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**Title:** Amelioration of hypercholesterolemia-induced hepatic changes with red grape juice: A histopathological study

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**Abstract:** Objectives: Hypercholesterolemia was confirmed as a risk factor for hepatic fibrosis, as well atherosclerosis and coronary heart disease. This biochemical and histoplathological study was conducted to investigate the possible protective effect of red grape against hepatic injury induced by a high-cholesterol diet (HCD).
Material and methods: Thirty male Wister rats were randomly divided into three groups (n=10): the control received saline, the induction group was fed HCD, and the treated group was fed a HCD and 0.4 ml of 100% red grape juice (RGJ) for 13 weeks. After the animals were sacrificed, liver tissue samples were taken to be processed for light and electron microscopy examination.
Results: The administration of the RGJ and HCD significantly decreased the animals' blood glucose, insulin, cholesterol, triglycerides, Low Density Lipoprotein levels and increased their High Density Lipoprotein level compared to the rats fed the HCD alone. It also decreased the periportal (macro-and microvesicular) steatosis, fibrosis, lymphocytic infiltration and blood sinusoidal congestion that were observed in HCD-fed rats alone. The RGJ reduced the number of activated myofibrobasts. This was confirmed by a reduction in the expression of alpha smooth muscle actin and desmin. The RGJ increased, although not significantly, the expression of endothelial Nitric Oxide Synthetase.
Conclusion: The administration of RGJ succeeded in alleviating the biochemical and, to some extent, the histopathological changes induced by the high cholesterol diet. Consumption of fresh RGJ or its pharmaceutical preparations is advised especially for those who are used to eat a high fat diet.

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