

Título: ANTIMICROBIAL ACTIVITY OF CITRONELLA (*Cymbopogon nardus*) ETHANOLIC EXTRACT AGAINST BACTERIA OF MEDICAL INTEREST

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Resumo:

The clinical importance of bacterial infections has stimulated the development of research in order to identify and control its occurrence. Among the species, the main causes of human diseases are *Enterococcus faecalis* that is 85% to 90% of enterococcal isolates in clinical, *Staphylococcus aureus* causing fatal systemic infections in immunocompromised and *Pseudomonas aeruginosa* that is a common opportunistic pathogen in hospital infections. The plants potential as source of new drugs still offers great field for scientific research because of the approximately 250,000 to 500,000 known species, a small percentage has been investigated with phytochemical studies and only a fraction of these has been evaluated for pharmacological potential. Previous studies with citronella (*Cymbopogon nardus*) had showed that this plant has insecticidal, antimicrobial, acaricide and antilisterial activities. Thus, the present study proposed to evaluate the antibacterial activity *in vitro* of citronella ethanolic extract against bacteria of medical interest. Initially, five strains from Culture Collection of the Department of Antibiotics UFPE were chosen, belonging to species: UFPEDA02 *Staphylococcus aureus*, UFPEDA138 *Enterococcus faecalis*, UFPEDA416 *Pseudomonas aeruginosa*, UFPEDA224 *Escherichia coli* and UFPEDA71 *Mycobacterium smegmatis*. The antibacterial activity was verified *in vitro* by paper disc diffusion method. The test was standardized by turbidity equivalent to 0.5 of McFarland's Scale in physiological solution, corresponding to a concentration of approximately 10⁸ CFU/mL. On inoculated Mueller Hinton Agar, sterile paper discs (6 mm) were placed and soaked with 10 µL of extract. After disks placement, plates were incubated for 24h and 48h at 28°C and 37°C. At the same time the positive control was carried out with discs containing the standard antibacterial agent chosen, Norfloxacin and the negative control was carried out with discs containing Dimethylsulfoxide (DMSO) at 95%. Equal halos or greater than 8mm were considered significant antibacterial activity. It was observed that the citronella ethanolic extract had significant antimicrobial activity on the strains *S. aureus*, *E. faecalis*, *E. coli* and *M. smegmatis* at 28° and 37°. Citronella ethanolic extract showed antimicrobial effect, suggesting that these plant can be useful for the development of new antibacterial agents.

Palavras-chave: antibacterial, pathogenic bacteria, plant extract

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