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In vitro inhibitory and antioxidative effects of ethanolic extract of *Phyllanthus amarus* on activities of some key enzymes in rat tissues

Alli Smith YR and **Fayinminu AE**
Ekiti State University, Nigeria

Phyllanthus amarus is a medicinal plant with immense benefits used in traditional medicine. This research work was carried out to evaluate its medicinal benefits as well as its toxicological effects *in vitro*. The ethanolic extract of *Phyllanthus amarus* was subjected to free radical scavenging assays. The extract was able to scavenge 2-diphenyl-1-picrylhydrazyl (DPPH) and 2,2'-azino-bis-3-ethylbenzthiazoline-6-sulphonic acid (ABTS) radicals at low concentrations. Specific inhibitors of purinergic enzymes, such as Nucleoside triphosphate diphosphohydrolase (NTPDases) and 5'-nucleotidase have been projected to be valuable tools in clinical therapeutics such as in the treatment of chronic pain, immune system diseases, and cancer, as they would prolong the physiological effects of extracellular nucleotides or simultaneously administered nucleotide analogs. Ethanolic extract of *Phyllanthus amarus* showed significant inhibition of these enzymes at higher concentration (5.0mg/mL). However, at this concentration, Na^+/K^+ ATPase and δ-aminolevulinic acid dehydratase (Δ-ALA-D) were also inhibited. These enzymes are important for normal body physiological functions. Hence, there is a need for caution in the use of the plant as it could be toxic at this concentration.

yemisi.allismith@eksu.edu.ng

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