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# 용매별 아티초크 꽃 추출물의 항산화 효과

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# Antioxidant effects of Artichoke (*Cynara Scolymus L).* flower by various solvent extract

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## 실험목적 (Objectives)

Artichoke (*Cynara scolymus L.*) is an ancient herbaceous plant originating from the Mediterranean area. It is widely cultivated in France, Italy, Spain, America and was 1st planted in Viet Nam in early 20th century. Traditionally, Artichoke have been used by the Eclectic physicians as a diuretic and depurative, for the treatment of rheumatism, gout. Nowadays, Some pharmacological studies have shown that extracts of Artichoke significantly increase choleresis, reduce blood cholesterol, antioxidant activities and antibacterial abilities. Even so, there is need still for improvement. The present work aimed to determine the antioxidant of Artichoke flower extracts to confirm the antioxidant potential that is contained in one of natural medicinal plant sources.

## 재료 및 방법 (Materials and Methods)

### ○ Materials

The dried flower of Artichoke were collected from the Thai Phien Agricultural area, Da Lat city, Lam Dong Province, Viet Nam, in the spring of 2011.

### ○ Methods

Dried leaf (200g, respectively) were macerated in 4 liter (Methanol 99%, Ethanol 99%, Ethy Acetate 99%, Methyl Chloride 99%, n-Hexane 99%) at least 24 hours. All solvents were evaporated in vacuo at 45°C in 3 times , the residue was kept at $20^0$C. Through such a process, the DPPH and ABTS free radical scavenging activity was measured. The measurement of the DPPH free radical scavenging activity was done by using BLOIS (1958) method, which measures the extent of the electron donation to find out the reducing power of the samples. Solvent extraction according to the cancellation effect in order to compare the control group was used a-tocopherol. The concentration of each sample by taking 100㎕ was dissolved in methanol,100㎕solution of DPPH in methanol is prepared. The reaction mixture at room temperature then allow to stand for exactly 30 minutes at 450nm using ELISA reader measured the OD value.

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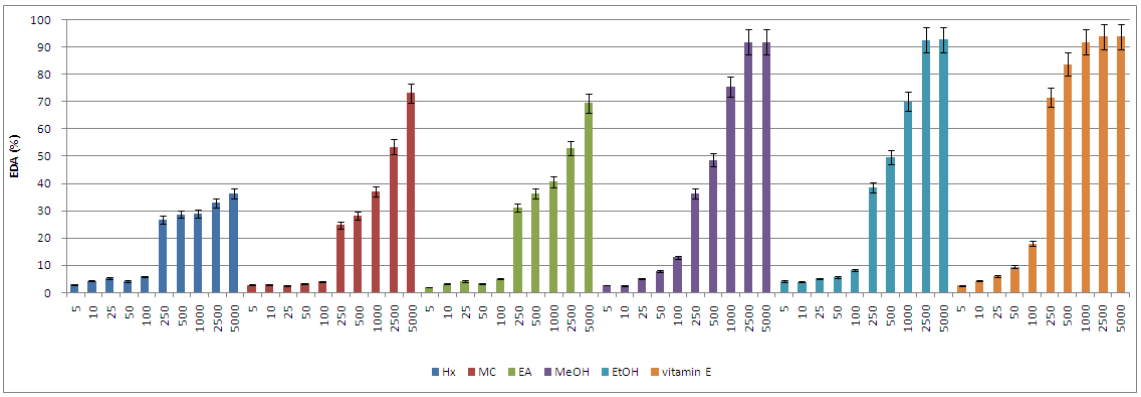
## 실험결과 (Results)

1. In the DPPH free radical scavenging activities, the Methanol and Ethanol solvent extract showed the highest level of anti-oxidizing activation (MeOH 91.78% and EtOH 92.65%). followed by Methyl Chloride > Ethyl Acetate > n-Hexane.
2. The reason the DPPH free radical scavenging activity of hexane extract appeared lower is thought to be because of the small amount of the phenol chemical compounds included in the extract that might lead to the reaction with DPPH. The anti-oxidizing effect is lower with the hexane extract for it is of non-polar solvent. Likewise, the reason why the activity of water extracts, which is of higher polarity, is lower seems to be because of the small amount of the anti-oxidizing agent that could react with DPPH.
3. The DPPH free radical scavenging activities of the Methanol and Ethanol extract were at similar levels with those of the existing anti-oxidant (α-Tocopherol 93.77%) This proves that in Methanol and Ethanol extract contain high antioxidant compound indicating the potential as a anti-oxidant effective.

## 시험성적

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




EtOH: Ethanol extract; MeOH: Methanol extract; MC: Methyl Chloride extract; EA: Ethyl Acetate extract; Hx: Hexane extract; Tp: α-tocopherol; BHT: Butylated hydroxytoluene.