

Dendritic Cell as an effective cancer immuno-cell therapy module I. : Anti-tumor effect of cultured DCs in murine leukemia model

So-Hee In^o, Myung-Ju Kim, So young Baek, Hong-Gi Lee, Ki-Hyun Kim, Hyunah Lee

The Cancer Center, Samsung Medical Center, School of Medicine, Sungkyunkwan University, Seoul, 135-230, Korea, Hematology/Oncology, Samsung Medical Center, School of Medicine, Sungkyunkwan University, Seoul, 135-230, Korea

As a potent antigen presenting cells and a powerful inducer of antigen specific immunity including cytotoxic T cell activity, dendritic cells(DCs) are being considered as a promising anti-tumor therapeutic module. Unlike solid tumors, leukemia is the hematologic malignancy involving immune effector cells. The expected usage of DCs in leukemia is the treatment of minimal residual disease(MRD) after the remission or stem cell transplantation . In this study ,syngeneic leukemia cells were inoculated intra-venously into the mouse (WEHI-3 into the Balb/c), and the autologous tumor cell lysate pulsed DCs were injected as a therapeutic module twice in two weeks. To mimic the minimal residual disease (MRD), one day before the first DC injection (3~5 X10⁵ DCs/mouse,i.p.), 5X10⁴ WEHI-3 cells inoculated i.v. Three weeks after final DC injection, the tumor formation and the growth were observed as well as the DC-induced systemic anti-tumor immunity with the splenic lymphocyte. Bone marrow origin mouse myeloid-DCs were cultured with GM-CSF and IL-4 for 7 days and pulsed with leukemic cell lysate (50ug/ml protein , for 18hrs). Compared to the saline treated group, DC or pulsed DC injected group did not make the tumor as observed by gross or microscopic section of tissues. Tumor specific T cell proliferations were significantly increased in DC or pulsed-DC injected group as were measured by CFSE-staining . The proportion of IFN- γ producing CD8+ cells(flow cytometry) and the IFN- γ production(ELISA) were increased significantly in DC treated group .The data indicating the promising anti-leukemic effect of cultured DCs in MRD model by inducing the tumor specific immunity.

[PB4-4] [2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function]

Immunodulatory activity of betulinic acid from *Lycopus lucidus* in murine macrophage RAW 264.7 cells

Yun Yunha, Song Youngchun, Son Hanshik, Yim Dongsool, Lee Sookyeon, Kim Kyungjae

Department of Pharmacy, Sahmyook University, 26-21 Gongleng-2 dong, Nowon-Gu, Seoul 139-742, Korea.

Betulinic acid (BA), a pentacyclic triterpene isolated from *Lycopus lucidus*, has been reported to be a selective inducer of apoptosis in various human tumor cells. It also exhibits anti-inflammatory and immunomodulatory properties. Due to its high level of these activities and lack of toxicity, BA is an attractive and promising compound as a new drug and recently undergoing preclinical development as an immunomodulators. How BA mediates these matters is not known yet. Because of the critical role of the monocytes and tissue macrophages in inflammatory and immune responses, we postulated that BA modulates the activity of its immunomodulatory properties at least two groups of protein mediators of inflammation, Interlukin-1 β (IL-1 β) and the Tumor necrosis factor- α (TNF- α). In this study we investigated the effect of BA on murine macrophage RAW 264.7 cells to activate macrophage at low concentration (2.5 μ g/ml) and induced pro-inflammatory cytokines. The enhanced surface CD40 molecule was expressed on the resting cells at 2.5 μ g/ml of BA or LPS/BA. Furthermore, BA enhanced TNF- α induced apoptosis. Overall, our results indicated that BA induced activation of macrophage and pro-inflammatory cytokines. This may provide a molecular basis for the ability of BA to mediate macrophage, suppress inflammation, and modulate the immune response.

[PB4-5] [2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function]

The Effect of allicin on radiation-induced expression of ICAM-1 and activation of JNK and p38 MAP kinase pathway in human endothelial cells.

Mo SungJi, Son EunHwa, Cho SeongJun, Yang KwangHee, Rhee DongKwon, Pyo SuhkNeung

College of Pharmacy, Sungkyunkwan University, Radiation Health Research Institute (KHNP)