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To evaluate the antimicrobial potential of *Streptomyces* spp. J181 against clinical isolates of *S. pyogenes*

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ABSTRACT

Introduction: *Streptomyces* comprise the genus of actinobacteria most studied, as they have the ability to synthesize a variety of bioactive metabolites, of these many are antibiotics. *Streptococcus pyogenes* is a gram-positive coccus belonging to Group A of Lancefield. Among streptococci, it is the most relevant clinical agent in infections of the oral cavity due cases of streptococcal pharyngotonsillitis and its sequels: rheumatic fever and glomerulonephritis. They are also related to other pathologies such as endocarditis, septic arthritis, cellulitis, pyoderma and scarlatina. **Objective:** To evaluate the antimicrobial potential of *Streptomyces* spp. J181 against clinical isolates of *S. pyogenes*. **Methodology:** Blocks of 10 mm diameter obtained from the cultivation of the actinobacteria seeded on ISP-2 agar were transferred to Petri dishes containing 18 mL of blood agar previously seeded with *S. pyogenes*, then the plates were incubated at 35 ° C ± 1 ° C for 24 hours. After the incubation period, the inhibition halos were read in millimeters. To assess the susceptibility profile, the antibiogram of the bacterial isolates was carried out according to the recommendations of the Clinical & Laboratory Standards Institute. The tests were performed in triplicate, the results expressed in average plus standard deviation and the coefficient of variation adopted was ≤ 10%. **Results and Discussion:** The susceptibility profile of *S. pyogenes* isolates didn't show resistance to the evaluated antibiotics, resulting in sensitivity to therapy commonly adopted in the medical clinic. The lineage of *Streptomyces* spp. J181 was demonstrate efficient in the production of metabolites with antimicrobial activity, presenting inhibition halos with an average value of 17.4 mm, a good result, whereas in the assay performed the bioactive metabolites are secreted directly into the culture medium, without any purification process. **Conclusion:** The lineage *Streptomyces* spp. J181 presents potential for to production of metabolites with anti-streptococcal activity.

Keywords: Actinobacteria; Anti-bacterial agents; Gram-positive cocci

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