when cells were exposed to combination of LPS and WEP. At high dose of WEP (50 to 100 mg/ml) which has been prescribed for antiiniflammatory and analgesic purpose showed inhibition of NO production in LPS-stimulated macrophage. Besides cytokine production, NO release, surface molecule expression and cell morphologic antigen expression were increased in response to the stimulation by WEP. These results suggested WEP had the ability to activate the differential immunomodulatory effect on macrophage secretory and cellular activities. Such effect of WEP might play a role in vivo in the process lading activation of macrophage in immune system.

[PB4-2] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]

Activation of a mouse macrophage cell line RAW 264.7 by Salicornia herbacea

Im SunA°, Lee Jaekwon , Yang InHo , Shin KongSik*, Kim MyungKyum* , Kim GooWhan*, Song SukGil , Lee ChongKil

College of Pharmacy, Chungbuk National University, Cheongju 361-763 , BIOK, Inc., 2106 Energy & Environmental Research Center, KAIST, Taejon 305-701, Korea*

Salicornia herbacea is an annual herb growing in salt marshes and on muddy seashores. In Korea, *Salicornia herbacea* grows naturally in the western coast area. *Salicornia herbacea* has been used as a fork medicine as well as a seasoned vegetable. In fork medicine, *Salicornia herbacea* has been used to treat constipation, obesity, hypertension, hypotension, diabetes, asthma, arthritis and cancer. However, the biological mechanisms of these activities have not been characterized, nor the active components. The present study was set out to define the immunomodulatory activity of *Salicornia herbacea*. The juice of *Salicornia herbacea* was prepared from the whole plant by passage through a fine screen. High molecular weight substances, SH-Ex, were then prepared from the juice by addition of 3 volumes of ethanol. Immunomodulatory activities of the juice and SH-Ex were examined on a mouse macrophage cell line, RAW 264.7 cells. We found that the juice as well as SH-Ex stimulates cytokine production, nitric oxide release, expression of surface molecules, and phagocytosis in a dose dependent manner. The juice as well as SH-Ex also induced further differentiation of slightly adherent RAW 264.7 cell into strongly adherent macrophages. These results indicate that *Salicornia herbacea* contains immunomodulator(s) that induces activation of macrophages

[PB4-3] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]

Allergenecity Test of Genetically Modified Soybean Extract in Rat

Chang Hyun Sung°, Lim Si Kyu, Kim Eun Jin, Nam Doo Hyun, Huh Keun

College of Pharmacy and Institute of Biotechnology, Yeungnam University, Kyongsan 712-749 Korea

Antigenicity of genetically modified soybean was evaluated in male Sprague Dawley rats. To confirm the genetically modified soybean used in these studies, the polymerase chain reaction (PCR) was performed using the DNA isolated from the soybean. The PCR clearly showed that the samples used in the present studies were genetically modified. The non-genetically modified control beans showed no signal in the PCR. To evaluate the antigenicity of genetically modified soybean, the homogenized soybean samples were sensitized subcutaneously three times a week for three weeks. The doses of soybean were 0, 2 and 20 mg/kg in the protein basis. A week after the last sensitization, sera were isolated from individual animals. When the sera were injected intradermally on the clipped back of unsensitized rats with various dilutions, followed by a challenge with 20 mg/kg of soybean homogenates in the presence of 1% Evans blue, no sign of passive cutaneous anaphylaxis reaction was observed. In addition, when the sera were treated to the cultures of peritoneal mast cells, the histamine release was not increased when compared to the cultures treated with sera isolated from vehicle-treated control rats. The present results indicate that the genetically modified soybean might not be antigenic in male Sprague Dawley rats.

[PB4-4] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]