

TITLE: ANTIBACTERIAL ACTIVITY EVALUATION OF RAW EXTRACTS AND FRACTIONS OF PLANTS *Malvastrum coromandelianum* AND *Alternanthera tenella*.

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ABSTRACT

The discovery and utilization of antibiotics in the treatment was a major breakthrough, dramatically reducing the morbidity and mortality, both in human and animals against infections diseases. However, shortly thereafter in such event, the world began to come across the problem of bacterial resistance, which represents one of the biggest challenges in medicine. Nowadays, cases of resistance have been identified in virtually every species of bacteria, on the other hand, the introduction of new compounds with antibacterial activity in the market is immensely small. In this context, the present study tested the antibacterial activity of *Malvastrum coromandelianum* and *Alternanthera tenella* plants in different extracts and fractions front *Escherichia coli*, *Staphylococcus aureus* and *Pseudomonas aeruginosa*. The bacteria inoculum used were adjusted to 0.5 of McFarland scale and subjected to disk diffusion and Pour-plate tests with both plants and all the different extracts and fractions obtained through the polarity of the solvents (methanol, chloroform and ethyl acetate). The tests performed by the disc diffusion method on agar did not present inhibition halo formation. However, when using the Pour-plate method, the *M. coromandelianum* plant in its crude extract of ethyl acetate formed a 15.66 mm inhibition halo against *S. aureus*. The *A. tenella* plant, using the crude methanolic extract, presented inhibition halo formation of 13.33 mm against *P. aeruginosa* and 16.33 mm for *S. aureus*. Using the crude extract of ethyl acetate, it presented halo formation of 0.9 mm against *P. aeruginosa*. The Hydromethanolica fraction showed a halo of 15 mm for *S. aureus* and the chloroform fraction had a halo of 12.33 tested against *E. coli*. Both plants showed promising antibacterial activity, but *A. tenella* stands out because it has been able to inhibit all bacteria in different crude extracts and fractions. The results obtained become important in view of the current reality, since in the future they may become an option for therapeutics.

Keywords: Antibiotics. Bacterial resistance. New drugs. *Malvastrum coromandelianum*. *Alternanthera tenella*.