[PB4-3] [10/20/2000 (Fri) 15:30 - 16:30 / [Hall B]]

Effects of Lectin-conjugated Ellagitannin on Inhibition of Melanoma Metastasis

Lee DI°, Kim HK, Han KS

Department of Immunology, College of Pharmacy, Chungang University

Recently, studies of missile antitumor drugs which selectively act on tumor cell and display drug effects, are proceeding sprightly. This missile antitumor drugs which are increased durg effects and decreased side effecs, are ideal medication method. We studied inhibition of melanoma metastasis with lectin-conjugated ellagitannin(lectin: carbohydrate-binding protein: tumor cell specific binding protein, Wheat Germ Agglutinin: melanoma specific binding protein, ellagitannin: praecoxin A: excellent antitumor effect). In this study, we injected mouse melanoma cell, B16-F10, on right the sole of the forefoot of C57BL/6 mouse, and after administration with drug, observed the number of pulmonary tumor colony.

[PB4-4] [10/20/2000 (Fri) 15:30 - 16:30 / [Hall B]]

T-cell mitogenic activity of a lectin fraction from a wood -rotting wild mushroom Fomitella fraxinea

Lee, Ji-Seon°, Chung, Kyeong-Soo

Laboratory of Microbiology and Immunology, College of Pharmacy, Chungnam National University, Daejon 305-764, Korea

A lectin fraction, FFL (*Fomitella fraxinea* lectin), was prepared from the carpophores of *Fomitella fraxinea*, a wood-rotting basidiomycetous fungus, by extraction with 4 mM Tris buffer, precipitation with ammonium sulfate and/or ethanol and then dialysis using a cellulose tube (MWCO. 8,000 ~ 10,000). The protein to polysaccharide ratio of FFL was 3.0 ~ 39.4 when analyzed using Coomassie brilliant blue and anthrone reagent. FFL was found to agglutinate not only erythrocytes but also leukocytes as well as sarcoma 180 tumor cells, whereas it showed no hemolytic activity. In a flow cytometric analysis on splenic lymphocytes of BALB/c mice, FFL, at 2.5 ㎍/㎖ or higher, was found to be strongly mitogenic on T cells rather than non-T cells, the specificity being more remarkable than that of a well-known T cell mitogen, concanavalin A. At 100 ㎍/㎖ or higher, FFL also exhibited growth inhibition on sarcoma 180 tumor cells, the inhibition ratio being 39.7 %. Patent on this lectin fraction is now pending.

[PB4-5] [10/20/2000 (Fri) 15:30 - 16:30 / [Hall B]]

Flow cytometric investigation on antitumor activity of protein -polysaccharide fractions from mycelial culture of insects -born fungus Paecilomycetes japonica DGUM 32001

Lee JS, Lee IS, Lee, Man Hyong°, Chung KS

College of Pharmacy, Catholic University of Taegu, Laboratory of Microbiology and Immunology, College of Pharmacy, Chungnam National University Daejon 305-764, Korea

PT4, a protein-polysaccharide fraction separated from mycelial culture of a insect-born fungus, *Paecilomycetes japonica* DGUM 32001, was subjected to a flow cytometric analysis for their *in vivo* antitumor and immunomodulating activity in sarcoma 180 tumor-bearing ICR mice. When

intraperitoneally injected once daily for seven days, PT4 strongly inhibited the growth of intraperitoneally implanted sarcoma 180 cells, the inhibition ratio being 85.1 % at 100 ㎎/㎏. PT4 also strongly induced the peritoneal exudate cells (PEC) and exerted stimulatory activity in that it significantly increased the mean FSC values of splenic CD8+ T cells. PT4 also showed mild *in vitro* inhibitory activity on sarcoma 180 at the concentration of 50 ㎍/㎖ or higher. These results strongly suggest that PT4 might exert its antitumor activity through immunostimulation as well as inhibitory activity on the tumor cells.

[PB4-6] [10/20/2000 (Fri) 15:30 - 16:30 / [Hall B]]

Flow Cytometrical Analysis on Antitumor and Immunological Activities of Protein - polysaccharide Fractions from Fruit body of Grifola frondosa

Lee IS°, Lee JS and Chung K-S*

Laboratory of Microbiology and Immunology, College of Pharmacy, Chung-Nam National University, Daejon, 305-764, Korea

Turkey-tail mushroom, *Grifola frondosa*, has recently studied as antitumor immunotherapeutic agent in Japan and USA. However, most of these studies used antitumor test methods based on survival length or tumor weight of the tumor-bearing animal and no investigation was carried out on the turkey-tail mushroom cultivated in Korea. In this study, two protein-polysaccharide fractions, KGF-1 and KGF-2, were prepared from the dried carpophores of *G. frondosa* cultivated in a Korean farm and then their antitumor and immunological activities were flow cytometerically determined in ICR mice bearing sarcoma 180 cells. Of these, KGF-1 exerted stronger activity than KGF-2 in that it increased the spleen weight, size of the splenocytes and the number of peritoneal leukocytes whereas it markedly decreased the number of sarcoma 180 cells. The percent tumor inhibition of KGF-1 (100 ㎎/㎏) was 88.2 %. KGF-1 also upregulated the expression of IL-2 receptor on $CD4^+$ T cells as well as $CD8^+$ T cells. Furthermore, it showed *in vitro* direct cytotoxicity against sarcoma 180 cells. These results strongly suggest that KGF-1 is a noble antitumor agent with a potent immunostimulating activity.

[PB4-7] [10/20/2000 (Fri) 15:30 - 16:30 / [Hall B]]

A humanized anti-4-1BB monoclonal antibody suppresses antigen-induced humoral immune response in non-human primates

Hong HJ,* Lee JW,† Park SS,* Kang YJ,* Chang SY,† Kim KM,† Kim JO,† Murthy KK,‡ Payne JS,‡ Yoon SK,§ Park MJ,§ Kim IC,§ Kim JG,¶ and Kang CY2†

*KRIBB, Taejon 305-600; College of †Pharmacy and ¶Medicine, Seoul National University, Seoul; ‡ Southwest Foundation for Biomedical Research, San Antonio, TX; and §Biotech Biotech Research Institute, LG Chemical Ltd., Taejon 305-380

The interaction of 4-1BB and its ligand plays an important role in the regulation of T cell-mediated immune response. In this study, we examined the effect of a humanized anti-4-1BB monoclonal antibody (H4B4) on ovalbumine (OVA)-induced immune responses in baboons. Previously, we generated and characterized a mouse mAb, 4B4 against human 4-1BB molecule. Based on this Ab, we constructed a humanized version of 4B4 mAb and the resultant Ab, H4B4 showed full recovery of the binding activity of the original Ab 4B4: 1.5-fold increase in affinity for 4-1BB. In addition, H4B4 mediated ADCC of activated human PB T cells and CEM cells in a dose-dependent manner. Weekly administration of H4B4 at doses of 1 or 4 mg/kg could suppress IgG production against OVA. This was not due to the overall immune suppression since the numbers of B and T cells and the total IgG production were not altered during the treatment with H4B4. These findings suggest that the treatment of H4B4 may be a valid therapeutic approach to control unwanted