

Joo SeongSoo, Kwon HeeSeung, Lee Dol<sup>o</sup>

Division of Immunology, College of Pharmacy, Chung-Ang University, Seoul, Korea

According to recent studies, cefodizime, a third generation cephalosporin antibiotic agent, may potentially have the capability of stimulating chemotactic activity of neutrophils and monocytes as well as the strong immuno-modulator. We have studied to see if cefodizime can be a potential substance inducing an immunological activities on immune cells, such as dendritic cells and macrophages.

In experimental process, dendritic cell and macrophage were taken from mice and mixed with 10 $\mu$ g/ml, 50 $\mu$ g/ml, 100 $\mu$ g/ml cefodizime and 1 $\mu$ g/ml IFN- $\gamma$ 10U/ml + LPS. These mixtures were then incubated for 4, 8, 12, 24 hours to see if cytokines would be released to an analytical extent by assessing RT-PCR for IL-1 $\beta$  mRNAs.

As a result, we have found that both dendritic cells and macrophage released cytokines, IL-1 $\beta$ , even though the amounts were not that significantly enough. This result may suggest that both cells when treated with cefodizime can show an increase of IL-1 $\beta$ . From these results, we have learned that cefodizime may be a potential immuno-modulator as well as an antibiotic activity. Importantly, this study is considered to be a basic knowledge for elucidating the properties of dendritic cells and macrophage when taking cefodizime for immunological application in future study.

[PB4-5] [ 10/17/2002 (Thu) 13:30 - 16:30 / Hall C ]

Alliin reduces expression of Intercellular Adhesion Molecule-1 (ICAM-1) in gamma-irradiated endothelial cells: Involvement of p38 MAP kinase signalling pathway.

Son EunHwa<sup>o</sup>, Mo SungJi, Cho SeongJun, Yang KwangHee, Rhee DongKwon, Pyo SuhkNeung

College of Pharmacy, Sungkyunkwan University, Suwon, 440-746, Kyunggi-Do, Korea, Radiation Health Research Institute(KHNP), Seoul, Korea, 132-703

Inflammation is a frequent radiation-induced following therapeutic irradiation. Since the upregulation of adhesion molecules on endothelial cell surface has been known to be associated with inflammation, interfering with the expression of adhesion molecules is an important therapeutic target. We examined the effect of allicin, a major component of garlic, on the induction of intercellular adhesion molecule-1 (ICAM-1) by gamma-irradiation and the mechanisms of its effect in gamma-irradiated human umbilical vein endothelial cells (HUVECs). In the present study, the relative inhibitory effects of allicin on ICAM-1 expression under gamma-irradiated HUVEC was assessed by ELISA and RT-PCR analysis. Our data indicated that allicin significantly inhibited the surface expression of vascular cell ICAM-1 and ICAM mRNA in a dose dependent manner. This induction of ICAM-1 may require the transcription factor such as NF- $\kappa$ B and AP-1. In EMSA analysis, NF- $\kappa$ B and AP-1 were not activated in HUVEC by gamma-irradiation. In addition, treatment with p38 inhibitor resulted in the decrease of expression of ICAM-1 mRNA by gamma-irradiation. These results suggest that allicin reduces expression of ICAM-1 via p38 dependent pathway in gamma-irradiated HUVEC.

[PB4-6] [ 10/17/2002 (Thu) 13:30 - 16:30 / Hall C ]

Immunomodulatory activity of acharan sulfate isolated from Achatina fulica

Kim HyeonSeon<sup>o</sup>, Lee JaeKwon, Yang InHo, Lee YoungRan, Shin HyunJeong, Park EunJu, Choi HyungSeok, Kim YeongShik, Lee ChongKil

College of Pharmacy, Chungbuk National university

Acharan sulfate, a new glycosaminoglycan(GAG) isolated from the giant African snail Achatina fulica, was shown to have antitumor activity in vivo. To elucidate the mechanisms for the antitumor activity, we examined its impact on professional antigen presenting cells such as macrophages and dendritic cells (DCs). Acharan sulfate stimulated cytokine production (TNF- $\alpha$  and IL-1 $\beta$ ), nitric oxide release, and morphological changes in a dose dependent manner on a macrophage cell line, Raw 264.7 cells. The differentiation-inducing activity of acharan sulfate was examined on immature DCs. Immature DCs were generated from mouse bone marrow (BM) cells by culturing with GM-CSF and IL-4, and then stimulated with acharan sulfate. The resultant DCs were then examined for functional and phenotypic properties. It was found that acharan sulfate could induce functional maturation of