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In vitro antioxidant activity and hypolipidemic effects of an ethanol extract of *Amaranthus viridis* leaves on hyperlipidemic Wistar Albino rats

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Amaranthus viridis Linn. (AV), commonly known as 'Slender or Green Amaranth' in English, is a multinational genus of herbs. Several species of are often considered as weeds, as leafy vegetables, cereals and ornamentals. Traditionally, an infusion of the plant (leaves and roots) is used to treat dysentery and epilepsy in children, purify blood, reduce inflammation, hemorrhoids, reduce labor pain and improve appetite in parts of Africa and India. The present study was designed to evaluate the *In vitro* antioxidant activity and hypolipidemic effect of an ethanol extract of AV leaves (EEAVL) in Wistar albino rats and mice as experimental models. Acute toxicity (LD50) of EEAVL was studied in mice using standard method. The result showed a LD50 of 353.6 mg/kg of the extract. Fourteen (14) Wistar albino rats of both sexes were divided randomly into seven (7) groups of two animals, each subjected to different treatment for 14 days. Group A was the non-high fat diet control; Group B was the high fat diet-induced control; Group C received 20 mg/kg of Simvastatin, a standard lipid lowering drug; Group D to G received 250 mg/kg, 125 mg/kg, 62.25 mg/kg and 31.13 mg/kg BW respectively of EEAVL of which all were still maintained on their induced diet. At the end of the treatment, the lipid profile and body weight were estimated and compared with the Simvastatin treated control group. The result showed a significant ($p<0.05$) decrease in T-Cholesterol, Triglyceride and LDL-C ($p>0.05$) while HDL-C was increased at the doses studied. EEAVL also caused a decrease in the rate of weight gain. In the *in-vitro* antioxidant test, there was a concentration dependent increase in the (%) scavenging activity when compared with the Vitamin C (control) for 1, 1-diphenyl-2-picrylhydrazyl (DPPH), Nitric oxide and anti-lipid peroxidation activity of AVL. The results showed no significant difference at higher concentrations when compared to the control. On a comparative basis, the measure of the antioxidant effectiveness of the extract showed better activity in quenching Nitric oxide radical with IC50 values of 72 mg/ml compared to Lipid peroxidation radicals (78mg/ml) and DPPH radicals (108 mg/ml). The result have shown that Amaranthus viridis L, a traditional folklore medicinal plant has *in vitro* antioxidant potentials and hypolipidemic effect which may provide therapeutic potentials in the management of Cardiovascular diseases, diabetes and their complications which might be caused by free radical generation and hyperlipidemia.

Biography

Omodamiro O D holds a PhD in Pharmacology from College of Medicine and Health sciences, Abia State University Uturu Abia State Nigeria. He is currently a senior Lecturer in the Pharmacology Unit of Department of Biochemistry, Micheal Okpara University of Agriculture Umudike Abia State Nigeria. He has published over 30 research papers in international reputable journals. His areas of research are cardiovascular/endocrine pharmacology, ethnopharmacology, renal pharmacology and medicinal plants.

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