Department of Pharmacology, Chung Ang University

It has been reported that extremely low frequency magnetic field (ELF MF) is related to alteration of nitric oxide synthase (NOS) activity in vitro. To confirm this result, we studied effects of MF on nitric oxide (NO) pathway in central nerve system (CNS) in vivo. Rats were exposed to sham or 20 G MF (60Hz) for 5 days. In drug experiment, NNA, NOS inhibitor, was administered (10mg/kg, i.p.) once a day during MF exposure. We measured NOS activity, c-GMP level in brain, and pain threshold before and after sham or MF exposure, and NNA. MF exposure increased NOx and c-GMP level in striatum, hippocampus and thalamus, in which this elevation of NOx and c-GMP by MF was blocked by NNA treatment. There was no change of NOx or c-GMP by MF in cortex and cerebellum. Response to thermal stimuli, reported to change according to NO level in brain, was decreased by MF and recovered to normal state by NNA treatment during MF exposure. From these results, we suggest that MF exposure activates NOS pathway in brain, which implicates that MF may alter the brain functions such as behaviors, mood and memory.

Poster Presentations - Field B4. Immunology

[PB4-1] [10/18/2001 (Thr) 14:00 - 17:00 / Hall D]

Mechanism of Allicin-induced apoptosis in Human Gastric Epithelial Cell Lines

Park SY°, Rhee DK , Pyo S

College of Phamacy, Sungkyunkwan University

Garlic (*Allium sativum*) may be one food that contributes constituents that significantly affect human health. Garlic compounds have been shown to inhibit growth of tumors and to modulate the activity of carcinogenesis. Allicin (diallyl sulfide, DAS) is a main component of garlic. Since the mechanism of allicin in tumor growth inhibition remains unclear, we examined whether allicin affects each of the apoptotic parameters measured, i.e., viability, cell cycle arrest and sub-G1 content, morphological change, caspase-3 and -8 activation , and DNA fragmentation. The *in vitro* effect of allicin (5㎍/㎖, 10㎍/㎖, and 20㎍/㎖) on the growth of gastric epithelial cells (Kato III$^{p53(-)}$) was evaluated, and allicin had the inhibitory effect of tumors cells growth in a dose dependent manner. Our data also showed that the inhibitory effect of allicin on proliferation of tumor cells was associated with cell cycle arrest from S to G2M phase transition and with induction of apoptosis. The apoptosis of tumor cells was confirmed by DNA ladder formation and morphological change. However, activation of caspase-3 and -8 was not observed during allicin-induced cell death. In addition, morphological changes and sub-G1 contents was not inhibited by peptide caspase inhibitor(Z-VAD-FMK). These data suggest that allicin-induced cell death is caspases independent and p53 independent.

[PB4-2] [10/18/2001 (Thr) 14:00 - 17:00 / Hall D]

Study on immunomodulatory effect of a prescription including Agaricus blazei murrill

Lee JooRyung, Woo HeeJong+ Kim SungHoon

Department of Oncology, Graduate school of East-West medicine, Kyung Hee University, Yonin, Korea, +Department of Immunology, College of Veterinary Medicine, Seoul National University Suwon, Korea

Agaricus blazei murrill was reported to have immunostimulating and antitumor activities just like other mushrooms. Thus, we formulated a prescription including Agaricus blazei murrill(PAM) as a major