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# Effects of Ginseng Total Saponin on methamphetamine-induced Hyperactivity and Striatal Dopamine Increase in Mice

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The present study was undertaken to investigate the behavioral and biochemical effects of ginseng total sponin (GTS) on methamphetamine-treated mice. GTS (50 or 100 mg/kg) was administered intraperitoneally two times with 2 hour interval. Two hours after the second injection of GTS, methamphetamine ( 2 mg/kg) was administered subcutaneously. The ambulatory activity of mice was measured by the tilting-type ambulometer every 10 min. for 1 hour. Methamphetamine-induced hyperactivity was reduced by GTS in a dose-dependent manner. To study the neurochemical mechanism underlying the GTS effects, monoamine contents were measured from brain tissues. After 45 min. of methamphetamine injection, mice were sacrificed and monoamine contents were determined from the striatum. Biochemical analysis revealed that GTS reduced the methamphetamine-induced increase in striatal dopamine contents. These observations indicate that inhibition of methamphetamine-induced hyperactivity by GTS is mediated by the modulation of dopaminergic nervous system, and it could be helpful for the therapy of hyperactivity.