

Paenibacillus xylanisolvens sp. nov., a xylan-degrading bacterium from soil

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Abstract

A xylan-degrading bacterium, strain X11-1^T, was isolated from soil collected in Nan province, Thailand. The strain was characterized based on its phenotypic and genotypic characteristics. Strain X11-1^T was a Gram-stain-positive, facultatively anaerobic, spore-forming, rod-shaped bacterium. It contained *meso*-diaminopimelic acid in the cell-wall peptidoglycan. The major menaquinone was MK-7, anteiso-C_{15:0} (56.6%) and C_{16:0} (14.0%) were the predominant cellular fatty acids and diphosphatidylglycerol, phosphatidylmonomethylethanolamine, phosphatidylethanolamine and phosphatidylglycerol were the major phospholipids. The DNA G+C content was 51.6 mol%. Phylogenetic analysis using 16S rRNA gene sequences showed that strain X11-1^T was affiliated to the genus *Paenibacillus* and was closely related to *Paenibacillus naphthalenovorans* KACC 11505^T and *Paenibacillus validus* CCM 3894^T, with 96.5% sequence similarity. Therefore, the strain represents a novel species of the genus *Paenibacillus*, for which the name *Paenibacillus xylanisolvens* sp. nov. is proposed. The type strain is X11-1^T (=KCTC 13042^T =PCU 311^T =TISTR 1829^T).

The GenBank/EMBL/DDJB accession number for the 16S rRNA gene sequence of strain X11-1^T is AB495094.

Three supplementary figures are available with the online version of this paper.