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Antimicrobial activity of Actinobacteria strain *Streptomyces* sp. SY-BS5 against fungi and multidrug resistant bacteria

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Abstract

The increasing emergence of multiresistant bacteria throughout the world and the lack of antibiotics to combat such pathogenic agents continue to be the major concern of the medical community. Fungal infections have increased dramatically during the last decade and ranked fourth of nosocomial infections and yeasts are the cause of serious pathologies affecting humains.

This antimicrobial resistance is presently an urgent focus of research and new bioactive compounds are necessary to combat these pathogens. The antibiotics of natural origin are produced in majority by microorganisms, in particular by actinobacteria strains.

In this presentation, the antimicrobial activity tests were released by well diffusion method against Gram positive and Gram negative bacteria, and against Yeast, collected from hospital and medical analysis laboratories in Bordj Bou Arreridj. The actinobacteria strain designated *Streptomyces* sp. SY-BS5 isolated from arid soil in Algerian Sahara, was selected for its interesting antibacterial and antifungal activities towards in particular multiresistant bacteria and *Candida* genus.

Indeed, the actinobacteria strain shows interesting antimicrobial activities against *Escherichia coli* and *Proteus mirabilis* with 10 and 09 mm inhibition diameters respectively and against *Staphylococcus aureus* 01 and *S. aureus* 02 with 15 and 18 mm inhibition diameters respectively, and against *Candida* sp. With 16mm. The results are interesting and extraction and characterization of bioactive molecules are in progress.

Several studies about Algerian Sahara soils were carried out, they represent particular ecosystems. They can be considered as an inexhaustible resource of biotechnology.

Keywords: *Actinobacteria*, Antimicrobial activity, Arid soils, Multiresistant bacteria, *Streptomyces*.