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P-69**Effects of *Trogonella foenum-graecum* essential oil applied as intraperitoneal injection on blood cells and blood biochemical parameters of white Wistar rats**

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Trogonella foenum-graecum is a leguminous plant grown normally in various semi-arid conditions of Asia and North Africa. There are several traditional purposes for this plant including medical purposes and use as a food flavor (Bin-Hafeez *et al.*, 2003). The aim of this study was to investigate the blood responses of male white Wistar rats (body weight 180 ± 5 g) given the essential oil (EO) of this plant as intraperitoneal injection. The essential oil was diluted with saline (1:10) and applied in a dosage of 100 mg EO per kg body weight once per day for 1, 3 and 7 days, respectively. In each injection protocol, 6 rats were injected with the EO and 6 rats with saline only giving a total of 36 animals. Rats were fed a standard diet (5% fat, 23.5% crude protein and approx. 60% carbohydrate) *ad libitum* and had free access to water. One day after each injection period, blood was taken from the retro-orbital plexus and sampled in heparinized tubes. Data were statistically analyzed using general linear models procedures of SAS software. The mean food intake of the experimental groups amounted to 17.1 g/d and no difference ($P > 0.05$) among the groups were found. White blood cells (WBC), red blood cells (RBC), hematocrit (HCT) and haemoglobin (HB) were significantly ($P < 0.05$) increased in groups given EO in comparison with those given saline only [WBC ($\times 10^3$ /ml) : 16.6 vs. 7.6, RBC ($\times 10^6$ /ml) : 8.22 vs. 7.57, HB (g/dl) : 15.67 vs. 14.47, HCT (%) : 46.6 vs. 44.3]. In addition, rats injected with the EO for 7 days had significantly ($P < 0.05$) higher numbers of blood cells compared with rats in 1 and 3 days injection protocols (WBC ($\times 10^3$ /ml): 15.8, 16.09 and 16.53; RBC ($\times 10^6$ /ml): 7.99, 8.2 and 8.49; HB (g/dl): 15.42, 15.6 and 16; HCT (%): 45.9, 46.8 and 47.2, respectively). The most important finding of the present study is a significant ($P < 0.05$) increase of the WBC number in EO injected rats compared with the saline injected groups (16.6×10^3 vs. 7.6×10^3 , per ml; combined data of all protocols). No significant response ($P > 0.05$) was found for other blood plasma parameters including alanine aminotransferase, aspartate aminotransferase, bilirubin, glucose, cholesterol and triglyceride. The results of this study indicate that intraperitoneal injection of *Trogonella foenum-graecum* EO could be effective in enhancing the number of blood cells.

Bin-Hafeez, B., Haque, R., Parvez, S., Pandey, S., Sayeed, I., Raisuddin, S. 2003. Immunomodulatory effects of fenugreek (*Trigonella foenum graecum* L.) extract in mice. *Int. Immunopharmacol.* 3: 257-265.

Trogonella foenum-graecum; essential oils; white Wistar rats; blood cell
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