

'*Pseudomonas saudiphocaensis*' sp. nov., a new bacterial species isolated from currency notes collected during the Hajj pilgrimage in 2012 at Makkah, Saudi Arabia

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Abstract

We report here the main characteristics of '*Pseudomonas saudiphocaensis*' strain 20_BN^T (CSUR P1224), a new species of the *Pseudomonas* genus that was isolated from currency notes collected during the Hajj pilgrimage in 2012 at Makkah, Saudi Arabia.

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Paper currency is commonly and routinely passed among individuals, and microbes can be spread on the surface of paper currency [1]. As a part of a wider culturomics study in Saudi Arabia, we isolated a new bacterium, strain 20_BN^T, from currency notes collected during the Hajj pilgrimage in 2012 at Makkah, Saudi Arabia. Strain 20_BN^T was cultured in 5% sheep's blood-enriched Columbia agar (bioMérieux, Marcy l'Étoile, France) for 2 days in an aerobic atmosphere at 37°C. On Columbia agar, colonies were yellow-transparent and round, with an average diameter of 1 mm. Growth was observed in aerobic and anaerobic conditions. The strain 20_BN^T is a Gram-negative, rod-shaped, motile catalase and oxidase-positive bacterium. Growth was observed in the range of 0 to 2% NaCl, with the optimum being 0.5% NaCl. Cells from fresh colonies grown on agar were examined by electron

microscopy. A mean diameter of 0.5 µm and a mean length of 2.2 µm were estimated, as well as a single polar flagellum per cell. No identification was obtained for the strain 20_BN^T using our matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS) screening on a Micro-Flex spectrometer (Bruker Daltonics, Bremen, Germany) [2].

The complete 16S rRNA gene was sequenced using fD1-rP2 primers as previously described and using a 3130-XL sequencer (Applied Biosciences, Saint Aubin, France) [3]. Strain 20_BN^T exhibited a 98.3% sequence similarity with *Pseudomonas stutzeri* (NR103934.1), the phylogenetically closest species with standing in nomenclature (Fig. 1). Consequently it putatively classifies the strain 20_BN^T as a new member of the genus *Pseudomonas* within the family *Pseudomonadaceae* in the phylum *Proteobacteria*. The genus *Pseudomonas* was first created in 1894 by Migula, and an emended description of the genus *Pseudomonas* was proposed by Yang *et al.* in 2013 [4]. To date more than 200 species have been described (<http://www.bacterio.cict.fr/c/pseudomonas.html>). Members of the genus *Pseudomonas* are mostly environmental bacteria widely distributed in soil, water and air [5].

Strain 20_BN^T exhibited a 16S rRNA gene sequence divergence >1.3% with *P. stutzeri*, the closest related species with standing in nomenclature, which classifies it as a new representative of the *Pseudomonas* genus isolated from currency

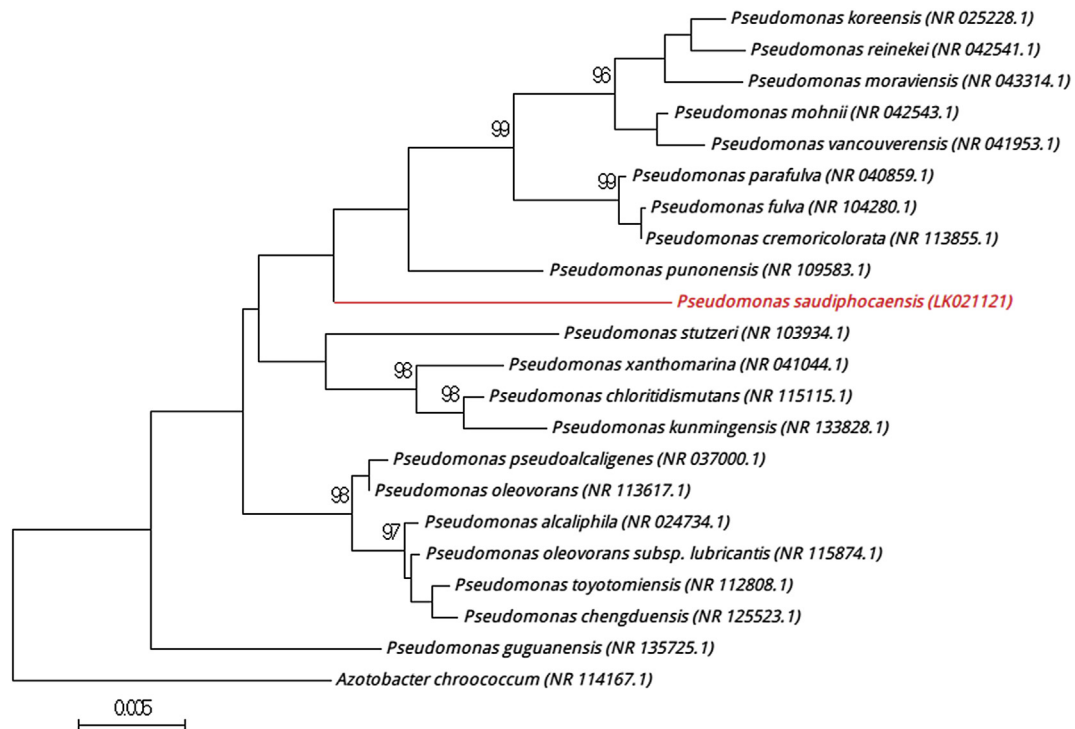


FIG. 1. Phylogenetic tree highlighting position of '*Pseudomonas saudiphocaensis*' relative to other phylogenetically closest members of *Pseudomonas* genus. Numbers at nodes are percentages of bootstrap values obtained by repeating analysis 500 times to generate majority consensus tree. Only values >95% are displayed. Scale bar represents 0.5% nucleotide sequence divergence.

notes collected during the Hajj pilgrimage in 2012 at Makkah. As a result, we propose the creation of '*Pseudomonas saudiphocaensis*' sp. nov., and strain 20_BN as the type strain.

MALDI-TOF MS spectrum

The MALDI-TOF MS spectrum of 20_BN^T is available online (<http://www.mediterranee-infection.com/article.php?laref=256&titre=urms-database>).

Nucleotide sequence accession number

The 16S rRNA gene sequence of the strain 20_BN^T was deposited in GenBank under accession number LK021121.

Deposit in a culture collection

Strain 20_BN^T was deposited in the Collection de Souches de l'Unité des Rickettsies (CSUR, WDCM 875) under number PI224.

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Conflict of Interest

None declared.

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