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Antioxidant and anti-inflammation potentials of Moringa oleifera leaf extract in hepatic tissue and erythrocytes of diabetic Wistar rats

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iabetes has been become a global public health challenge. This research work assessed antioxidant and anti-inflammatory properties of methanolic leaf extract of Moringa oleifera (MO) (250 mg/kg) in streptozotocin-induced diabetic male Wistar rats (48 rats). Rats were randomly divided into four groups: Non-diabetic control group (Control), non-diabetic Moringa treated group (Moringa), diabetic control group (Diabetic) and diabetic Moringa treated group (Diabetic + Moringa). Plasma antioxidant capacity was evaluated in the plasma of non-diabetic and diabetic rats. Inflammatory markers were assessed in the serum while endogenous antioxidant enzymes (SOD, CAT, GSH, GPX) were evaluated in the liver and erythrocytes. Histological sections of the pancreas were assessed. Treatment with Moringa oleifera in normal and diabetic rats daily for 6 weeks, showed significant improvement in antioxidant enzyme activities, improved antioxidant capacity and a reduction in inflammatory cytokines and chemokine. Pancreatic histological sections revealed the protective effect of MO in non-diabetic and diabetic rats. Moringa oleifera exerted modulatory effect in STZ-induced diabetes by its antioxidant and anti-inflammatory activities.

Biography

O O Oguntibeju is a Professor of Biomedical Sciences and Group Leader (Nutrition and Chronic Diseases Research Unit) at the Oxidative Stress Research Centre, Department of Biomedical Sciences, Faculty of Health & Wellness Sciences, Cape Peninsula University of Technology, and Bellville Campus, South Africa. He has successfully supervised 22 masters and 4 doctoral students and currently supervising 10 doctoral and 9 masters' students at various stages of their programmes. He has published over 130 scientific papers in peer-reviewed journals, 20 chapters in books, editor of three books on diabetes, presented 50 papers at international and national conferences. He is a Member of Editorial Board of various scientific journals and reviews manuscripts for over 30 international scientific journals. He has received various awards such as the Gold and Platinum Research Excellence Awards at his current university. In 2015, he received "Award for Excellence" in recognition of his contribution to biomedical research. He is a National Research Foundation- South Africa (NRF) C-rated researcher and holds a master degree in Biochemistry from the University of Ibadan, Nigeria and a doctoral degree in Biomedical Science at the Central University of Technology, Bloemfontein, South Africa. He completed his Postdoctoral Research Fellowship at the Cape Peninsula University of Technology, South Africa. He is a Chartered Scientist (CSci, UK) and Fellow of the Institute of Biomedical Science (FIBMS), London. He is also a Fellow of the Australasian College of Biomedical Scientists (FACBS) and registered with the South African Council for Scientific Professions as a Professional Natural Scientist.

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