

***Micromonospora schwarzwaldensis* sp. nov., a producer of telomycin, isolated from soil.**

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Micromonospora schwarzwaldensis sp. nov., a producer of telomycin, isolated from soil. *Int J Syst Evol Microbiol* 63(Pt 10), 3812-3817.

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Abstract

A Gram-stain-positive, spore-forming actinomycete strain (HKI0641(T)) was isolated from a soil sample collected in the Black Forest, Germany. During screening for antimicrobial natural products this bacterium was identified as a producer of the antibiotic telomycin. Morphological characteristics and chemotaxonomic data indicated that the strain belonged to the genus *Micromonospora*. The peptidoglycan of strain HKI0641(T) contained meso-diaminopimelic acid, and the fatty acid profile consisted predominantly of anteiso-C15 : 0, iso-C15 : 0, iso-C16 : 0 and C16 : 0. MK-10(H4), MK-10(H2) and MK-10 were identified as the major menaquinones. To determine the taxonomic positioning of strain HKI0641(T), we computed a binary tanglegram of two rooted phylogenetic trees that were based upon 16S rRNA and *gyrB* gene sequences. The comparative analysis of the two common classification methods strongly supported the phylogenetic affiliation with the genus *Micromonospora*, but it also revealed discrepancies in the assignment at the level of the genomic species. 16S rRNA gene sequence analysis identified *Micromonospora coxensis* DSM 45161(T) (99.1 % sequence similarity) and *Micromonospora*

marina DSM 45555(T) (99.0 %) as the nearest taxonomic neighbours, whereas the gyrB sequence of strain HKI0641(T) indicated a closer relationship to *Micromonospora aurantiaca* DSM 43813(T) (95.1 %). By means of DNA-DNA hybridization experiments, it was possible to resolve this issue and to clearly differentiate strain HKI0641(T) from other species of the genus *Micromonospora*. The type strains of the aforementioned species of the genus *Micromonospora* could be further distinguished from strain HKI0641(T) by several phenotypic properties, such as colony colour, NaCl tolerance and the utilization of carbon sources. The isolate was therefore assigned to a novel species of the genus *Micromonospora*, for which the name *Micromonospora schwarzwaldensis* sp. nov. is proposed. The type strain is HKI0641(T) (= DSM 45708(T) = CIP 110415(T)).

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