

도라지에서 분리된 사포닌의 oxyradical 포획능 평가

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Evaluation of total oxyradical scavenging capacity of saponins isolated from *Platycodon grandiflorum*

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실험목적 (Objectives)

The root of *Platycodon grandiflorum* (PG) is used as a folk remedy for adult diseases including bronchitis, asthma and pulmonary tuberculosis, hyperlipidemia, and inflammatory diseases. A consistent body of evidence suggests oxidative stress as a direct etiological factor in chronic diseases, and antioxidant agents have been proposed as a potentially effective treatment. These studies were conducted to evaluate oxy-radical scavenging capacity of PG.

재료 및 방법 (Materials and Methods)

○ Materials

Deapioplatycoside E, platycoside E, platyconic acid, platycodin D, 2''-O-acetyl polygalacin D2, platycodigenin, and polygalacic acid were isolated from the roots of PG.

○ Methods

The TOSC assay is based on the ethylene-yielding reaction of alpha-keto-methiobutylic acid with oxyradicals. TOSC values were quantified from the equation $TOSC = 100 - (SA/CA \times 100)$, where SA and CA were the integrated ethylene peak areas obtained for the sample and control reactions,

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respectively. The specific TOSC was calculated by dividing the experimental TOSC by concentration of tested compounds used in the assay.

실험결과 (Results)

Specific TOSC values for all saponins against peroxy radicals were less active than the positive control glutathione (GSH). On the other hand, deapioplatycoside E, platyconic acid, platycodin D and platycodigenin against peroxy nitrites showed stronger peroxy nitrite scavenging capacity than GSH. As sugar number is increased, peroxy radical and peroxy nitrite scavenging capacity of saponins isolated from PG is decreased.

* 시험성적 (표 또는 그림으로 별장으로 작성할 것)

	TOSC value against peroxy radicals (TOSC/mM)	TOSC value against peroxy nitrite (TOSC/mM)
Deapioplatycoside E	172±9	117±5
Platyconic acid	199±38	184±13
Platycodin D	200±36	139±11
2''-O-acetyl polygalacin D ₂	130±21	47±3
Platycodigenin	176±13	127±18
Polygalacic acid	212±5	not available