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Isolavones 보충식이 항암효소계, quinone reductase 발현에 미치는 영향

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콩에 존재하는 isoflavones은 이미 여러 논문에서 암예방지표효소인 quinone reductase의 발현을 조절한다는 것이 보고되었다. 본 연구에서는 숫컷 Sprague-Dawley rats 모델로 하여 isoflavones 보충식이 간의 quinone reductase(QR) 효소활성과 mRNA 발현에 미치는 영향을 조사하였다. 숫컷 Sprague-Dawley rats은 무작위로 대조군(기본식이(AIN-76)) 과 처리군(콩추출물(35g/kg diet), soy isoflavones(1g/kg diet))으로 나누어 사육하였다. 일주일 후 각 군으로부터 채취한 간의 quinone reductase 효소활성을 측정된 결과, 처리군간 효소활성에서 유의적인 차이가 없는 것으로 나타났다. 또한 reverse transcription - polymerase chain reaction (RT-PCR)방법을 이용하여 QR mRNA 발현정도를 조사하였을 때 대조군과 처리군간에 유의적인 차이가 없는 것으로 나타났다.

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Isolation and Characterization of Macrophage-stimulating Polysaccharide from *Perilla frutescens* BRITTON var. *crispa*

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The immune system has great importance because it protects our body from pathogens and keeps homeostasis by eliminating abnormalities in body. Especially, macrophage has anti-cancer activity by secreting physiologically active molecules for example, lymphokines, cytokines, H₂O₂, NO and cytolytic proteinase. This study is focused on screening, extraction and purification of macrophage-stimulating polysaccharide from traditional tea and rice gruel plants. These are known as anti-tumor, anti-viral, anti-coagulation and immune-enhancing activities. Among 90 kinds of traditional tea and rice gruel plant extracts, *Perilla frutescens* BRITTON var. *crispa*, *Sesamum indicum*, *Phaseolus angularis* and *Oryzae sativa* showed higher macrophage cellular lysosomal enzyme activity than others. They were more than 185% activity in 100 µg/ml concentration in comparison with control. Especially, the hot water extract from *Perilla frutescens* BRITTON var. *crispa* showed the most potent activity in a dose-dependent manner. Fraction PFB-1 showing 232% macrophage cellular lysosomal enzyme activity consisted of 50.8% carbohydrate, 4.9% protein and 2.4% uronic acid. Therefore, the isolation and purification procedures were carried out as follows; hot-water extraction, 75% ethanol precipitation, DEAE-Toyopearl 650M and Sephadex G-100 and HPLC. The purified polysaccharide was analyzed its composition fraction by GC and tested its macrophage activities and cytokine production *in vivo* by oral administration of ICR mouse.