TITLE: EVALUATION OF ANTIMICROBIAL AND LEISHMANICIDE POTENTIAL OF ORGANIC MATERIALS DERIVED FROM THE SCHIFF BASE N,N-BIS'(SALICYLIDENE)-1,2-PHENYLENEDIAMINE.

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ABSTRACT:

Bacteria are the major etiological agents potentially causing health care-related infections and the fourth leading cause of death, according to the WHO. Parasitic agents such as Leishmania infantum chagasi, responsible for leishmaniasis, neglected and endemic disease, which has not always effective treatments and serious side effects, requiring the search for new drugs. Resistance to antibiotics and leishmanicides has increasingly induced bioprospecting and synthesis of new substances with pharmacological properties. The Schiff bases, especially those derived from the N,N-bis' (salylcilidene) -1,2-phenylenediamine linker, also known as Salofen have been studied in order to demonstrate the physical, chemical and biological properties due to variety of potential technological applications. The aimed of this study was to evaluate the antimicrobial and leishmanicidal potential of the Schiff base against organisms of importance in Public Health. To this end, microdilution assays were performed for five concentrations of Salofen, and fluorescence was then evaluated using the resazurin method for the following bacteria: *Salmonella* spp*, Citrobacter freudii, Staphylococcus aureus, Staphylococcus saprophyticus, Staphylococcus epidermidis, Micrococcus luteus* and *Baccilus Subtilis.* For the trials with the promastigotes of *L. infantum chagasi*, incubation of 24 and 48 hours for six concentrations of Salofen was carried out evaluating the viability by the colorimetric method of Alamar Blue®. The microdilution assays showed promising results, with inhibition rates higher than 90%, emphasizing a better efficiency with Gram-negative *Salmonella* spp and *C. freundii*. The leishmanicidal effect was also observed with IC50 at 1.06 $mg.mL^{-1}$ at 24 hours and 0.66 $mg.mL^{-1}$ at 48 hours. To conclude, the results collected suggest that the Schiff base tested has a promising antimicrobial potential, but in vitro cell cytotoxicity studies in amastigotes are necessary to prove its effects for future biotechnological applications.

Keywords: bacteria, fluorescence, microdilution assays, Salofen.

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