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## Comparative effect of vitamins A (retinol) and E (α-tocopherol) on gasoline vapor induced atherosclerotic risk in rats

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Exposure to gasoline vapors (GV) have been reported to be a potential atherosclerotic risk factor in rats. In this study, a comparative effect of vitamins A (retinol) and E (α-tocopherol) on GV-induced atherosclerotic risk was investigated in male rats. Twenty-four (24) male rats, 210±20 g, used in the study were distributed into four groups (A-D), with six rats each. The rats in group served as the control, while rats in groups B, C and D were exposed to GV (17.8±2.6 $cm^3/h/m^3$/day), 6 hours/day, 5 days/week, for 30 days by whole body and nose–inhalation in an exposure chamber. Retinol (400 IU/kg/day) and α-tocopherol (200 IU/kg/day) were respectively concomitantly administered orally to the test rats in groups C and D, one hour after each day's exposure. The results of this study showed that exposure to GV caused a significant ($p<0.05$) increase in total serum cholesterol (Chol), triacylglycerol (TG), LDL-Chol, VLDL-Chol, TG/HDL-Chol and atherogenic index of plasma (AIP), and a significant decrease in serum HDL-Chol in rat's model. However, the elevated Chol, TG, LDL-Chol, VLDL-Chol, TG/HDL-Chol and AIP levels induced by exposure to GV were significantly ($p<0.05$) reduced by the administration of retinol and α-tocopherol; while the decrease in serum HDL-Chol recorded for rats exposed to GV was significantly ($p<0.05$) reversed following the same treatment with retinol and α-tocopherol. The observations made from the results of this study supported the hypothesis that exposure to gasoline vapor is a risk factor for atherosclerosis. It also gives a strong indication that retinol and α-tocopherol may be used to reverse the atherosclerotic risks associated with exposure to GV in rats, and α-tocopherol tends to have a more potent effect than retinol.

### Biography

Friday E Uboh has completed his PhD from University of Calabar, Calabar, Nigeria, and is presently a Professor of Biochemistry, with Toxicology as his area of research interest. He served as the acting Head of Biochemistry Department in the Department of Biochemistry University of Calabar, Calabar, Nigeria, from 2011 to 2013. He is a Member of Nigerian Society of Biochemistry and Molecular Biology (NSBMB), Institute of Public Analysts of Nigeria (IPAN), National Vice President of the Society of Experimental Biology of Nigeria (NISEN), American College of Toxicology (ACT), and European Societies of Toxicology (EUROTOX). He has more than 70 papers published in reputable journals, and is a reviewer and Editorial Board Member of many journals of repute. He has also presented many conference papers, locally and internationally.

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