

TITLE: ANTIBACTERIAL ACTIVITY OF HYDROXYCHALCONES AGAINST *STAPHYLOCOCCUS AUREUS* AND *ENTEROCOCCUS FAECALIS*

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ABSTRACT:

The resistance exhibited by bacterial pathogens to current antibacterial agents has been recognised as global problem. Nowadays 25,000 people/year die in Europe as result of infections caused by microorganisms that are untreatable with antimicrobial agents and it is predicted that there will be 10 million deaths every year globally by 2050 unless action is taken to safeguard the effectiveness of our antibiotics. Antimicrobial resistance among Gram-positive bacteria is a serious threat to public health. Chalcones are natural products and exhibit several *in vitro* and *in vivo* pharmacological activities, including antimicrobial. The present work aimed the synthesis of 42 hydroxychalcones and subsequent screening at 100 µg/mL and 50 µg/mL against *Staphylococcus aureus* (ATCC 25923) and *Enterococcus faecalis* (ATCC 29212). The screening was evaluated by broth microdilution test, Vancomycin was used as reference antibiotic. This test was colorimetrically revealed by resazurin. The result was expressed as percent bacterial growth inhibition. Screening using *S. aureus* and *E. faecalis* demonstrated a range of percentage inhibition of growth from 0 to 100%. At 100 µg/mL, 20 compounds showed growth inhibition $\geq 76\%$ against *S. aureus*. In 50 µg/mL, 9 compounds had growth inhibition $\geq 71\%$ against *S. aureus*. At 100 µg/mL and 50 µg/mL, 40 and 29 compounds showed growth inhibition $\geq 92\%$ and 73% against *E. faecalis*, respectively. These previous results demonstrated antibacterial potential of hydroxychalcones, besides prospecting the development of new active substances against *S. aureus* and *E. faecalis*.

Keywords: antibacterial, hydroxychalcones, *S. aureus*, *E. faecalis*

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