cytotoxicy of all the flavonoids tested was not affected by P-glycoprotein mediated MDR.

[PE1-19] [04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl, Bldg 3]]

Antifibrotic Effects of the Rhodiola sachalinensis in Fibrotic Rats induced by carbon tetrachloride

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This study was carried out to investigate the protective effects of hot water extract from *Rhodiola sachalinensis* (RS) on carbon tetrachloride-induced liver fibrosis in rats.
Liver injury was induced by oral administration of carbon tetrachloride (1 ml kg-1) twice a week during 4 weeks of RS treatment. The RS (50, 100 and 200 mg kg-1) treatment in carbon tetrachloride (CCl_4) rats reduced the serum AST, ALT and ALP levels significantly ($p<0.01$ for 50, 100 and 200 mg kg-1). RS treatment reduced levels of liver hydroxyproline content ($p<0.05$ for 50 mg kg-1 and $p<0.01$ for 100 and 200 mg kg-1) and liver malondialdehyde content ($p<0.05$ for 50 mg kg-1 and $p<0.01$ for 100 and 200 mg kg-1). The morphological characteristic of fibrotic liver which appeared in CCl_4 group were improved in RS treated CCl_4 groups. Immunohistochmical examination showed that RS markedly reduced numbers of alpha-smooth muscle actin positive hepatic stellate cells in the CCl_4 rats. These results indicate that RS has an antifibrotic effect on fibrotic rats induced by CCl_4.

[PE1-20] [04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl, Bldg 3]]

Effect of Salvia miltiorrhiza on biliary liver fibrosis in rats and on cultured rat hepatic stellate cells

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This study was carried out to investigate the antifibrotic effect of traditional Chinese medicinal herb, *Salvia miltiorrhiza*, on liver fibrosis induced by biliary obstruction and the antiproliferative effect on cultured rat hepatic stellate cells (HSC).
Secondary biliary fibrosis was induced in male Sprague-Dawley rats by bile duct ligation/scission (BDL). Water soluble extract of *Salvia miltiorrhiza* roots (SM) was administered orally (100 mg/kg), daily after surgery. The animals were killed after 4 weeks. In BDL rats, levels of AST, ALT, alkaline phosphatase, total-bilirubin, total-cholesterol in serum and hydroxyproline, malondialdehyde content in liver were significantly increased. The SM treatment reduced the serum AST, ALT, alkaline phosphatase, and total-cholesterol levels significantly ($p<0.01$). Liver hydroxyproline content and malondialdehyde content in SM treated BDL rats was also reduced to 45% and 60%, repectively, that of BDL control rats ($p<0.01$). The morphological characteristic of fibrotic liver which appeared in BDL control group were improved in SM treated BDL groups. Immunohistochmical examination showed that SM markedly reduced numbers of alpha smooth muscle actin (a-SMA) positive HSCs in the BDL rats. SM markedly suppressed bromo-deoxy-uridin incorporation in HSCs stimulated by platelet-derived growth factor-B subunit homodimer in a concentration-dependent manner.
These results indicate that traditional Chinese medicinal herb, water soluble extract of *Salvia miltiorrhiza*, significantly reduces BDL-induced progressive portal fibrosis in rats and the antifibrotic effect may be due to the inhibition of HSC proliferation.

[PE1-21] [04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl, Bldg 3]]