

treat rheumatism by moxibustion in Chinese medicine. A small carbohydrate fraction of approximately 1,000 dalton from the water-soluble extract of the *Artemisia Folium* promoted survival of the mouse thymocytes in culture. A mouse gene array study suggested that the fraction might modulate Fas/FasL dependent apoptotic cell death and thus had influence on the survival of the thymocytes in culture. RT-PCR analysis confirmed the down-regulation of the Fas gene by the treatment, supporting that the fraction modulated thymocyte death by suppressing the Fas gene expression.

**[PB4-8] [ 2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function ]**

**Effects of anti-inflammation and cell protection through biphenyl dimethyl dicarboxylate on Rat Microglia**

Joo SeongSoo, Kang HeeChul, Lee Dolk<sup>o</sup>

*Department of Immunology, College of Pharmacy, Chung-Ang University, Seoul 156-756, Korea*

Biphenyl dimethyl dicarboxylate (DDB) is a by-product produced in process of synthesizing Schizandrin-C. Generally, DDB has known to protect hepatocytes and to decrease the index of liver enzyme (e.g. GOT and GPT) in chronic hepatitis. The present study was aimed to demonstrate whether DDB can protect the brain cell, especially the Alzheimer brain in vitro. As Alzheimers disease can be induced by activated microglia, a macrophage in the brain, through Abeta peptide (A $\beta$ ) produced from amyloid precursor protein (APP). Results showed that DDB attenuated the production of proinflammatory repertoire such as IL-1 $\beta$ , TNF- $\alpha$ , and Nitric oxide(NO) in 10 $\mu$ M to 25 $\mu$ M of DDB with the highest pick value at 24h. The attenuation was started from 6h and lasted up to 48h with clear evidences of cell protection (DAPI). The study suggested that DDB plays a important role in protecting the brain cells from the progressive Alzheimer's disease by inhibiting the chronic inflammation. In conclusion, we found that DDB can be used in neurodegenerative disease caused by inflammation and cell damages from stresses.

**[PB4-9] [ 2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function ]**

**Inductive Effects of *Vibrio vulnificus* Infections on Cytotoxic Activity and Expression of Inflammatory Cytokine Genes in Human Intestinal Epithelial Cells**

Lee Byung Cheol<sup>o</sup>, Kim Tae Sung

*College of Pharmacy, Chonnam National University*

*Vibrio vulnificus*, a Gram-negative estuarine bacterium, is the causative agent of food-borne diseases, such as life-threatening septicemia. *V. vulnificus* penetrating into the intestinal epithelial barrier stimulates an inflammatory response in the adjacent intestinal mucosa. Therefore, interaction between *V. vulnificus* and intestinal cells is important for understanding of both the immunology of mucosal surfaces and *V. vulnificus*. In this study we investigated the effects of *V. vulnificus* infection on cytokine gene expression of human intestinal epithelial cells, Caco-2 and INT-407 cells. *V. vulnificus* infection significantly induced the expression of pro-inflammatory cytokines such as IL-1, IL-6, IL-8, IL-12, and IL-18 in both incubation time- and MOI-dependent manners, while did not affect TGF-beta, etc. expression. Especially, infection with *V. vulnificus* increased IL-8 mRNA level and also increased the binding activity of transcription factor NF-kB to the kB sites in both Caco-2 and INT-407 cells. Furthermore treatment with inhibitors for NF-kB activation and translocation abrogated the enhanced IL-8 gene expression by *V. vulnificus* infection, indicating that *V. vulnificus* infection induced IL-8 gene expression by increasing NF-kB binding activity in human epithelial cells.

**[PB4-10] [ 2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function ]**

**Allergenicity of soybean and soybean-based products**

Kim Hyung Soo<sup>o</sup>, Park Jae Hyun, Ryu Mi Hyun, Lee Jong Kwon, Eom Juno H, Byun Jung-A, Oh Hye Young  
*NITR, FDA*

The purpose of this study was to investigate the effect of manufacturing process for food on allergenicity of soybean or soybean products. Crude extracts of each soybean (SB), weaning diet A (WA) and B (WB) or soybean paste C (SC) and D (SD) were digested a simulated gastric fluid (SGF) to characterize the physicochemical stability of allergens. Allergens of each sample except a SB (82, 39, 35 kDa) were not rapidly digested in SGF. The endogenous allergens in each sample were separated by gel electrophoresis and immunoblotted with serum from soybean-sensitive patients or normal subjects. In ELISA result, specific IgE or IgG4 binding activities of positive serum to crude or SGF-treated extracts were higher mean value than those of control serum. Also, IgE or IgG4 binding activities in SB were similar with those of crude soybean paste. Immunoblots showed the diversity in IgE or IgG4 binding protein patterns. The prominent IgE binding bands were detected in crude extracts (SB, 49, 47, 40-41, 35, 29-30; WA & WB, 47, 40-41, 29-30; SC, 42-43, 29-30; SD, 31-32 kDa) and SGF-digested preparations (SB, 33-34, 29-30, 22-25; WA & WB, 31-32, 29-30, 22-25 ; SC, 29-30, 22-25; SD, 31-32, 22-25 kDa). The major IgG4 binding bands were similar to IgE-binding proteins and the minor bands were detected in broad range. Thus, this study suggests that the allergenicity of soybean food products may be varied with manufacturing process or food additive.

[PB4-11] [ 2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function ]

### **Anti-diabetic effects and the evaluation of the immune response by F3-ESS from *Cordyceps militaris* in streptozotocin-induced diabetic mice**

**Yun Yunha**<sup>o</sup>, Han Shinha, Lim Heejung, Park Eunjung, Son Hanshik, Lee Seungjeong, Lee Minwon, Lim Yeongseon, Kim Kyungjae

*Department of Pharmacy, Sahmyook University, 26-21 Gongreung-2 dong, Nowon-Gu, Seoul 139-742, Korea., CM Biotec, Obongri 281-2, Kangnung, Kangwon, Korea, College of Pharmacy, Chung-Ang Univ., Korea, Dept. of Food Sci., Kangnung National Univ., Korea*

The antidiabetic effect of *Cordyceps militaris* (CM) extracted fractions, F1 (CCCA, Crude Cordycepin Containing Adenosine), F2 (Ethanol precipitation), F3 (Ethanol soluble supernatant) and F4 (fraction of through SK-1B), was investigated in streptozotocin (STZ)-diabetic mice. The results indicated F3 of CM lowered the blood glucose level than control in STZ-diabetic mice. High blood glucose was induced in mice by intraperitoneal injections of STZ (150 mg/kg). The F3-ESS, which contents cordycepin, strongly showed inhibitory activity by 33.4% in mice loaded with starch (2 g/kg). For 3 days load test, F3-ESS (50 mg/kg, twice a day) showed inhibitory activity by 35.46%. After 6 days administrations of F3-ESS (50 mg/kg) and cordycepin (0.2 mg/kg) exhibited inhibitory activity by 46.9% and 48.4% respectively. We used acarbose for positive standard. When compared with acarbose in starch loaded groups, activity of F3-ESS was shown similar reduction with acarbose (37.22%). The proliferation assay of splenocytes and nitric oxide (NO) production of peritoneal macrophages were carried out by addition of mitogens to see the stability of the usage of this herbal medicine. When compared with control, increased the proliferation of splenocytes with LPS (10 µg/ml). The cordycepin group was found to be enhanced NO production by treatment of LPS (25 ng/ml). Changes of serum enzyme activities of glutamic oxaloacetic transaminase (GOT), glutamic pyruvic transaminase (GPT) were also investigated and the cordycepin appeared to be greater than those of control. We conclude that F3-ESS and cordycepin may be useful in the control of blood glucose level in diabetes and promising new drug as an anti-hyperglycemic agent without defects of immune responses.

[PB4-12] [ 2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function ]

### **Nano-particle encapsulated doxorubicin as an anti-cancer chemotherapeutic agent: effect on the systemic immune response I**

**Lee Hyunah**<sup>o</sup>, Kim Eui Jin, Yu Jeong-Jun, Shu Soo-Won, Ko Young Hyeh, Baek So Young, Park Jin-Hee, Lee Hong Gi

*The Cancer Center, Samsung Medical Center, Sunkyunkwan University, School of Medicine, Div. Hematology/Oncology, Samsung Medical Center, Sunkyunkwan University, School of Medicine, Dept. Medical Engineering, Samsung Medical Center, Sunkyunkwan University, School of Medicine, Dept. Pathology, Samsung*