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Peroxisome proliferator-activated receptor (PPAR), a member of the nuclear hormone receptor superfamily, is a transcription factor activated by specific natural or synthetic ligands. It is involved in various cellular processes including adipogenesis, inflammation, cell cycle progression and carcinogenesis. Here, we report the production and characterization of a PPARgamma subtype-specific monoclonal antibody Pγ48.34A, which was raised against full-length human PPARgamma protein. Characterization of Pγ48.34A has been performed by Western blot analysis using several PPARgamma recombinant proteins, mouse tissue lysates as well as immunoprecipitates obtained from indomethacin-treated 3T3-L1 cell line. Moreover, an ELISA system using Pγ48.34A has been optimized to screen various PPARgamma ligands. Based on these results, Pγ48.34A is considered to be a useful tool for elucidating the role of PPARgamma in the various cellular processes.

[PB4-16] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

An effect of UDCA in production of IL-1β and NO by Microglia in Rat.

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In recent, growing aged people in coupled with the increased senile dementia, Alzheimer's disease, has been a social interests to be cleared out. Alzheimer Disease(AD), first reported by Alios Alzheimer (1864-1915) in 1907, is a neurodegenrative disease. Nothing exact cause of AD is available by now, but in clinical founding β-amyloid peptide(Aβ) and microtubule associated protein(τ protein) is to involved in the disease, and the most important feature in AD is known to induce chronic inflammation to neuron cell. According to drug development fields, Ursodeoxycholic acid(UDCA) in a certain concentration has immunomodulating function, and thus it suppresses the release of IL-2, IL-4, IFN-γ from T-cell and suppresses the production of immunoglobulin. Additionally, UDCA reduces the release of IL-1β in macrophage. In our study, we chosen UDCA as study agent for the suppression of proinflammatory cytokine, IL-1β and NO in microglial cell, a brain immune cell. As a result, UDCA showed outstanding suppressive responses from microglia in the released level of IL-1β and NO stimulated by various active agent including Aβ. These results are expected UDCA to be a potentially promising AD agent preventing and reducing the symptoms of AD.

[PB4-17] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

The protective role of the polysaccharide Ginsan against Staphylococcus aureus : induction of NO and reduction of poinflammatory cytokines

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Ginsan, a new polysaccharide isolated from Panax ginseng, has been previously reported as a good immunomodulator. In this study, we investigated the protective effect of Ginsan against a lethal sepsis induced by Staphylococcus aureus infection. The survival rate of mice treated with Ginsan 24 h prior to S. aureus infection was 80% whereas PBS-treated mice showed 20% of survival in the same infection. The numbers of CFU of S. aureus recovered from the blood, kidney or spleen of the Ginsan-treated mice was much less than that recovered from the organs of the control mice. However, the survival of Ginsan-treated mice was significantly declined when mice were treated with NO inhibitor, L-NAME. In addition, the treatment of ginsan at 100ug/ml cultured with heat killed S. aureus increased the nitric oxide production on RAW264.7 cells 2-fold over than that of control. These results imply that the protective effect of Ginsan is partially due to the enhancement of the NO-dependent antimicrobial cytotoxicity. Furthermore, the levels of proinflammatory cytokines such as TNF-α, IL-1β, IFN-γ, IL-12 and IL-18 from infected mice were remarkably suppressed in Ginsan-treated group compared to the PBS-injected group.
Therefore, these results suggest that Ginsan may be developed as an effective antimicrobial or antiseptic agent in practice.

Poster Presentations - Field C1. Biochemistry

[PC1-1] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Modulation of Cytochrome P450 1B1 Expression by A Stilbene Analog and its Effect on the Sensitivity to Anticancer Agents in Human Cancer Cells.

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We have previously shown that 2,3',4,5'-tetramethoxystilbene(TMS) from synthetic *trans*-stilbene analogues, is one of the most potently selective inhibitor of recombinant human cytochrome P450 1B1 in vitro. In the present studies, the effects of TMS on the expression of cytochrome P450 1B1 were investigated in human cancer cell lines such as MCF-7 and HL-60. TCDD-stimulated P450 1B1 protein and mRNA expression was significantly suppressed by TMS in a dose-dependent manner. It was found that there exists a correlation between P450 1B1 suppression and the cytotoxicity of TMS in human cancer cells. In human cancer cells, the cytotoxic effect of anticancer drugs such as paclitaxel, docetaxel or etoposide was enhanced in the presence of TMS. The synergic effects of co-treatment of anticancer drugs with TMS were significant when the cells were incubated with TCDD. We suggest that the metabolic activation of TMS to more cytotoxic products may be occurred in human cancer cells by the treatment with TCDD. Taken together, our results indicate that TMS is a strong modulator of P450 1B1 gene expression as well as a potently selective inhibitor of P450 1B1. The ability of TMS to increase cytotoxic effect of anticancer drugs may contribute to its usefulness for cancer chemotherapy.

[PC1-2] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Anti-inflammatory effect of indole compound, IND-6 in LPS-stimulated RAW 264.7 murine macrophage cell line