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A novel lectin has been purified from the fruiting bodies of the mushroom, *Fomitella fraxinea*, which belongs to bracket fungi by a combination of ion-exchange chromatography on DEAE-cellulose and gel filtration chromatography on Sephacryl S-200 HR. The lectin, designated as FFrL, was a homotetrameric protein with a molecular weight of 50 kDa as demonstrated by SDS-PAGE (sodium dodecyl sulfate-polyacrylamide gel electrophoresis) and MALDI-TOF-MS (matrix assisted UV laser desorption/ionization time-of-flight mass spectrometry). When amino acid composition was analyzed, FFrL was found to be rich in acidic amino acids. FFrL agglutinated various cells including the erythrocytes of mouse and rat, the thymocytes of mouse, RAW 264.7 and sarcoma 180 murine cell lines, THP-1 and HeLa human cell lines but did not agglutinate human erythrocytes. D(+) fructose and methyl-D mannopyranoside inhibited hemagglutinating activity of FFrL. The immunomodulatory activity of FFrL was demonstrated by its potent proliferative activity toward murine splenic lymphocytes. The mitogenic activities of FFrL determined by flow cytometric analysis and XTT assay were more potent than those of Con A.

[PC1-21] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Chemopreventive Allylthiopyridazines, K compounds, Inhibit Invasion, Migration and Angiogenesis in SK-Hep-1 Hepatocarcinoma Cells Possibly via MMP-2 Downregulation

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Dietary organosulfur compounds have been shown to inhibit the proliferation of tumor cells. Synthetic sulfur-containing compounds including oltipraz exert chemopreventive and hepatoprotective effects. We previously showed that synthetic allylthiopyridazine derivatives designated as K compounds induced apoptosis in SK-Hep-1 hepatocarcinoma cells (Eur. J. Cancer: 37, 2104-10, 2001). In the present study, we investigated the effects of the K compounds on invasive and migrative properties of SK-Hep-1 cells. Here, we show that 3-methoxy-6-allylthiopyridazine (K6) and 3-propoxy-6-allylthiopyridazine (K17) efficiently inhibit SK-Hep-1 cell invasion and migration. A prominent downregulation of matrix metalloproteinase (MMP)-2 was observed, suggesting that the compounds inhibit invasion and migration possibly through a specific downregulation of MMP-2. Since hepatocellular carcinoma is characterized as a hypervascular tumor, we further investigated the possible inhibitory effect of the K compounds on angiogenesis. The compounds exerted anti-angiogenic activity as evidenced by tube formation of human umbilical vein endothelial cells (HUVECs). Taken in conjunction with the fact that hepatocellular carcinoma is one of the most lethal malignancies and there is no effective preventive measure to date, our findings may be critical to the chemopreventive potential of the compounds for hepatocellular carcinoma.

[PC1-22] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Characterization of 2-hydroxymuconic semialdehyde dehydrogenase from Burkholderia cepacia G4

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