

concentration of estradiol, however, the estrogenic action was occurred in the presence of low concentration of estradiol. We provided the evidence that GBE and its major components may have chemopreventive effect on breast cancer through antiestrogenic activity, antiproliferation and apoptosis.

[PA3-20] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

The altered Na⁺, K⁺-pump activity following the fumonisin exposure to LLC-PK1 cells

HeonKyo Choi^o, JaeMyung Yoo, Munkhtsetseg Tudev, YongMoon Lee, YeoPyo Yun, Hwansoo Yoo
Chungbuk National University, College of Pharmacy

Fumonisin are specific inhibitors of ceramide synthase in sphingolipid metabolism. Sphingolipids are biologically active lipid mediators in cellular physiology and involved in cell signaling, growth, transformation, angiogenesis and differentiation. The objective of this study was to determine the effect of fumonisin B1 on Na⁺, K⁺-pump activity when fumonisin B1 was exposed to LLC-PK1 cells. Fumonisin B1 elevated free sphingoid bases and their 1-phosphates, while total complex sphingolipids were depleted at 20μM fumonisin B1 during the 3 day exposure. The inhibition of ouabain-insensitive Na⁺, K⁺-pump activity was shown under the same culture condition as the sphingolipid alteration occurred. The results indicated that sphingolipid may be related to the regulation of ouabain-insensitive Na⁺, K⁺-pump activity. However, fumonisin B1 did not change the ouabain-sensitive Na⁺, K⁺-pump activity at all. Therefore, fumonisin may be a specific modulator for the action of ouabain-insensitive Na⁺, K⁺-ATPase in LLC-PK1 cells which leads to fumonisin-induced cytotoxicity and cell proliferation.

[PA3-21] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Antioxidative and antigenotoxic activity of vegetable and fruit extracts

Heo chan, Lee Seung Chul, Kim Hyun Pyo, Heo Moon Young
College of Pharmacy, Kangwon National University, Chunchon 200-701, Korea, Jeil Pharmaceutical Co. Ltd, 117-1, Keunkog-ri, Baegam-myun, Yongin City, Kyunggi-do, 449-861, Korea

The ethanol extracts of mixed vegetables (Bioactive V, BV), mixed fruits (Bioactive F, BF) and its liquid formulation (Chungpae Plus[®]) were evaluated for their antioxidative and antigenotoxic activity. They were shown to possess the significant free radical scavenging effect against 1,1-diphenyl-2-picryl hydrazine (DPPH) radical generation and were revealed to show the inhibitory effect of lipid peroxidation as measured by malondialdehyde (MDA) formation. They were also found to strongly inhibit cigarette smoke condensate (CSC) or hydrogen peroxide-induced DNA damage from mammalian cells, assessed by single cell gel electrophoresis. Furthermore, oral administration of vegetables and fruits extracts inhibited micronucleated reticulocyte (MNRET) formation of mouse peripheral blood induced by CSC or KBrO₃ treatment in vivo. The liquid formulation under same experimental conditions also showed similar antigenotoxicity in vitro and in vivo. Therefore, the liquid formulation (Chungpae Plus[®]) containing BV and BF may be a useful natural antioxidative and antigenotoxic agent by scavenging free radicals, inhibition of lipid peroxidation and protecting DNA damage.

[PA3-22] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

An antithrombotic agent, NQ301, inhibits thromboxane A₂ synthase activity and blocks thromboxane A₂ receptor in rabbit platelets

Jin Yong-Ri^o, Ryu Chung-Kiu, Cho Mi-Ra, Shin Hwa-Sup, Yoo Hwan-Soo, Yun Yeo-Pyo
1College of Pharmacy, Chungbuk National University, Cheongju, 361-763, Korea, 2College of Pharmacy, Ewha Womans University, Seoul 120-750, Korea, 3Division of Life Science, College of Natural Sciences, Konkuk University, Chungju 380-701, Korea

In the previous studies, we have reported that NQ301, a synthetic 1,4-naphthoquinone derivative, displayed a potent antithrombotic activity, and that this might be due to antiplatelet effect, which was mediated by inhibition

of cytosolic Ca^{2+} mobilization in activated platelets. In the present study, the effect of NQ301 on arachidonic acid cascade in activated platelets was examined. NQ301 concentration-dependently inhibited washed rabbit platelet aggregation induced by collagen (10 $\mu\text{g/ml}$), arachidonic acid (100 μM) and U46619 (1 μM), a thromboxane A_2 receptor agonist, with IC_{50} values of 0.60 ± 0.02 , 0.79 ± 0.04 and 0.58 ± 0.04 μM , respectively. NQ301 also produced a shift to the right of the concentration-effect curve of U46619, suggesting a competitive type of antagonism. NQ301 slightly but concentration-dependently inhibited collagen-induced arachidonic acid liberation. In addition, NQ301 potently suppressed thromboxane (TX) B_2 formation by platelets that were exposed to arachidonic acid in a concentration-dependent manner, but had no effect on the production of prostaglandin (PG) D_2 , indicating an inhibitory effect on TXA_2 synthase. This was supported by a TXA_2 synthase activity assay that NQ301 concentration-dependently inhibited TXB_2 formation conversed from PGH_2 . Moreover, NQ301 also concentration-dependently inhibited 12-hydroxy-5,8,10,14-eicosatetraenoic (12-HETE) acid formation by platelets that were exposed to arachidonic acid. Taken together, these results suggest that NQ301 has a potential to inhibit TXA_2 synthase activity with $\text{TXA}_2/\text{PGH}_2$ receptor blockade, and modulate arachidonic acid liberation and 12-HETE formation in platelets. This may also be one convincing mechanism for the antithrombotic actions of NQ301.

[PA3-24] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Proteomic Analysis of Cytokine-Like Proteins Secreted from Human Bronchial Epithelial Cells in Response to Pathogenic Bacterial Infection

Park Mi Ja^o, Oh Mi Jung, Jo Dong Hwan, Chin Mi Reyoung, Lee Ji Yeon, Park Ji Woo, Lee Na Gyong, Kim Dae Kyong

Department of Environmental & Health Chemistry, College of Pharmacy, Chung-Ang University, Department of Bioscience & Biotechnology, Sejong University

Bacterial infection is a very complex process in which both pathogens and host cells play crucial roles, and the host cells undergo drastic changes in their physiology, releasing various proteins in response to the pathogenic infection. Human airway epithelial surface serves as a first line of defense against microorganisms and the external environment. It is well known that bronchial epithelial cells secrete various chemokines and cytokines such as IL-6 and IL-8 to cope with various respiratory pathogens. Although many kinds of these cytokine proteins are identified and characterized for their biological roles, such cytokine-like proteins as a functionally unknown protein could be found through high-throughput identification of the proteins in the extracellular space. In this study, the proteomics approach was employed to compare the proteins from pathogenic bacteria-infected human bronchial epithelial cells with uninfected cells and to identify the proteins that specifically secreted to the culture medium. We used a strategy that combined a high-resolution two-dimensional electrophoresis (2-DE) and matrix-assisted laser desorption/ionization time-of-flight (MALDI-TOF). At least twenty different proteins stained by Coomassie G, were identified by mass spectrometry analyses after in-gel tryptic digestion. Some of them were associated with inflammation, transcription and the other proteins were revealed as novel proteins to be functionally studied.

[PA4-1] [2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function]

Quantative Analysis of dextromethorphan, Carisoprodol and their metabolites in hair by GC/MS

Yang Wonkyung^o, Han Eunyoung, Lee Jaesin, Park Yonghoon, Choi Hwakyung, Lim Miae, Chung Heesun

National Institute of Scientific Investigation

Dextromethorphan and carisoprodol have been abused to obtain a hallucination for longer than 10 years in Korea. Due to their seriousness of abuse liability, recently government decided to control them as a psychotropic agents. As these are controlled, it is necessary for us to establish the analysis of these medicine and their metabolites in hair to prove the abuse of these drugs. This study is described for the determination of dextromethorphan and carisoprodol in hair. The method is applied to simultaneous quantify those drugs and