1 uM, and exhibited an IC50 value of 5 uM on the PMA-induced production of superoxide anions. Building moieties of QGR also showed inhibitory effects with IC50 values of 3 uM by quercetin and 82-89 uM by quercitrin and gallic acid on the production of superoxide anions in PMA-stimualted murine macropahges Raw264.7. Quercetin has been reported to show inhibitory effects on several proinflammatory mediators, and its glycosides reduced the anti-inflammatory potency. Quercetin showed potent inhibitory effect on the production of superoxide anions. Similarly, inhibitory potency on the production of superoxide anions was reduced by quercitrin, but retained by QGR, a quercitrin gallate.

[PC1-14] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Acteoside induce antiproliferation and differentiation on HL-60, Human leukemia cell line, by cell cycle arrest.

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We investigated the in vitro effect of Acteoside , phenylpropanoid glycosides, is a natural product isolated from ···, on proliferation, differentiation and cell cycle regulation in human promyelocytic HL-60 leukemia cells. Acteoside significantly inhibited the proliferation of HL-60 cells, with IC50 of about 30ug/ml. It was also found to be a potent inducer of differentiation in human leukemia derived HL-60 cells through the examination of differentiation markers, as assessed by the reduction of nitroblue tetrazolium, the increase in esterase activities and phagocytic activity, and the expression of CD14 and CD66b surface antigens. Because a hallmark of terminal differentiation is the result of irreversible arrest in the G0/G1 or G2/M phase of the cell cycle, we investigated the effect of acteoside on cell cycle progression. To address the mechanism of the antiproliferative effect of acteoside, we investigated the effect of acteoside on cell cycle-related proteins in HL-60 cells. Acteoside did not change the steady-state levels of CDK4 and cyclinD3, but decreased the level of CDK2, CDK6 and cyclin D1, cyclin D2 , cyclin E . Hypophosphorylation of Rb protein was increased. The protein level of p21,p27 and p16, CDK inhibitor, were markedly increased and the mRNA level of p21 was also increased. In addition, acteoside markedly enhanced the binding of p21 with CDK6 compared with untreated control cells. In conclusion, the onset of acteoside-induced differentiation of HL-60 is linked to a sharp up-regulation of p21 level and a decrease in CDK6 activities. This is the first report that acteoside potently inhibit the proliferation of human promyelocytic HL-60 cells via differentiation.

[PC1-15] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Antitumor activity of organic compounds isolated from Korean mistletoe

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Velutin and betulinic acid were isolated as a cytotoxic principle from the dichloromethane extract of Korean mistletoe (Viscum album var. coloratum) by repeated silicagel chromatography and recrystallization. In in vitro analysis of cytotoxic activity using NIH-3T3 cells, dichloromethane extract of Korean mistletoe was shown to be highly cytotoxic against tumor cells. And we