[PC1-24] [10/20/2000 (Fri) 15:30 - 16:30 / [Hall B]]

Ergolide, sesquiterpene lactone from Inula britannica, inhibits inducible nitric oxide synthase and cyclooxygenase-2 expression in RAW 264.7 macrophages through the inactivation of NF-kB

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The inhibitory effects and its mechanism of ergolide, sesquiterpene lactone from *Inula britannica*, on the expression of inducible nitric oxide synthase (iNOS) and cyclooxygenase-2 (COX-2) by lipopolysaccharide/interferon-γ (LPS/IFN-γ) in RAW 264.7 macrophages were investigated. iNOS activity in cell-free extract of LPS/IFN-γ-stimulated RAW 264.7 macrophages was markedly attenuated by the treatment with ergolide. Its inhibitory effect on iNOS was paralleled by decrease in nitrite accumulation in culture medium of LPS/IFN-γ-stimulated RAW 264.7 macrophages in a concentration-dependent manner. Furthermore, treatment with ergolide led to a decrease in iNOS protein as well as mRNA expression levels, as measured by Western blot and Northern blot analysis. In addition, prostaglandin E_2 (PGE_2) production as well as COX-2 expression in cell-free extract of LPS-stimulated RAW 264.7 macrophages was inhibited by the treatment with ergolide in a concentration-dependent manner. Furthermore, ergolide inhibited nuclear factor-κB (NF-κB) activation, a transcription factor necessary for iNOS and COX-2 expression in response to LPS/IFN-γ. This effect was accompanied by the parallel reduction of nuclear translocation of subunit p65 of NF-κB as well as IκB-α degradation. These results demonstrate that the suppression of NF-κB activation by ergolide might be mediated by blockade of the degradation of IκB, leading to the suppression of the expression of iNOS and COX-2, which play important roles in inflammatory signaling pathway.

[PC1-25] [10/20/2000 (Fri) 15:30 - 16:30 / [Hall B]]

Suppression of Cyclooxygenase-2 and inducible Nitric Oxide Synthase Enzyme Induction from Lipopolysaccharide-induced RAW 264.7 by Wogonin, a Plant Flavone from Scutellaria Radix

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Some flavonoids such as flavone derivatives were previously reported to inhibit nitric oxide (NO) production by suppression of inducible nitric oxide synthase (iNOS) expression. In this investigation, the effects of wogonin, one of the potent inhibitors of NO production among flavonoids tested, on cyclooxygenase-2 (COX-2) induction and COX-2 enzyme activity were further elucidated using a mouse macrophage cell line, RAW 264.7. Wogonin inhibited NO and PGE2 production from lipopolysaccharide-induced RAW cells in different sensitivity (IC50: 31 uM for NO and 0.3 uM for PGE2 production). Wogonin also inhibited COX-2 activity directly (IC50: 46 uM) from the homogenate of aspirin-pretreated RAW cells measured by [14C]PGE2 formation from [14C]arachidonic acid. However, it did not inhibit iNOS and phospholipase A2 activity. Western blotting showed that wogonin suppressed the induction of both iNOS and COX-2. Therefore, wogonin is a direct COX-2 inhibitor as well as an inhibitor of iNOS and COX-2 induction, suggesting its potential use for inflammatory diseases.

[PC1-26] [10/20/2000 (Fri) 15:30 - 16:30 / [Hall B]]

Induction of Apoptosis by Ginsenoside Rc in Human Melanoma (SK-MEL-28) Cell Line

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Ginsenoside Rc which was extracted from *Panax Ginseng* C. A. Meyer was purified. The saponins of Ginsenoside Rc group are known to have many pharmacological effects related to anticancer activity. So, the compound was treated at SK-MEL-28 human skin cancer cell line to define apoptosis. And then, MTT assay, cell cycle analysis, Terminal Deoxyribonucleotidyl Transferase-Mediated dUTP Nick End Labeling (TUNEL) assay, and Fas expression were performed for the study.
MTT assay was performd to determine cytotoxicity of Ginsenoside Rc at various times and concentrations. Cell cycle analysis by flow cytometer showed that the cell cycle arrested at S phase. And we examined that the compound induced apoptosis of the cell by TUNEL assay to characterize apoptosis. Fas expression depended on time and concentration evidenced that cell death was induced by interaction of Fas and Fas ligand (CD95).
These data suggested that Ginsenoside Rc induced apoptosis in SK-MEL-28 Human Melanoma Cell Line.

[PC1-27] [10/20/2000 (Fri) 15:30 - 16:30 / [Hall B]]

Effects of Tanshinone I Isolated from Salvia miltiorrhiza Bunge on Arachidonic Acid Metabolism and In Vivo Inflammatory Responses

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We have evaluated 300 plant extracts for their inhibitory activity of PGD2 production from cytokine-induced mouse bone marrow-derived mast cells in vitro. From this screening procedure the methanol extract of Salvia miltiorrhiza was found to inhibit PGD2 production and the ethylacetate subfraction gave the strongest inhibition among 5 subfractions tested. From this ethylacetate subfraction, an activity-guided isolation finally gave tanshinone I as an active principle. This investigation deals with the effects of tanshinone I on AA metabolism from lipopolysaccharide (LPS)-induced RAW 264.7 cells and in vivo anti-inflammatory activity. Tanshinone I inhibited PGE2 formation from LPS-induced RAW macrophages (IC50 = 38 uM). However, this compound did not affect COX-2 activity or COX-2 expression. Tanshinone I was found to be an inhibitor of type IIA human recombinant sPLA2 (IC50 = 11 uM) and rabbit recombinant cPLA2 (IC50 = 82 uM). In addition, tanshinone I showed in vivo anti-inflammatory activity in rat carrageenan-induced paw edema and adjuvant-induced arthritis.

[PC1-28] [10/20/2000 (Fri) 15:30 - 16:30 / [Hall B]]

In Vivo Protection of the Flowers of Prunus persica Extract from Solar Ultraviolet-Induced Skin Damage

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