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Hypolipedimic effect of water extract of *Trigonella foenum-graecum* seed

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Hyperlipidemia is an abnormal elevation of triglyceride and/or cholesterol concentrations in blood, which leads to many health disorders such as obesity and atherosclerosis. Although many synthetic lipase inhibitors are available for controlling hyperlipidemia, they are likely to be associated with adverse side effects. Thus the aim of this study was to evaluate the in-vitro and in-vivo hypolipidemic effects of the water extract of *Trigonellafoenum-graecum* (fenugreek) seeds.

Crude methanol extract of *T. foenum-graecum* seeds was partitioned with n-hexane and methanol, the resulting methanol extract was partitioned with ethyl acetate and distilled water. All extracts were used to determine the in-vitro lipase inhibitory activity by a lipase inhibition assay using 2, 3-dimercapto-1-propanoltributyrate as the substrate. As the water extract (WE) was found to have significant lipase inhibitory activity it was used for the in-vivo study. In- vivo lipid loading test was conducted using twenty male Sprague Dawley rats; the treatment group was orally administered with WE at the dose of 2000 mg/kg while the control group received distilled water. After 30 minutes, both groups were orally administered with coconut oil at the dose of 5 ml/kg. Rats were bled at 60, 120. 180 and 240 minutes and the gavage of coconut oil and serum triglyceride levels were analysed.

WE showed a significant ($p<0.05$) dose dependent percentage lipase inhibition in-vitro with an IC_{50} value of 2.86 mg/ml. In the in-vivo study, both treatment and control groups had similar triglyceride levels (1.18mmol/l) initially which in both groups increased until 180 minutes, and declined thereafter. However triglyceride levels of the treatment and control groups at 60 min were1.35 and 1.67mmol/l and at 180 min were 1.72 and 1.89 mmol/l respectively, displaying a lower level in the test group throughout.

The results indicated that WE exhibit inhibitory activities against pancreatic lipase in vitro and in vivo. To date lipase and dietary fat absorption activities by lipid loading test using coconut oil has not been reported for *T. foenum-graecum* seeds water extract. Results presented here conclude that WE could be accepted as a useful and safe natural hypolipidemic agent.

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