

β group revealed that Rg1 suppresses the release of NO and IL-1 β at 100 μ M. In conclusion, Rg1 may play a certain role in treatment and prevention of AD in a way to suppress the immune reaction in microglia adjacent around the neuron cell.

[PB4-9] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Effects of *Bifidobacterium* spp. isolated from the feces of healthy adults on the enhancement of the presentation of exogenous particulate antigen in association of MHC Class I

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Bifidobacterium spp. is nonpathogenic, Gram-positive and anaerobic bacteria, which inhabit the intestinal tract of humans and animals. *Bifidobacterium* spp. plays important roles in human health. However, the influence of exogenous factors on species composition of fecal bifidobacteria is still unclear. In this study, we wished to determine whether presentation of exogenous OVA (10 μ g/ml) could be enhanced by the culture supernatant of ten *Bifidobacterium* spp. isolated from the feces of healthy adult Korean (20-30 years old). To facilitate this function DC acquire Ag from a variety of sources. DC can uptake Ag released from cells undergoing apoptosis or necrosis for presentation to MHC class I restricted CTL. The objective of this study was to investigate the effects of several *Bifidobacterium* spp. culture supernatant on the function of dendritic cell as antigen presenting cells by B3Z assay. Characterization of the effects of *Bifidobacterium* spp. on the production of macrophage mediators may contribute to a better understanding of how this genus affects immune function at the cellular level. In this study, we used the RAW 264.7 murine macrophage model to evaluate the effects of human *Bifidobacterium* spp. and showed the enhancement of production of nitric oxide (NO) and tumor necrosis factor (TNF- α).

[PB4-10] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Evaluation of the immune responses following treatment of diabetes by traditional herbal drugs in streptozotocin-induced diabetic mice

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This experiment was designed to evaluate the immune responses after treatment of diabetes by using water extract of traditional herbal drugs on the splenocytes and peritoneal macrophages in vivo. We found two herbal materials of the hypoglycemic agents based on inhibitory activity of α -glucosidase. These potential herbal drugs which remarkably inhibited α -glucosidase in STZ-induced diabetic mice (STZ 150 mg/kg, i.p.) were Mori radidis Cortex (MRC, 2.32 mg/mouse) and Cudraniae radidis Cortex (CRC, 2.24 mg/mouse). The herbal drugs were administered orally maltose or starch loaded groups into mice twice a day for 7 days. Peritoneal macrophages were harvested 3 days after thioglycollate broth (3%, i.p.) injection and spleen was also received at the same time. The proliferation assay of splenocytes and nitric oxide (NO) production of peritoneal macrophages were carried out by addition of mitogens. MRC in maltose-loaded groups increased the proliferation of splenocytes with LPS (50 ng/ml). MRC, CRC, Acarbose in starch-loaded groups appeared to be lower than control for the proliferation. Acarbose in maltose and starch-loaded group was found to be enhanced NO production with treatment of

LPS (10 ng/ml) or IFN- γ (100 U). MRC and CRC in starch-loaded groups also increased NO production in the LPS activation. Changes of serum enzyme activities of glutamic oxaloacetic transaminase (GOT), glutamic pyruvic transaminase (GPT) were also investigated. Acarbose appeared to be greater (59, 78) than those of control (32, 51) when compared with GPT, GOT in both maltose-loaded groups. The level of liver glycogen after treatment MRC (108.05 ± 12.05 dl/ml) or CRC (95.00 ± 22.02 dl/ml) was not significant from that of control ($115.83 \pm$ dl/ml).

[PB4-11] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Protective effects of Ginsan against Cyclophosphamide-induced immunosuppression in mice

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The immunomodulator Ginsan has been found previously by us to stimulate the secretion of high levels of IL-1, IL-6 and TNF- α in irradiated mice. These cytokines are known to induce proliferation and differentiation of hematopoietic progenitor cells from the spleen and bone marrow and to protect mice from DNA-damaging agents. The present studies were evaluated as a cytoprotective agent against toxicity of the alkylating drugs. Sublethal dose (250 mg/kg) of cyclophosphamide (CP) caused neutropenia, decreased cellularity of bone marrow and inhibited Natural Killer (NK) cell activity in Balb/c mice. A single injection of Ginsan (2mg/mouse) at 24 h after CP treatment accelerated recovery of blood neutrophils and bone marrow cellularity and restored NK activity in CP-treated mice.

Moreover, ginsan protected these animals from the lethal effects of high doses of CP. These protective effects were demonstrable only when ginsan was administered to mice 24 h after CP treatment. To assess the big difference in survival rate between pre- or post administration of Ginsan, we analyzed the cell cycle progression of spleen and bone marrow cells in CP-treated mice. CP, given alone, affected apoptotic cell death and caused deregulation of the cell cycle in the spleen and bone marrow. Ginsan, applied 24h after CP administration, resulted in a suppressing effect on apoptosis and rapid recovery from the cell cycle perturbation triggered in normal bone marrow cells by the alkylating drug. The result may be useful for therapeutic application of ginsan with CP therapy.

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

Platycodon grandiflorum enhanced macrophages function and NK and LAK cell mediated cell lysis.

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The immunostimulatory and host resistance effects of the Platycodon grandiflorum A. DC, changkil (CK) and inulin (CKI) isolated from CK were investigated in rats. SD rat were exposed to CK or CKI by gavages for 7days and isolated peritoneal macrophages and splenocyte were used for these studies. CK and CKI significantly enhanced peritoneal macrophages activities such as ROS production and phagocytosis. Lymphokine-activated killer cell (LAK) and natural killer (NK) cell activation in splenocyte were measured by MTT assay and these activities were significantly