



## Effect of the methanolic extract of *Daucus carota* seeds on the carbohydrate metabolism and morphology of pancreas in type I diabetic male rats

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### Abstract

**Introduction:** Antioxidant agents have beneficial effects in diabetes mellitus. *Daucus carota* seeds extract has been shown to possess antioxidant activity. In this study, the effect of the methanolic extract of *Daucus carota* seeds on carbohydrate metabolism and morphology of pancreas was investigated in type I diabetic male rats.

**Methods:** Type I diabetes mellitus was induced in male Wistar rats by injection of 70 mg/kg, i. p. of streptozotocin. Blood samples were collected from the eye cavernous sinus, before and 5 days after injections for measurement of glucose and insulin. Diabetes was confirmed in rats that had FBS levels above 250 mg/dl. Diabetic rats were divided to 5 groups that received 100, 200 and 300 mg/kg of the extract, glibenclamide (600 µg/kg) and distilled water (0.5 ml) daily for 6 days by gastric gavage. After 6 days, they were sacrificed by decapitation and fasting blood samples were collected and serum levels of glucose and insulin were measured by spectrophotometric and ELISA methods, respectively, by using commercial kits. The pancreas of the rats were dissected out and fixed in 10% formaldehyde for histological studies.

**Results:** Administration of all doses of *Daucus carota* seeds extract and glibenclamide for 6 days significantly decreased serum glucose levels, however, only 300 mg/kg of the extract as well as glibenclamide significantly increased insulin serum levels. Furthermore the extract and glybenclamide improved pancreas asinuses and islets as the number of islets significantly increased in rats receiving 100 mg/kg of the extract or glibenclamide.

**Conclusion:** *D. carota* seeds extract has hypoglycemic effect by increasing insulin secretion and improvement of the pancreas.

**Key words:** *Daucus carota* seeds, Pancrease, Diabetes

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