

Determination of Extracellular Hydrolytic Enzyme Production Capacity and 16S rDNA Analysis of *Streptomyces* Bacteria Isolated from Soil Samples Collected in Sulaimani – IRAQ

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Aim of the study: *Streptomyces* bacterial isolates were isolated from soil samples taken from certain points in Suleymaniye province of Iraq. The activities of some extracellular hydrolytic enzymes were determined and phylogenetic analysis of the 16S rDNA gene region was performed.

Material and Methods: Twenty-six different strains of *Streptomyces* bacteria were isolated by dilution plate method and then purified. Amylase, protease, xylanase and lipase enzyme activities were determined. The 16S rDNA gene region was amplified with universal primers 27F and 1492R.

Results: Isolates showed positive results in 3 isolate xylanase activity, 3 isolate lipase activity, 21 isolate amylase activity and 18 isolate protease activity in extracellular hydrolytic enzyme activity studies. These results were obtained by using the Maximum Likelihood algorithm with the Mega 7.0.18 packet program and phylogenetic tree was constructed by the method of phylogenetic distance matrix (Jukes and Cantor 1969). According to the phylogenetic tree, isolates were divided into 2 major groups. All isolates were clustered with a strong homology in the *streptomyces* genus.

Keywords: Molecular characterization, Sulaimani, *Streptomyces*, 16S rDNA.