

Sphingomonas panaciterrae sp. nov., a plant growth-promoting bacterium isolated from soil of a ginseng field

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Abstract Strain DCY91^T, a Gram-stain-negative, rod-shaped, aerobic, non-motile bacterium, was isolated from soil of ginseng field in Gyeonggi province, South Korea. Strain DCY91^T shared the highest 16S rRNA gene sequence similarity with *Sphingomonas mucosissima* DSM 17494^T (98.55 %), *Sphingomonas dokdonensis* KACC 17420^T (98.11 %) and *Sphingomonas xinjiangensis* DSM 26736^T (96.68 %). The strain DCY91^T was found to be able to grow best in trypticase soy agar at 28 °C, at pH 7 and at 0.5 % NaCl. Ubiquinone 10 was identified as the isoprenoid quinone. The major polar lipids were identified as sphingoglycolipid, diphosphatidylglycerol, phosphatidylethanolamine, phosphatidylglycerol and phosphatidylcholine. The major fatty acids of strain

DCY91^T were identified as unsaturated C_{18:1}ω7c and saturated C_{16:0}. The major polyamine content was sym-homo-spermidine. The DNA G + C content was determined to be 65.8 mol% (HPLC). After 6 days of incubation, strain DCY91^T produced 9.64 ± 1.73 and 33.73 ± 4.66 μg/ml indole-3-acetic acid, using media without L-tryptophan and supplemented with L-tryptophan, respectively. Strain DCY91^T was also weakly solubilized phosphate and produced siderophores. On the basis of the phenotypic characteristics, genotypic analysis and chemotaxonomic characteristics, strain DCY91^T is considered to represent a novel species of the genus *Sphingomonas*, for which the name *Sphingomonas panaciterrae* sp. nov. is proposed. The type strain is DCY91^T (=KCTC 42346^T =JCM 30807^T).

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Introduction

The genus *Sphingomonas* belongs to the *Alphaproteobacteria* (Lee et al. 2005) and was firstly described by Yabuuchi et al. (1990). The description of the genus was subsequently emended by Takeuchi et al. (2001) with the type strain *Sphingomonas paucimobilis*. At the time of writing, the genus *Sphingomonas* comprised 88 species with validly published names as of January 2015 (<http://www.bacterio.net/sphingomonas.html>). Members of the genus *Sphingomonas* are rod-shaped, yellow-pigmented, non-sporulating, aerobic, chemoheterotrophic, Gram-staining-negative and non-motile or motile by means of a single polar flagellum (Busse et al. 2003). They are characterized chemotaxonomically by the presence of ubiquinone 10