TITLE: ANTIMICROBIAL ACTIVITY *IN VITRO* OF THE ETHANOLIC EXTRACT OF *Commiphora leptophloeos* (Mart.) J. B. Gillett. AGAINST *Escherichia coli*, *Klebsiella* spp., *Salmonella* spp. AND *Staphylococcus aureus*

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ABSTRACT:
Escherichia coli, *Klebsiella* spp., *Salmonella* spp. and *Staphylococcus aureus* are bacteria responsible for causing hospital-acquired infection (HAI). These bacteria have been shown to be more resistant to antibiotics, and thus aggravating diseases. One form of resistance is the production of biofilm, which hinders the action of antimicrobials. Thus, the search for therapeutic alternatives that can inhibit these microorganisms is of paramount importance for the improvement of clinical conditions. In this context, medicinal plants, such as *Commiphora leptophloeos*, have antimicrobial potential and deserve to be investigated. The objective of this work was to evaluate the *in vitro* antibiotic and antibiofilm capacity of the crude ethanolic extract (CEE) of *C. leptophloeos* bark against *Salmonella* spp., *Klebsiella* spp., *E. coli* and *S. aureus* isolates. For this, the microdilution method was carried out in broth to determine the Minimum Bactericidal Concentration (MBC) of the CEE of the *C. leptophloeos* bark on the above bacterial isolates, 11 isolates of each. In addition, biofilm production was verified by these bacteria through the microplate adhesion test, as well as the ability of the extract to interfere in the formation of the biofilm and the consolidated biofilm. In the MBC, six isolates of *E. coli* were inhibited by the extract at concentrations 1,562.5 and 3,125 μg/mL; four isolates of *Klebsiella* spp. were also sensitive at the two concentrations mentioned above; all *Salmonella* spp. were sensitive to the extract, ranging from 3,125 to 6,250 μg / mL. For *S. aureus*, all the isolates were sensitive, but in more diverse concentrations: 781.2, 390.6 and 195.3 μg / mL. As for biofilm production, all isolates produce biofilm, ranging from weak to moderate producers. CEE was able to reduce biofilm formation in one *E. coli* isolate, and in 5 isolates of *S. aureus*, in the other isolates the extract did not influence or increase biofilm formation. CEE was able to reduce the consolidated biofilm of two isolates of *Salmonella* spp., and in 3 isolates of *S. aureus*, in the other isolates the extract did not interfere. Thus, CEE proved to be an important antimicrobial source against the bacteria analyzed, principally for *S. aureus*, but little effective as antibiofilm.

Keywords: Antimicrobial alternatives, bacteria, biofilm, Umburana de Cambão.

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