Phytochemical Screening, Anticancer, Antibacterial and Antioxidant Activities of the Leaf Extracts of Mabolo (Diospyros philippinensis A. DC.)

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Abstract : Drug resistance by cells has been the problem in the medical field for decades now. The use of medicinal plants as a source of creating powerful drugs has been nowadays recognized worldwide to treat such resistant diseases. In the present study, the potential for Diospyros philippinensis A. DC. to inhibit growth of both bacteria and cancer cell line was conducted. The leaf crude extracts were screened for the presence of phytochemicals and examined for potential bioactivities by employing several assays like Kirby-Bauer disc diffusion method, DPPH (2,2-diphenyl-1-picryl-hydrazyl-hydrate) assay and MTT (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide) tetrazolium assay for the antibacterial, antioxidant and cytotoxic activities of the extract, respectively. Phytochemical test results of the extracts revealed the presence of alkaloids, flavonoids, saponins, phenols, quinones, cardiac glycosides, phlobatannins, carbohydrate, cardenolides and proteins. The leaf extracts were found to exhibit antibacterial activity against gram-positive bacteria, high antioxidant activity (99.22% ± 0.005) but did not show any sign of cytotoxicity towards HCT116 (ATCC CCL-247). The study therefore concludes that D. philippinensis A. DC. leaf extract can be a source of antibacterial and chemopreventive agents. This claim may be used as basis for future investigation.