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Antioxidant effects of *Artemisia princeps* PAMPANINI. extract fractions

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싸주아리쑥 추출물 분획의 항산화 효과

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실험목적 (Objectives)

It is known that the main causes of ageing and diseases include the accumulation of the harmful substance which is created in the metabolic process and the creation of lipoperoxide within cells by the free radical in the body. Until now, in order to prevent the creation of the free radical element, a countless number of synthetic antioxidants such as butylated hydroxytoluene (BHT), butylated hydroxyanisole (BHA), propyl gallate (PG) and tertiarybutylhydroquinone (TBHQ) has been used. However, the excessive intake of such antioxidants is known to cause a serious poisonous influence on one's liver, lungs and circulating system. Therefore, it is necessary to develop a safe natural antioxidant. In Korea, *A. princeps* Pampanini has been traditionally used as an ingredient for the oriental medicine. It belongs to the compositae family. It is also a perennial plant which is included in the category of Dicotyledones. There are approximately 38 kinds of plants included in the Artemisia family. Also, *A. princeps* Pampanini is widely distributed around Ganghwa-do and near the west coast. It has been used as an ingredient for the folk remedy and the oriental medicine for a long time. In order to maximize the separating efficiency for the useful element of the DPPH free radical scavenging activity on *A. princeps* Pampanini, the main fraction for the activity has been researched in terms of various related fields.

재료 및 방법 (Materials and Methods)

○ Materials

Artemisia princeps Pampanini (Sajuarissuk) was grown in farm of Dongguk University in Ilsan until it was collected in April, 2010. Then, it was dried naturally as a sample and was used in the experiment.

○ Methods

By regularly taking 100g of the sample of *A. princeps* Pampanini which had been dried naturally in the shade and using 2L of MeOH, the extracting process was repeatedly executed for 24 hours three times in the room temperature. After the extraction process was completed, the extracted material was concentrated by using the vacuum evaporator. As a result, it was possible to get the concentrated liquid of *A. princeps* Pampanini. The concentrated liquid was melted in 800ml of water. Then, by using the solvent (Hexane, CH_2Cl_2, EtOAc, n-BuOH), it was divided according to each polarity. Then, each segment went through the vacuum evaporator again.

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Through such a process, the DPPH free radical scavenging activity was measured.

실험결과 (Results)

1. In the MeOH extract fraction of *A. princeps* Pampanini, EtOAc and n-BuOH showed the highest level of anti-oxidizing activation, followed by CH_2Cl_2 > DW > hexane, showing that EtOAc and n-BuOH had the highest proportion of the chemical compounds with anti-oxidizing capacity.

2. The DPPH free radical scavenging activities of the EtOAc and n-BuOH extracts were at similar levels with those of the existing anti-oxidant, BHT (butylated hydroxytoluene), as well as with α-Tocopherol, indicating the potential as a anti-oxidant for them.

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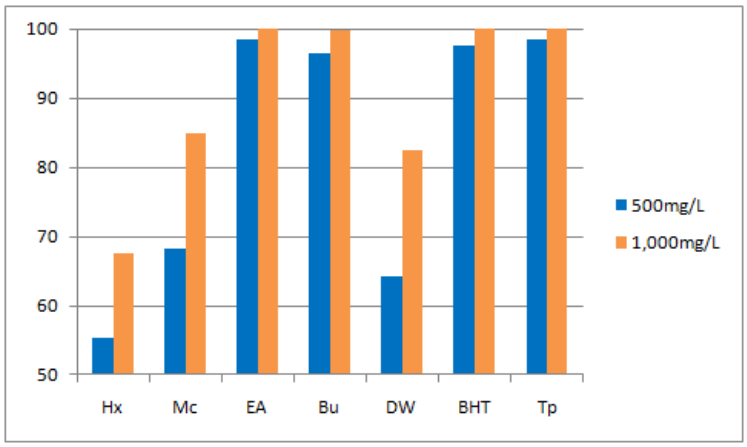
Fig.1. DPPH free radical scavenging activity of the extract.(%)



* Hx: hexane extract; MC: CH_2Cl_2 extract; EA: EtOAc extract; Bu: n-BuOH extract; DW: water extract; BHT: butylated hydroxytoluene; Tp: α-Tocopherol