TITLE: ANTIMICROBIAL ACTIVITY OF AMINOCHALCONE, A CHALCONE DERIVATIVE, ON CLINICALLY RELEVANT PATHOGENS.

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ABSTRACT:

Polymicrobial infections are increasingly recognized as clinically important entities because of the patient's changed prognosis, resulting in longer hospital stay and decreased antimicrobial efficacy. In addition to resident species, studies have shown that the oral cavity shelters high proportions of various clinically important pathogens, particularly in immune deficient or hospitalized individuals. The main concern with drug resistance shows the need for active search for novel alternatives and compounds with antimicrobial potential. To evaluate the antifungal and antibacterial activity of aminochalcone (J38) – a derivative of chalcone – on different pathogens and further establish its cytotoxicity on *Galleria mellonella*. Aminochalcone (J38) was synthesized and diluted in DMSO. The compound was then tested for its Minimum Inhibitory and Bactericidal/Fungicidal Concentrations (MIC/MBC/MFC) against *Candida* spp., *Staphylococcus aureus*, methicillin-resistant *Staphylococcu aureus*, *Enterococcus faecalis*, *Pseudomonas aeruginosa* and *Acinetobacter baumannii*. Cytotoxicity was assessed in *Galleria mellonella*. Aminochalcone (J38) showed MIC and MFC values ranging from 7.8 to 15.6 µg/ml and 15.6 to 31.25 µg/ml, respectively against *Candida* spp. and against the selected bacteria, aminochalcone (J38) showed MIC and MBC values ranging from 1.95 to 15.6 µg/ml and 3.9 to 15.6 µg/ml, respectively. The compound did not show toxicity on *Galleria mellonella* at concentrations tested. Aminochalcone (J38), a chalcone derivative, showed promising antifungal and antibacterial activity against different pathogens and low toxicity *in vivo*. Thus, evaluating the results obtained, aminochalcone presented effective antimicrobial activity in *vitro*, open new avenues for the study of this aminochalcone as an excellent prototype antimicrobial.

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