manner. To elucidate the molecular mechanisms of tanshen for the inhibition of degranulation of mast cell, several important signaling events were selected and the effects of tanshens were studied on these signaling components. Stimulation of RBL-2H3 cells with antigen resulted in the tyrosine phosphorylation of mitogen-activated protein kinase extracellular signal-regulated kinase 1 (ERK1 (p44) and ERK2 (p42)), phospholipase C γ-2, syk and pyruvate kinase. Both dihydrotanshinone-I and cryptotanshinone inhibited the tyrosine phosphorylation of ERK1 and ERK2 in a dose-dependent manner but it did not show any effect on other components tested. Dihydrotanshinone-I also inhibited antigen-stimulated intracellular translocation of ERK1/ERK2 to the nucleus. When RBL-2H3 cells were treated with tanshinones, the activity of pyruvate kinase significantly decreased. The dose-response curve (Tanshinone vs. pyruvate kinase activity) plotted at 20 min after treatment of tanshinone showed that the pyruvate kinase was dose-dependently inhibited and the maxium inhibition was reached at the concentration of 25 μM of 15,16-dihydrotanshinone-I.

[PA1-30] [04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl, Bldg 3]]

Effects of Rhus verniciflua on Hepatic Drug-metabolizing Enzymes

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Effects of Rhus verniciflua on hepatic drug-metabolizing enzymes and CCl4-induced hepatic toxicity were investigated in rat. After air-dried powders of Rhus verniciflua acetone extract were intraperitoneally injected into rats at doses of 10, 20 and 40 mg/kg , the level of cytochrome P450 was measured and the activities of cytochrome P450 isozymes including ethoxyresorufin-O-dealkylase(EROD), benzyloxyresorufin-O-dealkylase(BROD), aniline hydroxylase, p-nitrophenol hydroxylase(PNPH) and testosterone 6β-hydroxylase were assayed. Treatment with Rhus verniciflua produced increases in the level of cytochrome P450 and the activities of EROD, aniline hydroxylase and PNPH and this effect of Rhus verniciflua was the maximal level at 10 mg/kg treatment. However, BROD activity was decreased and the most low at 40 mg/kg. Additionally, rats were pretreated with Rhus verniciflua(20 mg/kg, ip) daily for 4 days, 3-hr after final treatment on the 4th day, CCl4, 0.3 ml/kg was intraperitoneally injected. Serum levels of ALT and AST and lipid peroxidation were measured. Based on serum ALT and AST levels, Rhus verniciflua appeared to be protective effect against CCl4-induced hepatotoxicity.

[PA1-31] [04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl, Bldg 3]]

Effects of resveratrol and related hydroxystilbenes on the production of nitric oxide from macrophage cells

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Effects of resveratrol on the production of nitric oxide were studied from mouse macrophage cells. Resveratrol significantly inhibited the LPS-induced nitric oxide production in a dose-dependent manner. To study the structure activity relationship resveratrol and 10 related hydroxystilbene compounds, β-estradiol were tested the inhibition of nitric oxide production Resveratrol and 3,5-dihydroxy-4'-methoxystilbene showed prominent inhibitory activities and their IC50 values were 17 and 25 μM, respectively. However, β-estradiol did not produce noticeable effect on nitric oxide production at physiological concentrations, suggesting that estrogen receptor is not involved for the inhibition of nitric oxide production. Resveratrol failed to inhibit the LPS-induced tyrosine phosphorylation of MAPK. At relatively high concentration (100 μM), resveratrol inhibited the mobilization of NF-kB.