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Anti-hyperglycemic effect and single oral toxicity of SPP003

Yong-Hyuk Kim[0], Hyun-Ae Eum, Woo-Yong Lee, Sang-Ho Lee, Hyun-Young Kim[1], Sun-Mee Lee

College of Pharmacy, Sungkyunkwan University, Suwon, Korea

[1]Cyclogen Co. Ltd., Seoul, Korea

ABSTRACT

The SPP003 is a mixture of water extracts from Schizandrae Fructus, Poligoni multiflori Radix, Ginseng Radix Alba and Hoelen. The aim of this study was to investigate the anti-hyperglycemic effect of SPP003 in normal and streptozotocin (STZ)-induced diabetic rats, and to monitor the toxicity of SPP003. Oral glucose tolerance test (OGTT) was performed after oral administration of SPP003 100, 300, 600 and 900 mg/kg in normal rats. Blood glucose concentration was measured at -30 min (vehicle, SPP003 or tolbutamide 60 mg/kg treatments), 0 min (glucose treatment), 60, 120 and 180 min. Rats were administered STZ 65 mg/kg (0.1M citrate buffer, pH 4.5) intraperitoneally to induce diabetes and administered vehicle, SPP003 (100, 300 and 600 mg/kg) or tolbutamide (60 mg/kg) orally once a day for 4 weeks. Blood glucose level was measured at 0, 4, 7, 14, 21 and 29 day after initial drug administration. A single oral toxicity of SPP003 was studied in Sprague-Dawley rats of both sexes. In this study, rats were administered with doses of 1, 2 and 5 g/kg of SPP003. In glucose tolerance test, SPP003 900 mg/kg markedly decreased glucose concentration at 1 hr after glucose treatment. Blood glucose levels were much higher in STZ-diabetic rats. These increases were significantly attenuated by SPP003 600 mg/kg. SPP003 did not show any significant toxicity. These findings suggest that SPP003 has hypoglycemic properties in STZ-diabetic rats.