Journal

J. Biol. Chem. Environ. Sci., 2018, Vol. 13(1): 395-416
http://biochenv.blogspot.com.eg/

HYPOLIPIDEMIC AND HEALTH-PROMOTING EFFECTS OF *ERUCA SATIVA* SEEDS IN RATS FED ON HIGH-FAT DIET

Khaled Mohamed Mohamed Wahdan*

Agricultural Biochemistry Department, Faculty of Agriculture, Zagazig University, Zagazig 44519, Egypt

ABSTRACT

Eruca sativa Miller (rocket leaves) is well known as a worldwide plant. The goal of the present study was a trial to investigate the potential hypolipidemic effect of *Eruca sativa* seeds *in vivo*. Chemical analyses were performed to determine the phytochemical profile of *Eruca sativa* seeds. Bioactive compounds were determined in *E. sativa* seeds were included cardiac glycosides, alkaloids, phenolics, ascorbic acid, flavonoids, saponins and tannins. Erucic acid (51.2%) was the major fatty acid present in the *E. sativa* seed oil. Male albino rats were divided into 3 groups (6 animals each) including, group 1 given basal diet (normal control), group 2 given hyperlipidemic diet (hyperlipidemic control), and group 3 given hyperlipidemic diet supplemented with 10% whole *E. sativa* seeds powder. Daily administration of *E. sativa* seeds in *in vivo* model of animals fed on high-fat diet for 8 weeks showed significant reduction in glycaemia. Administration of 10% *E. sativa* seeds powder significantly decreased total lipids (TL), total cholesterol (TC), total triacylglycerols (TG), LDL-C, and VLDL-C values, while HDL-C value was increased in group 3 that treated with 10% *E. sativa* seeds powder. The results demonstrated a protective impact of *E. sativa* seeds as a hypoglycemic agent *in vivo*. The accomplished results give preliminary results on the use of *Eruca sativa* seeds as a functional food, nutraceutical, useful to control and/or inhibit a hyperlipidemic status.

Key words: Albino rats; *Eruca sativa;* health-promoting; Hypolipidemic.