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GC-MS Analysis of leaf powder of *Psychotria microphylla* and its acute toxicity on *Clarias gariepinus* juveniles

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Psychotria microphylla (Oye leaf, Igbo) is one of the common herbs used to harvest fish from rivers and streams by many villages in South-East Nigeria and not much, if any, has been reported on the toxicity of this plant. The acute toxicity studies of the leaf powder of *Psychotria microphylla* on *Clarias gariepinus* was carried out in a semi-static bioassay to determine the median lethal concentrations (LC50) at 96 h of exposure. Six graded concentrations of 0, 2.50, 3.125, 4.375, 6.25, and 12.50 mg/l of the leaf powder were applied to *C. gariepinus* juveniles (mean weight: 180 g and length 25 cm) in plastic containers. The 24, 48, 72 and 96 h LC50 values (with 95% confidence limits) estimated by probit analysis were 6.06 (5.369-7.269), 4.995 (4.238-6.118), 3.827 (3.083-4.639) and 3.259 (2.481-3.915) mg/l, respectively. Toxicity characteristics during exposure included discolouration, gulping for air, erratic swimming, loss of reflexes, slow opercular movement and ultimately settling at the bottom motionless just before death. GC-MS analysis of crude hexane extract of the leaf revealed 12 compounds including the following: E-9-Octadecanoic acid; Z,Z-3,15-Octadecadien-1-ol acetate; Cyclohexanol, 2-methyl-5-(1-methylethenyl)-, acetate; and n-Hexadecanoic acid, while the methanol extract (GC-MS analysis) revealed the following major compounds Trans-octadec-9-enoic acid; Octadecanoic (Stearic acid); n-Hexadecanoic acid; Octamethyl-octadecahydro-2H-picen-3-one; and Glycerol,13-dipalmitate. Of particular interest is octadecanoic acid which has been reported to induce lung damage.

Biography

Ibiam U A obtained his BSc and MSc degrees from the Department of Biochemistry, University of Port Harcourt, Rivers State, Nigeria in 1997 and 2001, respectively. He completed his PhD degree in Environmental Toxicology in 2004 at the School of Environmental Sciences, University of East Anglia, Norwich, England. He was a DBT_TWAS-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, a Senate Member, a Head of Department of Biochemistry between 2005-2007, and 2008-2011, and currently the Dean of Faculty of Biological Sciences of Ebonyi State University. In addition, he has held various responsible positions in the university and has been a member of many committees over the years. 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, to mention but a few.

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