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Medicinal and functional values of natural antioxidants

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Statement of the Problem: Antioxidant compounds play an important role in our body due to favorable effects on human health. Consumption of food containing phytochemical with potential antioxidant properties can reduce the risk of human disease. Vegetable oils contain natural antioxidants. Chain breaking antioxidants are highly reactive with free radicals and form stable compounds that do not contribute to the oxidation chain reaction. The purpose of this study is to evaluate the Medicinal and functional values of natural antioxidants in some vegetable oils.

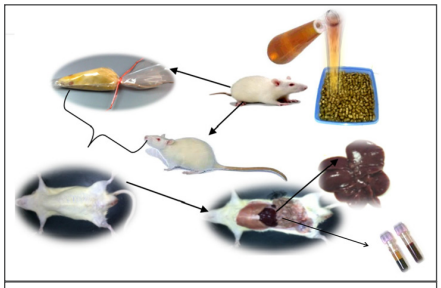

Figure 1: Procedure for collecting blood and liver from norml smd stressed rats

Methodology & Theoretical Orientation: 168 Sprague Dawley male rats were divided into three groups. The first group contains 72 rats were divided into 12 groups of 6 rats per group. The rats were fed ad libitum with commercial rat's pellet containing different concentrations of Red Palm Olein (RPO) for 2, 4 and 8 weeks. The second group contains 60 Sprague Dawley male rats which were randomly divided into 10 groups of 6 rats per group and were treated with 15% of RPO, Palm Olein (PO), Corn Oil (CO), Coconut Oil (COC) and control groups for 4 and 8 weeks. The third group contains 36 Sprague Dawley male rats which were randomly divided into six groups of 6 rats per group (3 normal groups and 3 stressed groups) and were treated with 15% of RPO and PO for 4 weeks.

Findings: The HDL-C increased in RPO and PO of normal group, but it was within normal range under stress condition. These results could be due to the high content of vitamin E (tocopherols and tocotrienols) and β-carotene in red palm olein. Treatment with 15% RPO and PO diets did not affect the CAT level after 4 weeks of treatment under normal condition while there was decreased in CAT level with RPO and increased with PO under stress conditions. Additionally, the results in RPO group showed that higher SOD activity compared to PO and control groups under normal conditions while there was no significant difference ($p \leq 0.05$) in SOD between the control group and treated groups under stress conditions.

Conclusion & Significance: Red palm olein contains high amount of antioxidant (vitamin E and β-carotene) give satisfactory results in lipid profile and antioxidant enzymes in normal and stressed conditions. Recommendations are suggested to carry out the experiments on the stress rats using other vegetable oils and to do the experiments for longer period of treatment with the same vegetable oils to confirm the results of this work.

Biography

Eqbal M A Dauqan has received her PhD in Biochemistry from the School of Bioscience and Biotechnology, Faculty of Science and Technology (FST), Universiti Kebangsaan Malaysia (UKM), Malaysia, sponsored by the Organization for Women in Science for the Developing World (OWSD), Italy. Her main research interest is biochemistry, food antioxidants and nutrition. She was selected as one of five winners of the 2014 Elsevier Foundation Award for Early Career Women Scientists in the developing countries (Chemical Sciences). In 2014 she established a new program entitled Therapeutic Nutrition Department in AlSaeed University, Taiz, Yemen. On 18-3-2015 she organized the 1st Healthy Nutrition Exhibition in Yemen and her students made and presented Healthy products. In March 2018, she was appointed as an associate professor at University of Agder (UIA), Kristiansand-Norway through the Scholar at Risk (SAR) Network, USA.

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