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Culturable Diversity of Halophilic Bacteria in Chott Tinsilt, Algeria

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Abstract : Saline lakes are extreme hypersaline environments that are considered five to ten times saltier than seawater (150 – 300 g L-1 salt concentration). Hypersaline regions differ from each other in terms of salt concentration, chemical composition and geographical location, which determine the nature of inhabitant microorganisms. In order to explore the diversity of moderate and extreme halophiles Bacteria in Chott Tinsilt (East of Algeria), an isolation program was performed. In the first time, water samples were collected from the saltern during pre-salt harvesting phase. Salinity, pH and temperature of the sampling site were determined in situ. Chemical analysis of water sample indicated that Na +and Cl- were the most abundant ions. Isolates were obtained by plating out the samples in complex and synthetic media. In this study, seven halophiles cultures of Bacteria were isolated. Isolates were studied for Gram's reaction, cell morphology and pigmentation. Enzymatic assays (oxidase, catalase, nitrate reductase and urease), and optimization of growth conditions were done. The results indicated that the salinity optima varied from 50 to 250 g L-1, whereas the optimum of temperature range from 25°C to 35°C. Molecular identification of the isolates was performed by sequencing the 16S rRNA gene. The results showed that these cultured isolates included members belonging to the Halomonas, Staphylococcus, Salinivibrio, Idiomarina, Halobacillus Thalassobacillus and Planococcus genera and what may represent a new bacterial genus.

Keywords : bacteria, Chott, halophilic, 16S rRNA
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