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Effect of High Protein Diets Containing Extract of *Stevia* Leaves on Obese Rats Suffering from Diabetic

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ABSTRACT

This study aimed to investigate the effect of three levels from *Stevia* leaves extract in the presence of normal and high protein diets on obese diabetic rats. Fifty four male albino rats (Sprague Dawley strain) used in this study, the rats divided into two main groups. The first main group (6 rats) fed on basal diet, as a negative control group. The second main group (48 rats) was fed eight weeks on high fat diet (HFD) to induce the obesity. The rats in the second main group (obese group) injected with alloxan (150 mg alloxan/kg body weight) to induce diabetes. The rats in the second main group divided into eight subgroups (6 rats each) as a following. Subgroup (1 and 2): were fed on high fat diet (HFD) and HFD containing 25% protein (high protein diet HPD) , as control positive groups, respectively. Subgroup (3, 4 and 5): fed on HFD containing 1%, 2% and 4% extract of *Stevia* leaves, respectively. Subgroup (6, 7 and 8): fed on HFD and HPD containing 1%, 2% and 4% extract of *Stevia* leaves, respectively. The experimental period lasted 8 weeks. Results showed that, obese diabetic rats which were fed on HFD or high fat and HPD only (control positive groups) recorded significant increase ($p \leq 0.5$) in body weight gain%, liver weight/body weight%, lipid profile except HDL-c, liver enzymes, leptin hormone and glucose, as compared to the rats in the first main group (control negative group). Feeding diabetic obese rats on HFDs or high fat high protein diets containing the three levels from extract of *Stevia* leaves decreased body weight gain%, liver weight/body weight% improved lipid profile, liver enzymes, serum cholesterol, triglycerides, leptin and glucose. On the other hand, feeding obese diabetic groups on high fat high protein diets containing the three levels of *Stevia* leaves extract showed more effective in improved all parameters, as compared to the groups which were fed on HFD

containing the same levels of *Stevia* leaves extract. The highest improvement in these parameters recorded for the group fed on high fat high protein diet containing the high level from *Stevia* leaves extract (4%). High consumption of protein in the presence of *Stevia* leaves extract is very important in weight loss and reduces the complications resulting from obesity and diabetes.
