

“*Ihuprevotella massiliensis*” gen. nov., sp. nov., isolated from human gut

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Abstract

We report here the main characteristics of “*Ihuprevotella massiliensis*” strain Marseille-P2826^T (CSURP 2826) that was isolated from a human right colon lavage sample.

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In recent years, scientific interest in the role played by endogenous gut microflora in human health has undergone a great expansion, but our knowledge remains far from exhaustive [1]. During an ongoing study aimed at analysing the gut microflora by culturomics [2], we grew by pure culture a bacterial strain that escaped matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS) identification using a MicroFlex spectrometer (Bruker Daltonics, Bremen, Germany) [3]. Strain Marseille-P2826 was isolated from a right colon lavage sample of a 58-year-old man who underwent upper and lower endoscopy examination to investigate sideropenic anemia. Signed informed consent was obtained, and the agreement of the ethics committee of the IFR48 (Faculty of Medicine, Marseille, France) was obtained under number 09-022. Growth of strain Marseille-P2826 was obtained on 5% sheep’s blood-enriched Columbia agar (bioMérieux, Marcy l’Etoile, France) incubated in an anaerobic atmosphere (anaeroGEN, Oxoid, Dardilly, France) after a 15-day enrichment step of the fresh right colon sample in an anaerobic blood culture bottle (Becton Dickinson, Pont de Claix, France) enriched with sheep’s blood and 0.2 µm filtered rumen at 37°C. Bacterial cells were Gram negative, rod shaped

and polymorphic but did not form spores and were not motile. Strain Marseille-P2826 exhibited no catalase and no oxidase activities. After 48 hours of anaerobic incubation, colonies varied from 0.6 to 1.2 mm in diameter and were circular, convex, smooth, opaque, whitish and not haemolytic.

The 16S rRNA gene sequence was obtained using the fD1-rP2 primers as previously described using a 3130-XL sequencer (Applied Biosciences, Saint Aubin, France) [4]. Strain Marseille-P2826 exhibited a 90% sequence similarity with *Alloprevotella rava* (NR 118334.1), the closest species with standing in nomenclature (Fig. 1), which putatively classifies it as a member of a new genus within the family *Prevotellaceae* in the *Bacteroidetes* phylum [5]. The family *Prevotellaceae* is composed of four genera with validly published names, including *Prevotella*, *Alloprevotella*, *Hallella* and *Paraprevotella* [6]. *Xylanibacter oryzae*, the only representative of a fifth genus within the *Prevotellaceae* family, has been relocated among the *Prevotella* genus on the basis of the *hsp60* sequence analysis [7], although it is still not clear if *Hallella* constitutes a distinct genus or if it should be part of the *Prevotella* genus [8]. The *Alloprevotella* genus was created in 2013 after the isolation of *Alloprevotella rava* from the human oral cavity and comprises only two species [9]. Species belonging to the genus *Alloprevotella* are Gram negative, obligately anaerobic, nonmotile bacilli that are usually isolated from the human oral cavity [9].

On the basis of the 16S rRNA gene sequence divergence of strain Marseille-P2826 (>5%) with the phylogenetically closest

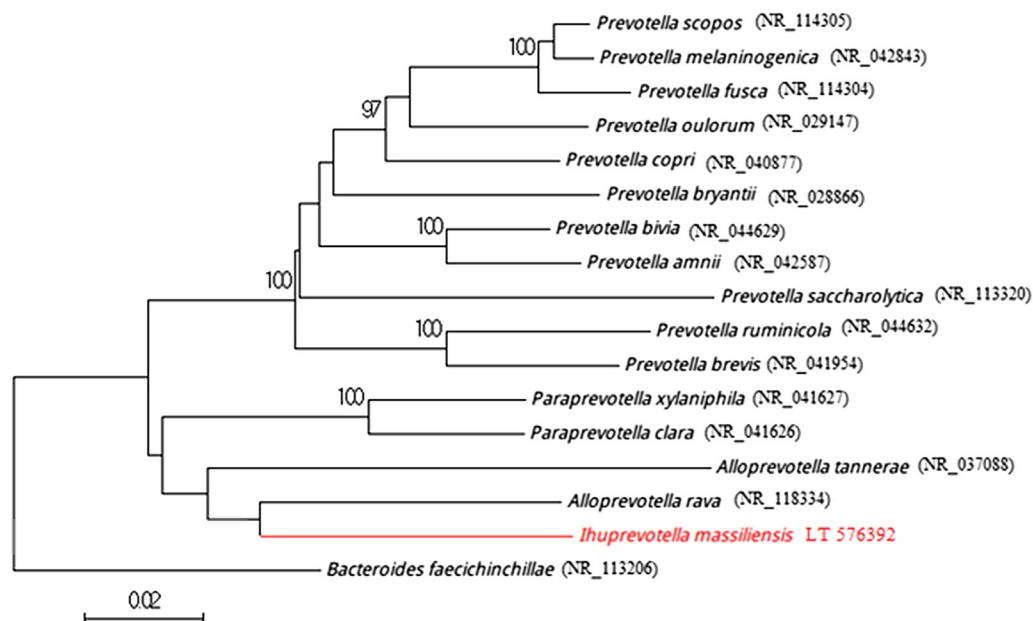


FIG. 1. Phylogenetic tree showing position of “*Ihuprevotella massiliensis*” strain P2826^T (in red) relative to other phylogenetically close members of family *Prevotellaceae*. GenBank accession numbers are indicated in parentheses. Sequences were aligned using CLUSTALW, and phylogenetic inferences were obtained using maximum-likelihood method within MEGA software. 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 indicates 2% nucleotide sequence divergence.

species [10] we propose the creation of the new genus *Ihuprevotella* (ihu.pre.vo.tel'la, with IHU from Institut Hospitalier Universitaire, the institution in Marseille where the strain was first described; N.L. fem. n. *Prevotella*, a bacterial generic name; N.L. fem. n. *Ihuprevotella*, organism related to the family *Prevotellaceae* isolated at IHU). Strain Marseille-P2826 is the type strain of *Ihuprevotella massiliensis* gen. nov., sp. nov. (mas.si.li.en'sis, N.L. fem. adj., *massiliensis*, “of Massilia,” the Roman name of Marseille, where strain Marseille-P2826 was isolated).

Nucleotide sequence accession number

The 16S rRNA gene sequence was deposited in GenBank under accession number LT576392. The MALDI-TOF MS spectrum of “*Ihuprevotella massiliensis*” strain Marseille-P2826^T is available at <http://www.mediterranee-infection.com/article.php?laref=256&titre=urms-database>.

Deposit in a culture collection

Strain Marseille-P2826^T was deposited in the Collection de Souches de l'Unité des Rickettsies (CSUR, WDCM 875) under number Marseille-P2826.

Conflict of Interest

None declared.

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