

Rambo mosquito-coil smoke induced liver toxicity and the protective effects of *G. latifolium* leaf extract

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In this study, the protective effects of *G. latifolium* aqueous leaf extract against Rambo-coil induced liver toxicity in albino rats were investigated. The *G. latifolium* leaf extract was analyzed for phytochemical and proximate compositions using standard methods. A total of 36 albino rats, weighing between 200–250 g, were used for the experiments. They were acclimatized for a period of two weeks under standard laboratory condition (12 hrs light and 12 hrs darkness, temperature at 23 ± 1 °C). All the rats were allowed free access to water and dry ration. The results of the phytochemical analysis showed that *G. latifolium* leaf contained mainly alkaloids, flavonoids, tannins, and saponins, while the proximate compositions were vitamin C, carbohydrate, protein, fibres, moisture and ash. Exposure to Rambo insecticide smoke caused significant ($P < 0.05$) elevation of AST, ALT, ALP, creatinine and bilirubin levels and reduction of Hb, % PCV, serum albumin, and total protein. However, co-treatment with *G. latifolium* leaf extract caused a significant ($p < 0.05$) reversal of the trend. AST, ALT, ALP, creatinine and bilirubin levels, though still higher than the control levels, the differences were not significant; similarly, Hb, % PCV, serum albumin, and total protein were not significantly ($p < 0.05$) lower than the control levels. In the control animal, the liver hepatocytes, the cynusoids and hepatic vessels were preserved but exposure to Rambo smoke caused impairment of the hepatic architecture resulting in hepatic necrosis, and haemorrhages. However, these effects were significantly ($p < 0.05$) reduced in rats co-treated with aqueous extracts of *G. latifolium*, showing that *G. latifolium* contain phytochemicals that can protect against Rambo insecticide-smoke-induced liver toxicity.

Biography

Ibiam U. A. was born in Ekoli Edda, Afikpo South of Ebonyi State, Nigeria. He obtained his B.Sc. and M.Sc. degrees from the Department of Biochemistry, University of Port Harcourt, Rivers State, Nigeria in 1997 and 2001, respectively. He completed his Ph.D. degree in Environmental Toxicology in 2004 from the School of Environmental Sciences, University of East Anglia, Norwich, England. He won the DBT TWAS Postdoctoral Fellowship award by the Academy of Science for the Developing World, TWAS, Italy, 2006/2007 and hence, was a postdoctoral research fellow at the School of Neurosciences, Jiwaji University, Gwalior, India, from 2007-2008, majoring in Neurotoxicology. He is a senior Lecturer in the Department of Biochemistry of Ebonyi State University, and was a Head of Department of Biochemistry for many years. Currently, he is the Ag. Dean of Faculty of Biological Sciences of Ebonyi State University. He has many international and national journal articles and books to his credit. He is a member of many professional academic organizations including Nigerian Society of Biochemistry & Molecular Biology, Cassava Cyanide Disease Network (CCDN), Australia, Society of Neuroscientist of Africa (SONA), Cape Town, S. Africa, to mention but a few.

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