

## Combination of chlorella and spirulina microalgae's reduced the serum concentration of glucose and increased the serum concentration of insulin 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 glucose and insulin 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/group) 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<sup>-1</sup> chlorella microalgae, 20 mg.kg<sup>-1</sup> spirulina microalgae, and their combination (20 mg.kg<sup>-1</sup> spirulina microalgae + 20 mg.kg<sup>-1</sup> chlorella microalgae). At the end of trial, blood samples were taken for measurement of glucose and insulin.

**Results:** Our findings showed that diabetic-rats treated with combined microalgae showed lower the serum concentrations of glucose and higher the serum concentration of insulin.

**Conclusion:** The microalgae in combined form can improve the serum concentration of glucose and insulin which may be related to their compounds.

**Key words:** Glucose, Chlorella microalgae, Insulin, Spirulina microalgae