TITLE: BIOLOGICAL ACTIVITY OF METABOLITE PRODUCED BY Streptomyces sp. FRONT LINE OF S. aureus.

AUTHORS: SANTOS, W. T. S.; ARAUJO, T. R. R.; MARTINS, A. J.; AMORIM, E. A. F.; CASTRO. E. J. M.; MENDONÇA, R. C. M.;

INSTITUTION: UNIVERCIDADE CEUMA, MARANHÃO, MA (RUA JOSUÉ MONTELLO, 1 - RENASCENÇA II, SÃO LUÍS - MA, 65075-120)

ABSTRACT:

The bacterial resistance phenomenon has called attention to the importance of prospecting for new active compounds, for which several niches such as soil and plants have been explored. Among the microbial groups, the bacteria of the order Actinomycetales are known for their diversity in the production of bioactive metabolites of clinical interest and stand out for the diversified production of the secondary metabolites. In view of this, this study aims to evaluate the toxicity and antimicrobial activity of the metabolite produced by a battery of the genus Streptomyces sp. in vitro using the alternative model (Tenebrio molitor). To perform the tests, T. molitor larvae (~ 200 mg) were randomly distributed into five experimental groups (n = 10 / group), and then infected by injection of 10 µl of bacterial suspension (S. aureus strains ATCC 2011 and clinical isolates of S. aureus 3423, 4111, 0028, 432170 standardized at 1.0 x 10 5 CFU / ml in saline) on the left-hand side proleg. After 2 h, the larvae received 10 µg of metabolite as treatment. The mortality rate was observed over 10 days after infection. S. aureus bacteria were inoculated in saline while the metabolite was diluted in dimethyl sulfoxide (DMSO) at a concentration of 1000 µg / mL. up to 0.048 µg / mL (CIM). A survival rate of 80%, 20%, 50%, 20% and 0% was observed for S. aureus strains 3423, 4111, 0028, 432170 and ATCC 2011, respectively. These results confirm that there is inhibitory activity of the metabolite produced by the bacterium Streptomyces sp. Faced with Staphylococcus aureus and ATCC resistant bacteria.

Keywords: Metabolites; Staphylococcus aureus; Tenebrio molitor.

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