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P91

ANTIMICROBIAL ACTIVITY OF A MODERATE HALOPHILIC ACTINOMYCETE STRAIN ISOLATED FROM A SALINE SOIL IN THE REGION OF BEJAIA. EXTRACTION AND PARTIAL CHARACTERIZATION OF THE PRODUCED BIOACTIVE COMPOUNDS

Djinni Ibtissam, Kecha Mouloud, Souagui Samiha, Benallaoua Said

Microbial Biochemistry Laboratory/LMA, FSNV, A.MIRA University, 06000 Bejaia, Algeria

Abstract

Nowadays, new resistant strains emerge more quickly while the rate of discovery of new antibiotics is slowing down. Because of this, many scientists have focused on screening programs of microorganisms, primarily of actinomycetes, for their antibiotics production.

Actinomycetes are ubiquitous microorganisms where they are identified as one of the major groups of the soil population. They are widespread in nature and are an exceptionally prolific source of secondary metabolites accounting for more than half of all microbial antibiotics discovered to date. Species of terrestrial origin have been widely studied; however, species from saline ecosystems are relatively little known and exploited.

The strain was selected for its significant antibacterial and antifungal activities, against 6 bacteria, 3 filamentous fungi and yeast, among 156 moderately halophilic strains isolated from a saline soil in the region of Bejaia. Morphological and chemotaxonomic studies suggest that the isolate belongs to the genus *Streptovorticillium*. On the other hand, the physiological study has determined its ability to develop on media with high NaCl concentration reaching 4M.

The antibacterial and antifungal activities of this isolate are extracted both from the mycelium than from culture filtrates using five organic solvents of increasing polarity. Crude organic extracts of the strain were subject to partial purification on silica gel plate (TLC). A spectroscopic study and chemical revelations were also performed on crude extracts of culture filtrates and the results indicate the absence of polyenes compounds but also that our substances have similar properties to the polyethers molecules whose physicochemical and biological characteristics coincide with our results.

Key words: antibiotic activity, moderated halophilic actinomycetes, *Streptovorticillium*
