Antimicrobial and Antioxidant Potential of *Sideroxylon obtusifolium*


Departamento de Bioquímica, Centro de Ciências Biológicas, Universidade Federal de Pernambuco, Recife, PE, Brasil.

**Introduction:** *Sideroxylon obtusifolium*, popularly known as Quixabeira is used to combat colic, kidney failure and diabetes. However, some therapeutic properties have not been elucidated, including antimicrobial and antioxidant activities. This study aims to analyze the antimicrobial and antioxidant activities, as well as elucidate the flavonoid and polyphenol contents in methanol and hydroalcoholic of *S. obtusifolium* leaf extracts. **Material and Methods:** Methanolic extracts (MESo) and hydroalcoholic (HESo) were prepared adding crushed leaf particular solvent to obtain the extract at 10%. The polyphenols were determined by the Folin-Ciocalteu assay. The flavonoid content was determined by the method using aluminum chloride, quercetin as reference compound. The antimicrobial testing was performed by analysis of Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC). The antioxidant assays were performed according to the kidnapping DPPH, hydrogen peroxide test and phosphomolybdenum. **Results and Discussion:** To polyphenols, MESo and HESo showed 21.7 and 12.4 mg gallic acid equivalent (GAE)/g, respectively. In flavonoids values were, MESo 4.9 and HESo 2.9 mg/mg plant extract in quercetin equivalent (QE). In the antimicrobial assay, MIC values were: 1.56 (HESo) and 0.39 (MESo) mg/ml to *M. luteus* and 12.5 (HESo) and 6.25 (MESo) mg/ml against *K. pneumoniae*; 6.25 mg/ml to *B. subtilis*, *E. coli*, *C. albicans* and *A. niger* and 12.5 mg/ml against *E. faecalis* and *S. aureus*, for both extracts. The extracts showed no MBC values. The antioxidant activity by the DPPH method was 11 µg/ml for MESo and 57.2 µg/ml for HESo. HESo showed 77% and MESo, 100% of total antioxidant capacity by phosphomolybdenum assay. The IC\textsubscript{50} for hydrogen peroxide were 5 and 4.2 µg/ml for MESo and HESo, respectively. **Conclusions:** The extracts were effective against the microorganisms analyzed with bacteriostatic activity and showed high capacity in scavenging free radicals through the DPPH method, phosphomolybdenum test and hydrogen peroxide.

**Keywords:** Antioxidant activity, antimicrobial, polyphenols.

** Acknowledgements:** CAPES, FACEPE, CNPq e à rede NANOBIOTECT - Brasil