed means±S.D. of three parallel measurements.

²⁾GAEs. gallic acid equivalentents

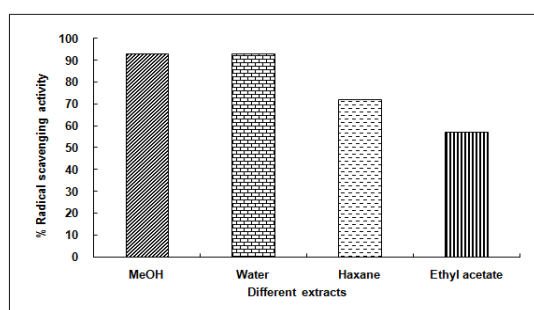


Figure 1. The total antioxidant activity of *Artemisia princeps* extracts at 50µg/mL by DPPH radical scavenging activity assasy.