Hypoglycemic effects of ethanol extracts of Cajanus cajan (L.) Millsp. roots in rats

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ABSTRACT
Background. Cajanus cajan (L.) Millsp. root cooked with the ribs can cure diabetes is recognized an aboriginal traditional therapies.

Previous studies known after a series of separation and purification from ethanol extract of Cajanus cajan root was obtained Betulinic acid, biochanin A, 5,2''-dihydroxy-7,4''-dimethoxyisoflavanone (cajanol), genistein, 2''-hydroxygenistein and other differences flavonoids. Many studies have confirmed the above components such as: genistein has excellent antioxidant capacity and the ability to inhibit the decomposition of carbohydrates.

Objectives. We investigated whether ethanol extracts of Cajanus cajan roots (EECR) could protect against methylglyoxal (MGO; 500 mg/kg bw)-induced insulin resistance (IR) in male Wistar rats between days 1 to 83.

Methods. Rats treated with MGO were used to examine the hypoglycemic effects of EECR on IR. The rats were divided into six groups and orally supplemented with MGO except for group 1 (normal controls). Group 3 was orally supplemented with Metformin (MET;10 mg/kg bw), group 4 with EECR-L (10 mg/kg bw), group 5 with HIP EECR-M (50 mg/kg bw), and group 6 with EECR-H (100 mg/kg bw). MET and EECR were provided daily between days 31 to 83 in rats. Oral glucose tolerance (OGTT) and insulin tolerance (ITT) tests in 6 groups rats were evaluated every 2 weeks.

Results. The results indicated that body weights, water and food intake for each group revealed no significant difference. In insulin tolerance tests (ITT), serum glucose levels of MGO-treated group was slightly change (approximately 100 mg/ml) (no insulin sensitivity) after intraperitoneal injection of insulin, while serum glucose level was significantly decreased (P <0.05) in EECR-treated rats, the effects were comparable MET groups (MET is a known hypoglycemic drugs). Blood sugar and glycosylated hemoglobin as well as serum insulin, glycation end products (AGEs) of MGO-treated groups were higher than that of blank groups. EECR signific...

Keywords: Hypoglycemic effects, Cajanus cajan (L.) Millsp. roots, glycation end products (AGEs)

REFERENCES