

0.05 μM anonaine also inhibited tyrosine hydroxylase (TH) activity at 24 h (62.0% inhibition of the control level). TH mRNA levels were also decreased by the treatment with anonaine. Intracellular cyclic AMP level was decreased by anonaine. However, anonaine could not alter the Ca^{2+} concentration. Treatment with anonaine at concentrations higher than 3 μM caused a cytotoxicity in PC12 cells as determined by MTT assay. Exposure of PC12 cells to non-cytotoxic concentration range of anonaine (0.05 μM) in association with L-DOPA (20 μM , 50 μM and 100 μM) after 24 h or 48 h had a trend to decrease cell death compared with L-DOPA alone. These results suggest that anonaine inhibit dopamine biosynthesis by the reduction of TH activity, and TH mRNA expression. In addition, anonaine inhibits the cytotoxicity caused by cell death in PC12 cells. The signal transduction pathways and the mechanisms of the protective effects in PC12 cells need to be investigated further.

[PA1-15] [2003-10-10 14:00 - 17:30 / Grand Ballroom Pre-function]

Suppression of IL-8 production by 18-beta-Glycyrrhetic acid is mediated by inhibition of MAPKs and NF-kappaB

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Intestinal epithelial cells can produce cytokines and chemokines that play an important role in the mucosal immune response. Regulation of this production is important to prevent inflammatory tissue damage. Glycyrrhiza glabra has been shown to inhibit inflammation. The aim of this study was to examine the inhibitory effect of 18-beta-glycyrrhetic acid, a triterpenoid saponin of Glycyrrhiza glabra, on IL-8 production via mitogen-activated protein kinases (MAPKs) and nuclear factor-kappa B (NF-kB) in TNF-alpha-stimulated human colon epithelial cells. HT29 cells were stimulated with TNF-alpha in the presence or absence of 18beta-glycyrrhetic acid. IL-8 production was measured by enzyme-linked immunosorbent assay (ELISA), reverse transcription-PCR and Western blot analysis. MAPK activation and IkappaB/NF-kappaB expression were assessed by Western blot analysis. 18-beta-glycyrrhetic acid suppressed TNF-alpha-induced IL-8 production in dose-dependent manner. Moreover, 18-beta-glycyrrhetic acid inhibited activation of MAPKs (p38, JNK1/2, and ERK1/2), degradation of IkB, and nuclear translocation of NF-kappaB. 18-beta-glycyrrhetic acid inhibits TNF-alpha-mediated IL-8 production by blockade in the MAPKs and NF-kappaB pathway in HT29 cells. (This work was supported by grant No. (R04-2002-000-00166-0) from the Basic Research Program of the Korea Science & Engineering Foundation.)

[PA1-16] [2003-10-10 14:00 - 17:30 / Grand Ballroom Pre-function]

Antiviral Activities of L-FMAUS, a new L-FMAU derivative, Against Hepatitis B virus

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The nucleoside analogue, L-FMAUS was synthesized from L-FMAU which has been shown to have significant antiviral activity against hepatitis B virus (HBV). The anti-HBV activity and toxicity of the L-FMAUS were examined by a cell culture system using a hepatitis B virus (HBV) producing cell line, HepG2 2.2.15. L-FMAUS was assayed for the inhibition of HBV multiplication by measurement of HBV DNA and surface antigen (HBsAg) levels in the extracellular medium of HepG2 2.2.15 cells after an 8-day treatment. L-FMAUS reduced the secretion of HBsAg, as determined using HBsAg ELISA test, and decreased the levels of extracellular HBV virion DNA, as determined by PCR analysis. Our findings suggest that L-FMAUS may have potential to develop as anti-HBV drugs in the future.

[PA1-17] [2003-10-10 14:00 - 17:30 / Grand Ballroom Pre-function]

Catalase protects cardiomyocytes via its inhibition of nitric oxide synthesis

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Nitric oxide (NO) has been reported to play an important role as an effector molecule in cytokine signal transduction in cardiomyocytes. The treatment of IL-1b/ TNF-a (2 ng/ml)/ IFN-g (50 U/ml) induced apoptosis in neonatal rat ventricular cardiomyocytes via NO-dependent pathway. When cardiomyocytes were treated with IL-1b (20 ng/ml)/TNF-a (2 ng/ml)/ IFN-g(50 U/ml) in the presence of catalase, the cells were much more resistant to the cell death as well as NO synthesis. However, catalase significantly enhanced the expression of iNOS protein in cardiomyocytes. This study also showed that catalase rather stimulates the NF-kB binding affinity. However, NO synthase activity is abolished by exogenous catalase, suggesting that H₂O₂ be involved in NO synthesis in a post-translation state. Catalase-induced inhibition of NO was partially but significantly reversed by H₄B, an important cofactor of NO synthesis. In addition, catalase activity was significantly down-regulated by H₄B in a dose-dependent manner. These results suggest that catalase may interfere with the production of NO and with the related apoptosis of cardiomyocytes. This study also shows that catalase-induced inhibition on NO release may be reversed by H₄B by direct interaction between catalase and H₄B.

[PA1-18] [2003-10-10 14:00 - 17:30 / Grand Ballroom Pre-function]

Antihypertensives affects on the drug metabolism of buprenorphine

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Buprenorphine(BPN) is used to treat withdrawal syndromes in narcotic addictions. When narcotics are stopped, withdrawal syndromes such as pupil dilation and blood pressure increment are appeared. And BPN is often prescribed concomitantly with antihypertensives. We researched whether combined medicines of BPN and antihypertensives affected on the metabolism of BPN. After BPN was incubated with antihypertensives such as nifedipine, verapamil, captopril and propranolol in rat or human microsomes, amounts of BPN and its metabolite, norbuprenorphine (NBPN), were measured. NBPN was decreased dose-dependently to 60.5, 51.9, 40.3, 21.6, 12.9% in humans and to 39.5, 28.6, 23.5, 13.1, 6.2% in rats, when the nifedipine was treated with concentrations of 0, 40, 80, 160, 320M. It was also decreased dose-dependently to 72.8, 39.3, 33.9, 30.7, 26.8, 19.3% in humans and to 44, 26.7, 21.5, 18.9, 13, 6.2% in rats, when the verapamil was treated with concentrations of 0, 0.16, 0.32, 0.64, 1.28, 2.56mM. However the captopril and the propranolol had no effects. It showed that calcium channel antagonists such as nifedipine and verapamil suppressed the metabolism of BPN

[PA1-19] [2003-10-10 14:00 - 17:30 / Grand Ballroom Pre-function]

Anti-stress effect of Choa pyroligneous liquid in SD rats.

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Pyroligneous liquid is produced by process carbonizing Oak in 350~400°C. There are 200 kinds of constituents including minerals, vitamin B-complex and organic acids in it. The organic acids of them were presumed as active materials. It is traditionally used for treatment of stress related disorder, hepatic disease, immune disorder, G-I disorder and inflammatory disease. The aim of this study was to investigate anti-stress effects of Pyroligneous liquid(Pyroligneous liquid produced from Choa company). The experiments were performed with the use of young(8 weeks of age) male rats of SD strain weighing between 180 and 220 g at the time of first treatment with Pyroligneous liquid. They were grouped normal, control, Ginseng, diazepam and Pyroligneous liquid group. The normal ones were provide normal water and not exposed to stress. The control ones were provide normal water and exposed to stress. Ginseng, diazepam and Pyroligneous liquid were orally administered Ginseng extract 50mg/kg, diazepam 0.5 mg/kg and Pyroligneous liquid 2ml/kg once a day for 12