

## frequency magnetic field exposure.

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It has been shown that extremely low frequency time-varying magnetic field (MF) modulate the function of brain. We, therefore, were aimed at observing whether MF affects the central nerve system. We have studied the level of catecholamines and indolamines in rat brain using HPLC-ECD analysis system. The rats were exposed to sham or MF during 1, 2 and 3 days. After exposure, the parts of brain (cortex, hippocampus, striatum, cerebellum and thalamus) were isolated at the same time of day in order to escape the circadian rhythm of level in catecholamines and indolamines. The isolated brain samples were sonicated in 0.1 M perchloric acid and then centrifuged for the HPLC-ECD analysis to detect norepinephrine, DOPAC, dopamine, HIAA, HVA and serotonin. Exposure of rats to MF produced the increase of the level of norepinephrine, HVA and HIAA in striatum. In thalamus, norepinephrine also increased but dopamine decreased. These data suggests that exposure of extremely low frequency time-varying magnetic field to rats changes neurotransmitters such as norepinephrine or serotonin as well as their metabolites

[PA2-1] [ 10/19/2000 (Thr) 10:00 - 11:00 / [Hall B] ]

### **Peroxynitrite scavenging and cytoprotective activity of 2,3,6-tribromo-4,5-dihydroxy benzyl methyl ether from marine alga *Symphyclocladia latiuscula***

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Peroxynitrite (ONOO<sup>-</sup>), formed from the reaction of superoxide (·O<sub>2</sub><sup>-</sup>) and nitric oxide (·NO), is a cytotoxic species that can oxidize several cellular components such as proteins, lipids, and DNA. It has been implicated in diseases such as Alzheimer's disease, rheumatoid arthritis, cancer, and atherosclerosis. Due to the lack of endogenous enzymes responsible for ONOO<sup>-</sup> inactivation, developing a specific ONOO<sup>-</sup> scavenger is considerably important. The aim of this study was to evaluate the ability of marine natural products to scavenge ONOO<sup>-</sup> and to protect cells against ONOO<sup>-</sup>. Methanolic extracts of 17 marine alga were tested for their ONOO<sup>-</sup> scavenging activity. Among them, *Symphyclocladia latiuscula* showed the potent scavenging activity. CH<sub>2</sub>CH<sub>2</sub> fraction of the methanol extract of *S. latiuscula* was highly effective for ONOO<sup>-</sup> scavenging activity. Further analysis of the active fractionated extract identified 2,3,6-tribromo-4,5-dihydroxy benzyl methyl ether (TDB) as a potent ONOO<sup>-</sup> scavenger. The data demonstrated that TDB led to decrease ONOO<sup>-</sup>-mediated nitration of tyrosine through electron donation. TDB showed the significant inhibition on nitration of bovine serum albumin (BSA) and low-density lipoprotein (LDL) by ONOO<sup>-</sup> in a dose-dependent manner. They also provided cytoprotection from cell damage induced by ONOO<sup>-</sup>. TDB can be developed as an effective peroxynitrite scavenger for prevention of involved diseases.

[PA3-1] [ 10/19/2000 (Thr) 10:00 - 11:00 / [Hall B] ]

### **Antiestrogenic effect of Conjugated linoleic acid on several estrogen-like compounds in MCF-7 human breast cancer cell**

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