The aim of this study was to investigate a potential antihypertensive and antihyperglycemic effects of Ginseng Radix palva (GRP) and Ginseng Radix Alba (GRA) in spontaneously hypertensive rat (SHR) injected with streptozotocin (STZ). Animals were divided into four groups containing 6 rats each as follows : Group 1, SHR drinking a tap water (hypertensive control) ; Group 2, SHR-STZ (hypertensive and hyperglycemic control) ; Group 3, SHR-STZ administered with 500 mg/kg/day of GRA ; Group 4, SHR-STZ administered with 500 mg/kg/day of GRP. Ginseng Radices were administered to 6 week-old SHR-STZ rats for 4 weeks and blood pressure (SBP, DBP), heart rate and blood glucose were determined at 2 weekly. After 4 weeks, serum creatinine, urinary albumin excretion(UAE) and glomerular TGF-beta mRNA and protein levels were compared between experimental groups. Ginseng Radices treated groups improved hypertensive and hyperglycemic abnormalities when compared to the SHR-STZ control.

[PA1-37] [04/20/2001 (Fri) 10:30 - 11:30 / Hall 4]

G protein and MAP kinase mediates sphingosylphosphorylcholine-induced feline ileal smooth muscle cell contraction.

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It has been shown that sphingosylphosphorylcholine (SPC) produced pertussis toxin sensitive contraction of feline ileal smooth muscle cells (Lee et al., 1999). We studied further mechanism of the contraction that might involve the activation of a certain Gi protein and phospholipase and kinases-dependent pathway using Western blot and GTPrS binding techniques. Western blotting using G protein antibody revealed that subtypes of Gi1, Gi3 and Go existed in feline ileum. Gi3 antibody treatment in permeabilized single cells isolated with collagenase decreased SPC-induced contraction. In addition, [^{35}S]GTPrS binding study showed that Gi3 subtype activated significantly after SPC treatment, because SPC elevated the binding of Gi3 protein with [^{35}S]GTPrS. To examine the relation of MAP kinase and SPC-induced contraction, we pretreated PD 98059, MEK inhibitor, and SB202190, p38 MAP kinase inhibitor. The contraction was blocked by PD 98059, but not by SB 202190. PKC inhibitor, chelerythrine, and PLC inhibitor, neomycin also decreased the contraction. However, co-treatment of PD98059 and chelerythrine showed no significant difference. When we examined MAP kinase activation using phospho MAP kinase antibody, SPC increased the band of phospho-MAP kinase. We suggest that SPC-induced contraction is mediated via pathway involving Gi3 protein coupled to PLC, resulting in the activation of PKC and p42/44 MAP kinase in feline ileal smooth muscle cells.

[PA1-38] [04/20/2001 (Fri) 10:30 - 11:30 / Hall 4]

The effect of extremely low frequency magnetic fields on NO levels in brain regions of rats

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It has been shown that the extremely low frequency magnetic fields (MFs) produce the biological effects in the brains. MFs affect nitric oxide (NO) production, which plays a major role in neurotransmission and pathogenesis in the brain. To confirm the relevance of NO and MFs in the brain, we investigated the concentration of NO in various brain areas (cortex, cerebellum, hippocampus thalamus and striatum) of rats following exposure to MFs. Rats were exposed for 2 or 5 days to MFs (60Hz, 10, 15, 20 gauss, G) or sham in a laboratory exposure facility. 20 G MFs exposure for 2 or 5 days caused a continuous increase in NO release of hippocampus, thalamus and striatum, whereas no changes were obtained in cerebellum and cortex. Low strength in MFs did not alter the