

Single and combined effects of oral administration chlorella and spirulina microalgae's on the serum concentration of lipids in diabetic rats

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Background: Microalgae's have been shown which have medicinal properties but any study has not been conducted to investigate combined effects of microalgae's. The present study was conducted to investigate singly and combined effects of chlorella and spirulina microalgae's on the serum concentration of lipids in diabetic rats. **Methods:** Diabetes was confirmed by measuring of blood glucose levels three days after the STZ injection. Animals with serum glucose level higher than 250 mg/dl were classified as diabetic. Diabetes was induced by intraperitoneal injection of Streptozotocin (55 mg/kg). Forty-eight diabetic rats, 3-month-old male rats (n=12/diet treatment) were orally treated with chlorella and spirulina microalgae's and their combinations at rates of 20 mg/kg of body weight for 4 weeks. Treatments were included: control, 20 mg.kg⁻¹ chlorella microalgae, 20 mg.kg⁻¹ spirulina microalgae, and their combination (20 mg.kg⁻¹ spirulina microalgae + 20 mg.kg⁻¹ chlorella microalgae). At the end of trial, blood samples were taken for measurement of cholesterol, triglycerides, HDL-C and LDL-C. **Results:** Our findings showed that diabetic-rats treated with combined microalgae showed lower the serum concentrations of cholesterol, triglycerides, or LDL, but the serum concentration HDL-C was not affected. **Conclusion:** The microalgae in combined form can improve lipid profile which may be related to their compounds. **Key words:** Cholesterol, Chlorella microalgae, Lipid profile, Spirulina microalgae