

Screening Togolese medicinal plants for few pharmacological properties

Simplice D. Karou, Tchadjobo Tchacondo, Micheline Agassounon Djikpo Tchibozo, Kokou Anani, Lassina Ouattara, Jacques Simpore, Comlan de Souza
Centre de Recherche et de Formation sur les Plantes Medicinales (CERFOPLAM), Universite de Lome, BP 1515, Lome, Togo

ABSTRACT

Background *Terminalia macroptera* Guill. et Perr. (Combretaceae), *Sida alba* L. (Malvaceae), *Prosopis africana* Guill et Perr. Taub. (Mimosaceae), *Bridelia ferruginea* Benth. (Euphorbiaceae), and *Vetiveria nigriflora* Stapf. (Asteraceae) are traditionally used in Togolese folk medicine to treat several diseases including microbial infections. **Objective** This study aimed to investigate the antimicrobial, antioxidant, and hemolytic properties of the crude extracts of the above-mentioned plants. **Materials and Methods** The antimicrobial and the antioxidant activities were assayed using the NCCLS microdilution method and the DPPH free radical scavenging, respectively. Human A+ red blood cells were used to perform the hemolytic assay. Phenolics were further quantified in the extracts using spectrophotometric methods. **Results** Minimal inhibitory concentrations in the range of 230-1800 g/ml were recorded in the NCCLS broth microdilution for both bacterial and fungal strains with methanol extracts. The DPPH radical scavenging assay yielded interesting antioxidant activities of the extracts of *P. africana* and *T. macroptera* (IC₅₀ values of 0.003 +/- 0.00 g/ml and 0.05 +/- 0.03 g/ml, respectively). These activities were positively correlated with the total phenolic contents and negatively correlated with the proanthocyanidin content of the extracts. The hemolytic assay revealed that great hemolysis occurred with the methanol extracts of *T. macroptera*, *S. longepedunculata*, and *B. ferruginea*. **Conclusion** These results support in part the use of the selected plants in the treatment of microbial infections. In addition, the plant showed an interesting antioxidant activity that could be useful in the management of oxidative stress.

KEYWORDS

Antimicrobial . antioxidant . hemolytic . phenolics

REFERENCES