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'*Peptoniphilus urinimassiliensis*' sp. nov., a new bacterial species isolated from a human urine sample after de novo kidney transplantation

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Abstract

We describe here the main features of '*Peptoniphilus urinimassiliensis*' strain Marseille-P3195^T (= CSUR P3195) that was isolated from the urine sample of a 37-year-old man who had just received a kidney transplant for genetic focal segmental glomerulosclerosis.

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Keywords: Culturomics, kidney transplant, '*Peptoniphilus urinimassiliensis*', taxonomy, urine

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This study is included in the global exploration of the urinary microbiota by culturomics [1,2]. We investigated urine samples of adult kidney transplant recipients. A new species of the genus *Peptoniphilus*, which could not be identified by our systematic matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS) screening on a Microflex spectrometer (Bruker Daltonics, Bremen, Germany) [3], was isolated from a urine sample of a 37-year-old man, after kidney transplantation for genetic focal segmental glomerulosclerosis. The patient gave informed, signed consent, and the agreement of the local ethics committee of the IFR48 (Marseille, France) was obtained under number 09-022. We isolated the strain Marseille-P3195 after 4 days of direct seeding culture of the urine sample on 5% sheep blood Columbia agar medium (bio-Mérieux, Marcy l'Étoile, France) incubated at 37°C in an anaerobic atmosphere (AnaeroGen™, Oxoid Ltd, Dardilly, France). Colonies were circular, greyish and translucent with a

diameter of 1–1.5 mm. Strain Marseille-P3195 cells were Gram-positive cocci, ranging in diameter from 500 to 900 nm. The strain Marseille-P3195 does not exhibit oxidase activity but it is catalase positive.

The complete 16S rRNA gene was sequenced using fD1-rP2 primers as previously described [4] and a 3130-XL sequencer (Applied Biosciences, Saint Aubin, France). The strain Marseille-P3195 exhibited a sequence similarity of 97.9% with *Peptoniphilus pacaensis* strain KHD5^T (GenBank Accession number LN998072) and 96.2% with *Peptoniphilus coxii* strain RMA 16757 (GenBank Accession number NR_117556), the closest species with a valid name (Fig. 1), which was first described by Citron et al. in 2012 [5]. Consequently, as the 16S rRNA gene sequence similarity is <98.7%, which is the threshold recommended to delineate a new species of prokaryotes [6,7], we propose classifying the strain Marseille-P3195 as the representative strain of a new species within the genus *Peptoniphilus* among the *Peptoniphilaceae* family, and the creation of the name '*Peptoniphilus urinimassiliensis*' sp. nov. (u.ri.ni.mas.sil.lien'sis composed of u.ri.ni L. masc. adj for urine, from which strain Marseille-P3195 was isolated and mas.si.li.en'sis, L., masc. adj., *massiliensis* for Massilia, the Latin name of Marseille, France, where the type strain was first isolated). The strain Marseille-P3195^T is the type strain of '*Peptoniphilus urinimassiliensis*' sp. nov.

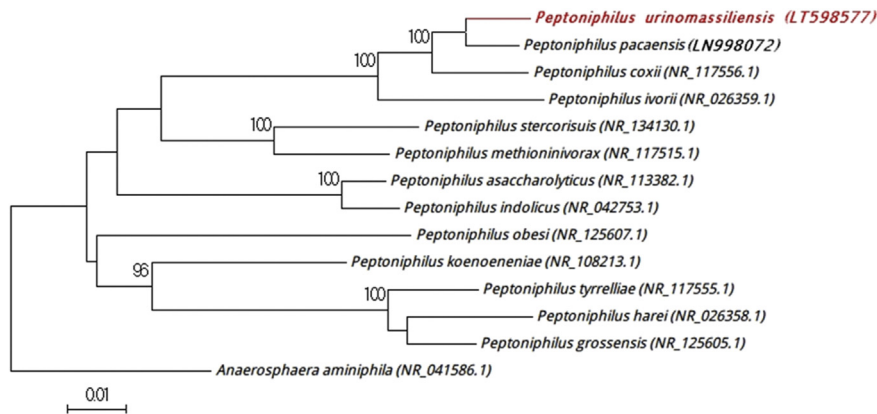


FIG. 1. Phylogenetic tree showing the position of ‘*Peptoniphilus urinomassiliensis*’ strain Marseille-P3195^T relative to other phylogenetically close neighbours. GenBank Accession numbers are indicated in parentheses. Sequences were aligned using CLUSTALW, and phylogenetic inferences were obtained using the maximum-likelihood method within the MEGA software. Numbers at the nodes are percentages of bootstrap values obtained by repeating the analysis 500 times to generate a majority consensus tree. Only the bootstraps scoring at least 90% were retained. The scale bar indicates a 1% nucleotide sequence divergence.

MALDI-TOF MS spectrum accession number. The MALDI-TOF MS spectrum of ‘*Peptoniphilus urinomassiliensis*’ strain Marseille-P3195^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 was deposited in GenBank under Accession number LT598577.

Deposit in a culture collection. Strain Marseille-P3195^T was deposited in the Collection de Souches de l’Unité des Rickettsies (CSUR, WDCM 875) under number P3195.

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Transparency declaration

The authors have no conflicts of interest to declare.

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