

## **Antioxidant capacity and anti-diabetic effect of *Boswellia serrata* aqueous extract in female diabetic rats and the possible histological changes in the liver and kidney.**

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**Background and Aims:** The use of *Boswellia* has been documented as a wide variety of diseases, including diabetes mellitus and inflammatory diseases. This study was focused on the antioxidant effects of *Boswellia* aqueous extract impact on reproduction in female diabetic rats and the plants effects on blood glucose and diabetes complications in the liver & kidney of female diabetic rats.

**Methods:** The antioxidant capacity of plant extract was evaluated using FRAP assay. The focus group was fertile female group so after mating condition vaginal plaque mentioned as a positive sign of the day of gestation 14<sup>th</sup> to 17<sup>th</sup> pregnancy and treatment started with extract or vehicle from by gastric gavage. Diabetic and control rats were administered 200,400,600 mg/kg *Boswellia* extract. Blood glucose was measured during 17 days.

**Results:** Administration of *Boswellia* in diabetic rats significantly decreased the level of blood glucose and HbA1c after 17th days ( $p \leq 0.01$ ). In diabetic group that received no treatment fetus spontaneous abortion was 19.14%. The percentage of absorptions was significantly elevated in vehicle-treated diabetic rats, in comparison with vehicle treated healthy rats. In the diabetic group, separated necrosis of hepatocytes, anarchism of liver plates, and lymphocytic inflammation were improved. Diabetic complications were not seen and the severity of damage was reduced. These damage including: lymphocytic inflammation in the port areas, irregularities, apoptosis of liver cells, and dilatation of the sinusoid.

**Conclusions:** The results suggest that *Boswellia* extract has antidiabetic effects and could prevent complications of diabetes in the kidneys and liver.

**Keywords:** *Boswellia serrata*; Antidiabetic; Diabetes complication; Histopathology; Female rats