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The Effects of Water Extract and Powdered of *Hibiscus Sabdariffa* L on Obese Rats Suffering from Chronic Damage in The Liver

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ABSTRACT

The aim of this study was to investigate the effect of water extract and powdered of *Hibiscus Sabdariffa* L. (*Hs*) on obese rats suffering from chronic damage in the liver. Forty eight male albino rats (Sprague Dawley Strain) used in this study, the rats divided into two main groups. The first main group (6 rats) fed on basal diet (as a control negative group). The second main group (42 rats) was fed four weeks on high fat diet HFD to induce obesity in rats. After this period, the rats in the second main group treated with CCL4 in paraffin oil (50% v/v 2ml/kg) twice a week subcutaneous injection (for two weeks) to induce chronic damage in the liver. Then the second main group was divided into seven subgroups. *Subgroup (1)*: fed on HFD as a control positive group, *Subgroup (2, 3 and 4)*: were fed on HFDs and treated daily with *Hs* water extracts prepared from (10 g, 20g and 30g dried *Hs* placed in 990ml, 980ml and 970 ml distilled water), respectively. *Subgroup (5, 6 and 7)*: were fed on HFDs containing (25g, 50g and 75g dried *Hs* /kg diet), respectively. This experiment lasted six weeks. Results showed that, feeding rats on HFD and injected with CCL4 induced significant increase $p < 0.5$ body weight gain%, organs weight/body weight%, lipid profile except HDL-c, kidney functions, liver enzymes, glucose thyroid and leptin hormones, as compared to the rats in the first main group (control negative group). Treating obese rats which suffer from chronic damage in the liver with the three levels from (water extract or the powdered of *Hs*) decreased body weight gain%, liver and kidney weights/body weight% and improved the serum parameters which determined in this study, especially when used the high level from powdered of *Hs* in the diet (75 g/kg HFD), followed by the high level of water extract of *Hs* (30 g *Hs*

soaked in 970ml distilled water). *Hibiscus Sabdariffa* L. considered one of the most important herbs for weight loss and liver diseases.

Key words: liver damage - *Hibiscus Sabdariffa* L. - liver enzymes - lipid profile - kidney function – glucose - thyroid - lepin hormones.