induction of Bax expression. The release of cytochrome c from mitochondria into the cytosol was increased in response to DMHS. Taken together, DMHS leads to apoptotic cell death through a caspase-dependent mechanism. Increased Bax expression and release of cytochrome c are important to apoptotic effect of DMHS in HL-60 cells.

[PC1-15] [10/20/2000 (Fri) 15:30 - 16:30 / [Hall B]]

Possible roles of reactive oxygen species and Rac1 in capsaicin -induced apoptosis of H-ras-transformed breast epithelial cells

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Efforts have been made to develop a chemoprevention strategy that selectively triggers apoptosis in malignant cancer cells. Capsaicin(trans-8-methyl-N-vanillyl-6-nonenamide), the major pungent phytochemical in red pepper, has been recently shown to exert anti-carcinogenic or chemopreventive properties. We have previously shown that capsaicin selectively induces apoptosis of H-ras transformed human breast epithelial cells (H-ras MCF10A) in which activation of c-Jun N-terminal protein kinase-1 (JNK-1) and deactivation of extracellular signal-regulated kinases (ERKs) may be involved. Since Ras-transformed fibroblasts were shown to produce reactive oxygen species (ROS) through a mechanism which is dependent of Rac1, we wished to further investigate on the capsaicin modulation of H-ras pathway and ROS generation for better understanding the mechanism of the selective chemopreventive effect of capsaicin. Here, we show that capsaicin treatment induce ROS generation in H-ras MCF10A cells. We also show that capsaicin-induced growth inhibition was significantly inhibited in H-ras MCF10A cells expressing a dominant negative Rac1 gene product (N17 rac1). These results suggest that Rac1 may be critical to the capsaicin-induced apoptosis and that Rac1 is a downstream effector of Ras in signal transduction pathway. Effects of capsaicin on TPA-induced NF-kappaB activation in these cells are currently being investigated.

[PC1-16] [10/20/2000 (Fri) 15:30 - 16:30 / [Hall B]]

Biochemical Characteristics and Immunomodulating Effect of the Lectin from Allomyrina dichotoma.

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A new lectin from Allomyrina dichotoma (ADL) was purified by physiological saline extraction, ammonium sulfate fractionation, anion exchange column chromatography on DEAE Sephadex A-50 and gel filtration column chromatography on Sephadex G-200.
Several biochemical properties of this lectin were characterized and the results are as follow :
0.1M fraction of ADL from gel filtration column chromatography showed one band on SDS-PAGE.
A purified lectin agglutinated the erythrocytes of rabbit and human A, B, O, AB.
Agglutinability was relatively stable at basic pH, and was stable at temperature below 40℃. The lectin activity was not affected by some metal ions and chealating agent, EDTA.
The molecular weight of ADL was estimated to be 97,000 dalton by SDS-polyacrylamide gel electrophoresis.
The lectin's immunomodulating effect was measured as cytokine production from peripheral blood mononuclear cells(PBMC) by ELISA(enzyme linked immunosorbent assay).
1×106 cells/㎖ of PBMC were obtained from healthy volunteers and stimulated with ADL for various times(1, 4, 8, 24, 48, 72 and 96 hours). ADL was prepared as 0.3 of optical density. Assay for 5 cytokines (IL-1α, IL-2, IL-6, IFNγ and TNFα) production was measured and the highest cytokine secretion was demonstrated at 24 hours with IFNγ and at 4 hours with TNF-α.