assay, while L-DOPA (100-150 μM) showed the decrease in cell viabilities. When berberine (20 μM), palmatine (50μM) or coptisine (20μM) was associated with 20-50μM L-DOPA, a concentration-dependent decrease in cell viabilities was observed by an apoptotic process, respectively. These results indicate that berberine, palmatine and coptisine enhance L-DOPA-induced neurotoxicity in PC12 cells.
*supported by the Brain Korea 21 project.

[PB3-4] [04/19/2001 (Thr) 15:30 - 16:30 / Hall 4]

The effects of passive administration and self-administration of methamphetamine on serotonin receptors level in rat brain

Park KS°, Kim HJ, Han JY, Hong JT, Kim YK, Lee JK, Ahn KS, Seo SK, Chung SY, Ha KW and Lee SH

National Institute of Toxicological Research, Korea Food and Drug Administration, Seoul

(+)-Methamphetamine (METH) is a psychostimulant, which has been the most popular abused drug in Korea. The rewarding mechanism in METH abuse has been reported to be mediated by dopaminergic system. Recently, it has been reported that dopamine releaser (phentermine) plays a dominant role in the discriminative stimulus effects of METH, whereas 5-HT releaser (fenfluramine) can strongly modify METH self-administration. The present study is designed to assess the behavioral changes and the changes of the serotonin receptors in the brains of rats administered repeated or self-administered METH. The repeated administration of 1.0 mg/kg/day METH for 12 days increased locomotor activities, and there was no difference between i.v. and i.p. treatment. Rats had acquired actively METH self-administration for 3 weeks at 0.1 or 0.2 mg/kg/injection. Whereas, it was taken few days to acquire sucrose pellet self-administration. The binding of [3H]-8-hydroxy-DPAT (5-HT^{1A} receptors) and [3H]-5-carboxytryptamine (5-HT^{1B} receptors) to brain sections was examined. Both passive administration and self-administration of METH did not change significantly the serotonin receptors levels in hippocampus, striatum and nucleus accumbens. These results suggest that serotonin receptors may not change in the acquisition period of METH self-administration, and we are trying to investigate the serotonin receptors levels of brain in rats maintained of METH self-administration.

[PB3-5] [04/19/2001 (Thr) 15:30 - 16:30 / Hall 4]

The blood-brain barrier permeability of antioxidants, ebselen in rats

Lee NY°, Kang Y-S

College of Pharmacy, Sookmyung Women's University

Ebselen is a lipid soluble seleno-organic compound with anti-oxidate activity through a glutathione peroxidase-like action. Ebselen also have the potential effect to protect the brain against ischemic insults. In this study, we investigated the brain uptakes through the blood-brain barrier and *pharmacokinetic parameters of ebselen in SD rats by intravenous injection technique. Ebselen was* administered intravenously to rats and the concentration of ebselen in plasma and brain was determined by HPLC at various time. The plasma concentration of ebselen declined biexponentially with elimination half-life of approximately 30 min. The blood-brain barrier permeability of ebselen after IV injection at 30 min was high compared with that of morphine. This results indicated that ebselen can be uesd for neuropharmaceutical agent to stroke because it uptakes to the brain very well even though it metabolised very rapidly in blood.

[PB3-6] [04/19/2001 (Thr) 15:30 - 16:30 / Hall 4]