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Research Details :

Research Title	: <u><i>Effect of Fenugreek Seeds on Plasma Glucose Concentration and the Regulation of Carbohydrate Metabolism in the Liver and Small Intestine of Streptozotocin induced Diabetic Rats</i></u> تأثير بذور الحلبة على تركيز الجلوكوز في البلازما وتنظيم أيض الكربوهيدرات في كبد وأمعاء الجرذان المصابة بداء السكري المستحث بالإستربتوزوتوسين
Descriptipn	: Fenugreek seeds (<i>Trigonella foenum graecum</i> L.) are traditionally assumed to have restorative and nutritive properties. The present work was designed to investigate the effects of a fenugreek seeds on plasma glucose concentration and the regulation of carbohydrate metabolism in the liver and small intestine of streptozotocin induced diabetic rats. Administration of fenugreek seeds (0.5g and 1.0g / 500 ml water) in streptozotocin induced diabetic rats led to decrease in plasma glucose concentration by 32% and 42% respectively on 30th day of the experiment. Also, the concentrations of plasma total cholesterol and triacylglycerol were significantly decreased ($P < 0.0001$). The present investigation demonstrates a significant decrease ($P < 0.0001$) in the liver and mucosa Phosphofructokinase-1 (PFK-1) activities of the diabetic rats. Fenugreek seeds treated rats showed an increase in the activities of liver and mucosa PFK-1 by 55% and 75% respectively. Upon treatment of diabetic rats with insulin, the concentration of plasma glucose, total cholesterol and triacylglycerol returned to normal. Also, the liver and mucosal PFK-1 activities increased significantly ($P < 0.0001$) and approximately returned to normal. In conclusion, the present work demonstrates that fenugreek seeds can be used orally to improve the plasma insulin concentration with concomitant decrease in the blood glucose levels in diabetic rats
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