

Marinobacter sinuspersicus sp. nov., a moderately halophilic bacterium from Aran-Bidgol Lake, a hypersaline Iranian lake

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Abstract:

Moderately halophilic bacteria are microorganisms widely distributed in hypersaline habitats such as lakes and salterns, able to grow optimally at 3 to 15% NaCl. During the course of biodiversity studies in the hypersaline Lake Aran-Bidgol in centre of Iran, we isolated several halophilic bacteria that could represent new taxa. Amongst them, a moderately halophilic Gram-negative curved-rod, designated strain M9, was isolated from water of the lake and characterized taxonomically using a polyphasic approach. The genomic DNA of the strain was extracted by DNA extraction kit (Roch, Germany) according to the manufacturer's recommended procedure and the 16S rRNA gene was amplified using the Bacterial universal primers: 27F (5'-AGAGTTTGATCMTGGCTCAG-3') and 1492R (5'-GGTTACCTTGTTACGACTT-3'). The Strain was facultatively anaerobe, motile, non-sporulating, oxidase and catalase positive. It grew at salinities of 5-20 % (w/v) NaCl, showing optimal growth at 5-10 % (w/v). Growth occurred at 25.0-45.0 °C and in the pH range 5.5-10.0. The major respiratory lipoquinone of the strain was ubiquinone Q-9. Phylogenetic analyses based on 16S rRNA sequence comparisons indicated that strain M9 was most closely related to *Marinobacter hydrocarbonoclasticus* (97.7%). The DNA G + C content was 45.0 mol%. The major fatty acids were C16:0 (28.08) , C19:1w6c (19.25), C18:1 w9c (12.25), and C16:1 w9c (10.08), and its polar lipid pattern consisted of PG, DPG, PE, PSer, and three phospholipids. On the basis of phenotypic and chemotaxonomic characteristics, 16S rRNA sequence analysis and DNA-DNA relatedness of less than 50% with *Marinobacter hydrocarbonoclasticus*, it is proposed that strain M9 should be placed in the genus *Marinobacter* as the type strain of a novel species, *Marinobacter sinuspersicus* sp. nov.

Key words: Halophilic bacteria, *Marinobacter sinuspersicus*, Moderately halophiles