The effect of Malaysian cocoa extract on glucose levels and lipid profiles in diabetic rats

ABSTRACT

The present study aims to investigate the effect of cocoa extract on serum glucose levels and lipid profiles in streptozotocin-diabetic rats. Cocoa extract (contained 285.6 mg total polyphenol per gram extract) was prepared from fermented and roasted (140 °C, 20 min) beans by extracting using 80% ethanol in the ratio of 1ï 10. The extract of three dosages (1, 2, and 3%) was fed to normal and diabetic rats for a period of 4 weeks. In hyperglycaemic group, cocoa extract (1 and 3%) diets were found to significantly lower ($p < 0.05$) the serum glucose levels compared to the control. Furthermore, supplementation of 1 and 3% cocoa extract had significantly reduced ($p < 0.05$) the level of total cholesterol in diabetic rats. In addition, 1, 2, and 3% cocoa extract diets had significantly lowered ($p < 0.05$) the total triglycerides. Interestingly, this study found that serum HDL-cholesterol had increased significantly ($p < 0.05$) in diabetic rats fed with 2% cocoa extract, while the LDL-cholesterol had decreased significantly ($p < 0.05$) in the 1% treated group. These results indicate that cocoa extract may possess potential hypoglycaemic and hypocholestrolemic effects on serum glucose levels and lipid profiles, respectively. The results also found that the effect of cocoa extract was dose-dependent.

Keyword: Cocoa extract; Glucose levels; Lipid profiles; Hypoglycaemic; Hypocholestrolemic