Hypoglycemic effect of syringin from Eleutherococcus senticosus in streptozotocin-induced diabetic rats.

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Abstract

Eleutherococcus senticosus (Araliaceae) is a very powerful adaptogenic agent. In the present study, the effects of syringin, an active principle of this herb, on plasma glucose levels in streptozotocin-induced diabetic rats (STZ-diabetic rats) were investigated. Thirty minutes after syringin was intravenously injected into fasting STZ-diabetic rats, plasma glucose levels dose-dependently decreased. In normal rats, syringin at the effective dose (1.0 mg/kg) significantly attenuated the increase in plasma glucose caused by an intravenous glucose challenge. Syringin dose-dependently (0.01 to 10.0 micromol/L) stimulated glucose uptake in soleus muscle isolated from STZ-diabetic rats. Syringin treatment of hepatocytes isolated from STZ-diabetic rats enhanced glycogen synthesis . The ability of syringin to enhance glucose utilization and lower plasma glucose level in rats suffering from insulin deficiency suggest that this chemical may be useful in the treatment of human diabetes.