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## Isolation and screening of actinomycetes from Algerian soil for their enzymatic and antimicrobial activities

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The constant evolution of bacterial resistance to antibiotics and the emergence of new infectious diseases is a major public health problem; hence the urgent need for new antimicrobial molecules. Actinomycetes, slow growing Gram-positive bacteria are known as an organism that is useful in the search for bioactive compounds. In this study, 27 isolates of actinomycetes were isolated from soil samples collected in the area of Tizi Ouzou region (northern Algeria). A significant difference in the number of colonies was observed between the different culture media (Bennett, GLM and Sabouraud). After purification, the antibacterial activity of the 27 actinomycetes strains was tested against three bacterial strains from the ATCC collection (*Escherichia coli* ATCC 25922, *Pseudomonas aeruginosa* ATCC 27853 and *Staphylococcus aureus* ATCC 25923) by two agar diffusion methods: the perpendicular streak method and the agar cylinder method. Among 27 isolated strains, 13 showed antibacterial activity toward at least one bacterium in the primary screening. Of the 13 strains showing an antibacterial activity, 5 of them were found to be highly active against *Staphylococcus aureus* with inhibition diameters ranging from 20 to 26 mm. The 27 isolates were then subjected for enzymatic activities. From the test, only 3 strains of isolates have the ability to degrade cellulose; 4 showed amylase and 3 protease activities. The isolates showed positive results were then selected for identification.

### Biography

Akli Ouelhadj has completed his PhD at Martin Luther University, Germany and Postdoctoral studies from Pen State University, USA. Since 2009, he is an Assistant Professor at the Department of Biochemistry and Microbiology, University of Mouloud Mammeri, Algeria. His main interests focuses on microbial and plant biotechnology, genetics, bioactives compounds and abiotic stress.

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