㎍/㎖, lectin 10㎍/㎖, praecoxin A 10㎍/㎖ to normal murine macropharge. Both in vitro and in vivo, lectin-conjugated praecoxin A did not show stronger effects than lectin and praecoxin A even though lectin-conjugated praecoxin A showed an increase in IL-6 mRNA expression in accordance with the dose & the time, and showed the similar increase with lectin or praecoxin in IL-6 mRNA expression

[PB4-9] [04/19/2001 (Thr) 15:30 - 16:30 / Hall 4]

Effects of Lectin-conjugated Ellagitannin on the IL-1β gene expression of macrophage

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Lectin-conjugated praecoxin A, which is conjugated the praecoxin A, a kind of tannins extracted from plants, with the wheat germ agglutinin(WGA) that specifically binds to melanoma, of carbohydrate-binding proteins(lectin), is a compound aiming the development of the missile antitumor drug selectively being activated in cancer cells. Besides the direct antitumor effect of this compound, we have tried to prove an immune activity as a tannin through the macrophage activation by Lectin-conjugated praecoxin A. This has been done by conducting the IL-1 gene expression in vivo and in vitro. We analyzed the total RNA by using RT-PCR at 4. 8. 12. 24 hours after the incubation after adding the lectin-conjugated praecoxin A of 1, 10, 100㎍/㎖, lectin 10㎍/㎖, praecoxin A 10㎍/㎖ to normal murine macropharge. As a result, the lectin-conjugated praecoxin A increased the IL-1β mRNA expression according to the time and the dose. However, no outstanding increase effect (great superiority) comparing to lectin and praecoxin A has been seen through out the study.

[PB4-10] [04/19/2001 (Thr) 15:30 - 16:30 / Hall 4]

Hydroquinone enhances the levels of interleukin-4 production and IgE in antigen-primed BALB/c mice

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Hydroquinone (HQ), a major metabolite of benzene, is present in large quantities in cigarette tar and represents the predominant form of human exposure to benzene. In this study we investigated the ability of HQ to enhance the production of IL-4 in antigen(alum)-primed BALB/c mice. HQ was found to enhance IL-4 production by keyhole limpet hemocyanin (KLH)-primed lymph node cells in a dose-dependent manner. The enhancing effect of HQ on IL-4 production was approximately maximal at a concentration of 50 μM with 10-fold increased levels of IL-4 production. HQ enhanced KLH-induced IL-4 mRNA expression, suggesting that the enhancing effect of HQ on IL-4 production may occur at the transcriptional level. To determine whether HQ could up-regulate IL-4 production in vivo, HQ was given i.p (10 mg/kg for 14 days every other day during KLH immunization) in BALB/c mice. HQ treatment resulted in significant increase of IL-4 and IgE levels in KLH-primed mice. These findings provide an evidence that HQ enhances allergic immune responses in cigarette smokers.

[PB4-11] [04/19/2001 (Thr) 15:30 - 16:30 / Hall 4]

Inhibition of interleukin-12 p40 production in lipopolysaccharide-stimulated mouse macrophages by costunolide, a sesquiterpene lactone

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Interleukin-12 (IL-12) plays a prominent role in the development of Th1 cell-mediated immune responses. Th1 cell-mediated immune responses have been implicated in the pathogenesis of chronic inflammatory autoimmune diseases. Thus, pharmacological control of IL-12 production may be a key therapeutic strategy for modulating immunological diseases dominated by Th1-derived cytokine responses. In this study we investigated the effects of costunolide, a prominent sesquiterpene lactone of Saussureae radix, on IL-12 production in mouse macrophages stimulated with lipopolysaccharide. Costunolide potently inhibited the production of IL-12 in a dose-dependent manner. The effect of costunolide on IL-12 p40 promoter activation was analyzed by transfecting RAW264.7 monocytic cells with p40 promoter/reporter constructs. The repressive effect mapped to a region in the p40 promoter containing a binding site for nuclear factor kappaB (p40-kappaB). Furthermore, activation of macrophages by lipopolysaccharide resulted in markedly enhanced binding activity to the kappaB site, which significantly decreased upon addition of costunolide. These results suggest that costunolide inhibited-inhibition of IL-12 production in macrophages may explain some of the biological effects of costunolide including its anti-inflammatory activity.

[PB4-12] [04/19/2001 (Thr) 15:30 - 16:30 / Hall 4]

Possible receptors for bovine lactoferrin on human monocytic THP-1 cells

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A variety of biological functions of human LF (H-LF) and bovine LF (B-LF) have been demonstrated in host defense, especially in immune responses, antibacterial activity and transcriptional activation of cells. Here, we discuss the characteristics of the binding of B-LF to THP-1 cells and partly compare the binding patterns of B-LF and H-LF. When we examined the binding of B-LF to THP-1 cells by Western blot analysis using B-LF labeled with biotin and a lysate of THP-1 cells, we found that B-LF binds to at least three types of molecules with molecular weights of about 25, 35 and 65 kDa in THP-1 cells. Also, the binding of B-LF to THP-1 cells was strictly dose-dependent. Further analysis revealed that the molecules with a M.W. of about 35 kDa among those that bound to B-LF are associated with the surface membrane of THP-1 cells, whereas the other molecules were derived from the cytosolic fraction. Inhibition tests using various saccharides showed that the binding was not inhibited by addition of a high concentration (100 mM) of GlcNAc, GalNAc, mannose or lactose, suggesting that oligosaccharides attached to B-LF are not involved in the binding of this glycoprotein to THP-1 cells. Comparison of the binding capacity of B-LF and H-LF showed that B-LF more strongly binds to THP-1 cells, although both B-LF and H-LF bind to the same molecules in THP-1 cells. Further analysis to characterize the specific binding of B-LF to THP-1 cells is now in progress.

Poster Presentations - Field C1. Biochemistry

[PC1-1] [04/19/2001 (Thr) 15:30 - 16:30 / Hall 4]

SELECTIVE INHIBITION OF HUMAN CYTOCHROME P450 1A1 BY 3, 3',4, 5, 5'-PENTAMETHOXYSTILBENE