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***Zoogloea oleivorans* sp. nov., a floc-forming, petroleum hydrocarbon-degrading bacterium isolated from biofilm**

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Abstract:

A floc-forming, Gram-stain-negative, petroleum hydrocarbon-degrading bacterial strain, designated Buc^T, was isolated from a petroleum hydrocarbon-contaminated site in Hungary. Phylogenetic analysis based on 16S rRNA gene sequences revealed that strain Buc^T formed a distinct phyletic lineage with the genus *Zoogloea*. Its closest relative was found to be *Zoogloea caeni* EMB43^T (97.2% 16S rRNA gene sequence similarity) followed by *Zoogloea oryzae* A-7^T (95.9%), *Zoogloea ramigera* ATCC 19544^T (95.5%) and *Zoogloea resiniphila* DhA-35^T (95.4%). The level of DNA-DNA relatedness between strain Buc^T and *Z. caeni* EMB43^T was 31.6%. Cells of strain Buc^T are facultatively aerobic, rod-shaped, and motile by means of a polar flagellum. The strain grew at temperatures of 5 – 35 °C (optimum 25 – 28 °C), and at pH 6.0 – 9.0 (optimum 6.5 – 7.5). The predominant fatty acids were C_{16:0}, C_{10:0} 3-OH, C_{12:0} and summed feature 3 (C_{16:1} ω7c and / or iso-C_{15:0} 2-OH). The major respiratory quinone was ubiquinone-8 (Q-8) and the predominant polar lipid was phosphatidylethanolamine. The genomic DNA G + C content was 63.2 mol%. On the basis of the chemotaxonomic, molecular and phenotypic data, isolate Buc^T is considered to represent a novel species of the genus *Zoogloea*, for which the name *Zoogloea oleivorans* sp. nov. is proposed. The type strain is Buc^T (=DSM 28387^T = NCAIM B 02570^T).

Key-words: *Zoogloea oleivorans* sp. nov., petroleum hydrocarbon degradation, biofilm, facultatively aerobic, anaerobic conditions