

immunity against highly metastatic murine cells (L5178Y-ML25 lymphoma) was investigated. Mice immunized with the mixture of X-irradiated tumor cells and B30-MDP on 7 days before tumor challenge showed a significant decrease in liver and spleen metastasis of L5178Y-ML25 cells. Sensitization with X-irradiated tumor cells admixed with B30-MDP augmented CTL activity against L5178Y-ML25 cells. Furthermore, immunization of mice with the mixture of X-irradiated tumor cells and B30-MDP after tumor inoculation induced the decrease of the level of GOT and GPT in serum specimens of tumor-bearing mice. These results indicate that B30-MDP is able to enhance a specific tumor immunity against metastatic tumors.

[PB4-2] [04/19/2001 (Thr) 15:30 - 16:30 / Hall 4]

Effect of the lectins from Korean mistletoe on immune responses

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Adjuvant effect of lectins (KML-C) isolated from Korean mistletoe (*Viscum album coloratum*) on induction of humoral and cellular immune responses against keyhole limpet hemocyanine (KLH) was examined. When mice were immunized subcutaneously (s.c.) with KLH (20 mg/mouse) admixed with or without 50 ng/mouse of KML-C (KLH+KML-C), mice immunized with KLH+KML-C showed significantly higher antibody titers against KLH than those immunized with KLH alone, showing the highest titer 5 weeks after immunization. Furthermore, boost immunization with KLH+KML-C at 2-week interval elicited much higher activity than single immunization to enhance antibody responses against KLH. The assay for determining isotypes of antibodies revealed that KML-C augmented KLH-specific antibody titers of IgG1, IgG2a and IgG2b. The culture supernatants obtained from the splenocytes of mice treated with KLH+KML-C also showed a higher level of KLH-specific both Th-1 and Th-2 type cytokines, IL-2 and IL-4. In an in vitro analysis of T lymphocyte proliferation to KLH on week 4, the splenocytes of mice treated with KLH+KML-C showed a significantly higher proliferating activity than those treated with KLH alone. In addition, mice immunized twice with KLH+KML-C and followed by intrafootpad (i.f.) injection of KLH (50 mg/site) 14 weeks after the primary immunization induced a higher delayed-type hypersensitivity (DTH) reaction than mice treated with KLH alone. These results suggest that KML-C is a potent immunoadjuvant to enhance cellular and humoral immune responses.

[PB4-3] [04/19/2001 (Thr) 15:30 - 16:30 / Hall 4]

Effect of Cellular NF- κ B Activation by Flavonoids after LPS Stimuli in Transfectant Human SCC-13 Keratinocytes

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Flavonoids are widely found in fruits and vegetables, exerting a wide range of therapeutic roles, including good anti-inflammatory and antioxidant activities. NF- κ B (nuclear factor kappa B) plays a role in the regulation of genes responsible for inflammatory and immune responses. When NF- κ B is activated by various agents such as lipopolysaccharides (LPS), NF- κ B is released from I κ B and then translocated from cytosol to the nucleus. NF- κ B induces the immunoglobulin k chain, cytokines such as interleukin (IL)-1, IL-2, IL-6, IL-8, tumor necrosis factor (TNF)- α and interferon- γ . Therefore inhibitors of NF- κ B may be useful as being anti-inflammatory. The determination of NF- κ B activity performed by employing SCC-13 transfected with pNF- κ B-SEAP-NPT plasmid. NF- κ B activity was measured in the SEAP reporter gene assay using a fluorescence detection method. In this presentation, we examined 87 flavonoids for the expression of NF- κ B. Among them, 9 samples

showed significant inhibition of the activation of NF- κ B after LPS stimuli in transfected human SCC-13. The inhibitory effects ranged from 30 to 50% compared to the control group.

[PB4-4] [04/19/2001 (Thr) 15:30 – 16:30 / Hall 4]

The effects of rutin, alginate and allicin on NO production and adhesion molecule expression by radiation in human endothelial cells

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Inflammation is one of the major consequences of radiation injury. This process is influenced by a number of factors, such as adhesion molecules expressed either on leukocytes or on endothelial cells (ECs), shear forces and molecules produced by ECs, and circulating blood cells. Since previous studies have shown that the production of NO and the ICAM-1 expression were increased in γ -ray exposed human umbilical vein endothelial cells (HUVEC), we investigated the effect of the various compounds (rutin, alginate and allicin) on the production of NO and cell-surface expression of adhesion molecules (ICAM-1, VCAM-1, E-selectin) in radiation-induced inflammatory state of HUVEC. After irradiated HUVEC were treated with various compounds for 4 days, NO production and the expression of adhesion molecules by HUVEC were assessed by colorimetric assay and ELISA, respectively. Our results demonstrated that rutin, alginate and allicin reduced radiation-induced ICAM-1 expression and E-selectin. In addition, NO production was reduced by rutin, allicin and alginate treatment on HUVEC. These data suggest that rutin, alginate, and allicin may be anti-inflammatory agents for the therapeutic potential in radiation-induced inflammatory response.

[PB4-5] [04/19/2001 (Thr) 15:30 – 16:30 / Hall 4]

Activation of Immune response by production of cytokines , Interleukin 1(IL-1) and tumor necrosis factor(TNF- α), in LPS- stimulated RAW 264.7 treated with aqueous extract of Korean Propolis

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An aqueous extract of Korean Propolis was assayed for immune responses. Propolis has been used for thousands of years in folk medicine for lots of purposes including immunostimulating and antibacterial properties made by honeybees from the buds and bark of certain trees and plants. Monocytes and tissue macrophages produce at least two groups of protein mediators of inflammation, interleukin 1(IL-1) and tumor necrosis factor(TNF). Recent studies have emphasized that TNF and IL-1 modulate the inflammatory function of endothelial cells, leukocytes, and fibroblasts. Propolis synergistically augmented the production of TNF- α , IL-1 in the presence of LPS in murine macrophage cell line RAW264.7. The production of the cytokines IL-1 and TNF- α by macrophage treated with propolis(5%~20% of soup)was examined in dose dependent manner, but production of IL-1 decreased at high concentration(>25% of soup). These results suggest that propolis may function through macrophage activation.

[PB4-6] [04/19/2001 (Thr) 15:30 – 16:30 / Hall 4]

Effect of Linarin ,The main compound of Chrysanthemum zawadskiion, LPS-induced TNF- α production in murine macrophage cell line RAW 264.7 cells.