



Histomorphometric Evidence of Hepatoprotective Impact of Aqueous *Sesamum Radiatum* (Schum & Thonn.) Leaves on Carbon Tetrachloride Induced Hepatotoxicity in Adult Sprague Dawley Rats

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ABSTRACT

Objective: Lipid peroxidation and generation of reactive oxygen species in a living organism is associated with tissue/cell injury especially of the liver cells which appear to be the main sites for most bio-degradation processes in the body. Increasing concern about oxidative tissue damage has brought about the need to create a dietary adjunct with a novel natural antioxidant and additional therapeutic effects on the liver. In this study, we evaluated the hepatoprotective effect of sesame leaves phytoestrogenic-lignans against hepatotoxicity induced by

carbon tetrachloride in rats using histopathological evidence. The studies also sort to confirm folkloric claims regarding the effects of consuming sesame leaves.

Methodology and results: Thirty adult male SD rats were divided into three groups of 10 animals each. The control group received equal volume of normal saline. The treated groups received 28.0mg/kg bw/day and 14.0 mg /kg bw /day of aqueous sesame leaves extract via gastric gavage for six weeks after exposure to carbon tetrachloride. H & E stained of processed paraffin embedded liver tissues was carried out. Statistical analysis of data was done using SPSS software and $P < 0.05$ considered statistically significant.

The result showed evidence of significant ($P < 0.05$) body weight gain in all the treated animals. However, we observed that there was percentage relative body weight loss of 78% and 57% in the high and low dose groups respectively when compared to the weights of the control animals. There was a significant ($P < 0.05$) increase in raw liver weights and decrease ($P < 0.05$) in the relative liver weight per 100g bwt weight in the treated groups compared to the control. However, the weight loss was more in the high dose than the low dose group in a dose dependent manner when compared to the control.

Conclusion and application of findings: Animals treated with sesame extracts and exposed to carbon tetrachloride induced hepatotoxicity have similar morphology to animals in the control healthy group. These findings demonstrate that Sesame leaves extract is safe for consumption as a natural antioxidant.

Key words: *S. radiatum*, antioxidant, carbon tetrachloride, rats.