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

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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

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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