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Bacilli community of saline-alkaline soils from the Ararat Plain (Armenia) assessed by molecular and culture-based methods

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Abstract

The bacterial community composition in the A horizon of a natural saline-alkaline soil located in Ararat Plain (Armenia) was studied using molecular and culture-based methods. The sequence analysis of a 16S rRNA gene clone library and denaturing gradient gel electrophoresis (DGGE) profiles indicated dominance of *Firmicutes* populations. The majority of the sequences of the bacterial 16S rRNA gene library were close relatives of representatives belonging to the genera *Halobacillus* (41.2%), *Piscibacillus* (23.5%), *Bacillus* (23.5%) and *Virgibacillus* (11.8%). Eight novel moderately halophilic bacilli isolates were successfully obtained from the enriched cultures of the saline-alkaline soil samples. 16S rRNA gene sequence analyses of isolates revealed their affiliation (97.7-99.7% similarity) to representatives of the genera *Bacillus*, *Piscibacillus* and *Halobacillus*. All isolates were able to tolerate high

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