



ANALYSIS OF THE ANTIMICROBIAL POTENTIAL OF HEXANE AND METHANOLIC EXTRACTS FROM THE ROOT OF *ANNONA VEPRETORUM*

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Keywords: Annonaceae, Medicinal Plants.

ABSTRACT

INTRODUCTION: *Annona vepretorum* Mart. is an endemic species of the Brazilian Caatinga biome and belongs to the Annonaceae family, widely distributed in tropical areas around the world. The compounds present in different parts of this plant have various applications: the roots are used to treat bee stings and inflammations, while the leaves have medicinal properties effective against allergies, as well as fungal and bacterial infections. It is worth noting that there are no studies on the antimicrobial activity of the methanolic and hexane extracts of the root, a part of the plant with popular use. **OBJECTIVES:** To evaluate the antimicrobial potential of the hexane and methanolic extracts from the root of *A. vepretorum*. **METHODS:** Antimicrobial activity was assessed using the solid medium diffusion technique with 6 mm filter paper discs impregnated with 10 μ L of the extract solution at a concentration of 100 μ g/ μ L. Ethyl alcohol PA was used to dilute the hexane extract and ethyl alcohol PA and saline solution were used for the methanolic extract. The following microorganisms isolated from clinical samples and cultured on Mueller-Hinton agar, were tested: *Enterococcus faecalis* (ATCC 19433), *Escherichia coli* (ATCC 25922), *Klebsiella pneumoniae* (ATCC 13880), *Staphylococcus aureus* (ATCC 25923), *Candida albicans* (ATCC 90028), and *Candida tropicalis* (ATCC 13803). Ethyl alcohol PA was used as the negative control, while Ampicillin (10 μ g/disc) served as the positive control for *Staphylococcus aureus* and Chloramphenicol (30 μ g/disc) for the other bacteria. Fluconazole (25 mcg/disc) was used as the positive control for the fungi. After the incubation period, inhibition zones were measured. Zones smaller than 9 mm indicated inactivity, 9–12 mm were partially active, 13–18 mm were active, and those greater than 18 mm were considered highly active. The experiment was conducted in triplicate. **RESULTS/DISCUSSION:** It was observed in this study that the hexanic extract solution obtained from the root of *A. vepretorum* exhibited partial antimicrobial activity against *C. tropicalis*, with an inhibition zone of 11 mm, and inactivity against *E. faecalis* (8 mm), *E. coli* (7 mm), *C. albicans* (8 mm), *K. pneumoniae* (6 mm), and *S. aureus* (7 mm). The methanolic extract solution derived from the root of *A. vepretorum* also demonstrated partial activity against *C. tropicalis*, with an inhibition zone of 9 mm, and inactivity against *E. faecalis* (7 mm), *E. coli* (8 mm), *C. albicans* (7 mm), *K. pneumoniae* (6 mm), and *S. aureus* (7 mm). Additionally, other studies has shown that ethanolic and hexanic extracts from the leaves of *A. vepretorum*, at a concentration of 0.39 mg/mL, exhibit inhibitory properties against the bacterium *Escherichia coli*. Additionally, the hexanic extract showed inhibitory effects against *Salmonella choleraesuis* and demonstrated relative efficacy against *Serratia marcescens* and *Staphylococcus aureus*. **CONCLUSION:** The results of this study provide evidence that the hexanic and methanolic extract solutions from the roots of *A. vepretorum* exhibit antimicrobial activity against *Candida tropicalis*. These findings are consistent with previous studies investigating the antimicrobial properties of plants from the *Annona* genus. However, further research is needed on the characteristics of this plant to identify components that may be useful for medicinal therapeutic production.