[PC1-34] [2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function]

Antioxidant actions of polyphenol QGR and its building blocks on unopsonized zymosan-induced oxidative stress in murine macrophages Raw264.7

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Polyphenol QGR (quercetin 3-O-beta-(2"-galloyl)-rhamnopyranoside) was isolated from Persicaria lapathifolia (Polygonaceae). In this study, we investigated inhibitory effects of QGR and its building blocks (quercitrin, quercetin and gallic acid) on superoxide anion and NO productions in unopsonized zymosan-stimulated murine macrophages Raw264.7. QGR and quercetin showed potent inhibitory effects on unopsonized zymosan-induced superoxide anion production with IC50 values of 3.2 uM and 4.8 uM, respectively. Quercitrin and gallic acid also inhibited the superoxide anion production with IC50 values of 30.9 uM and 21.7 uM, respectively. QGR showed scavenging effect on superoxide anion with an IC50 value of 56.1 uM but quercetin did not exhibit. All of the polyphenols except quercetin did not show inhibitory effects on unopsonized zymosan-induced NO production. Furthermore, quercetin suppressed the expression of iNOS transcript in unopsonized zymosan-stimulated murine macrophages Raw264.7 but QGR and the other building blocks did not inhibit. Quercetin inhibited the NF-kB trasncritional activity in a dose-dependent manner with 77.3% inhibition at 100 uM, 52.6% at 39 uM and 29,3% at 10 uM.

[PC1-35] [2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function]

Inhibitory Effect of the Extract from the Three Crude Drugs, Kalopanax pictus, Pueraria thunbergiana and Rhus verniciflua on NO and TNF-a production in LPS-induced Macrophage 264.7 Cells

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We previously reported the antimutagenicity, anti-lipid peroxidation and antiinflammtory properties of the three Chinese herb medicine, Kalopanax pictus, Pueraria thunbergiana and Rhus verniciflua, which have been used as therapeutics for diabetes mellitus and inflammation in Korea. Since these drugs have been used for the prescriptions consisted of several crude drugs, we investigated whether the extract of the three drugs could increase the individual drugs or not. The three extracts were independently prepared from K. pictus, P. thunbergiana, and R. verniciflua, which extracts were named the K-1, P-1 and R-1 in this order and the extract (KPR-1) was also prepared from the combined plant materials with each same weight of the three drugs. The three extracts, K-1, P-1 and R-1 were fractionated into the EtOAc extracts named K-2, P-2 and R-2 in this order. The extract of KPR-2 was also obtained from KPR-1 by the same way of fractionation. These eight samples were subjected to the nitrite assays in LPS-induced macrophage 264.7 cells and MTT assays. KPR-2 exhibited the most pronounced effect on the inhibition of NO production (IC_{50}:5.1 mg/ml) but showed the weakest cytotoxicity with the value of IC_{50} 434.5 mg/ml on the macrophage 264.7 cells among all the EtOAc extracts. It was evaluated that KPR-2 is a promising inhibitor of NO production, and it also significantly decreased PGE_2, and TNF-a release. Consistent with these observations, the expression NO synthase (iNOS) and cyclooxygenase-2 (COX-2) enzymes was significantly inhibited by KPR-2 in a concentration-dependent manner. These results suggested that the mixture extract and successive fractionation could lead to the better use of anti-inflammatory medicinal crude drugs.

[PC1-36] [2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function]

Effects of Wogonin, a Plant Flavone from Scutellaria Radix, on Skin Inflammation:In Vivo Regulation of Inflammation-associated Gene Expression

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