NEW SPECIES

“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-P2826T (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 observed 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 Prevotellaceae 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...
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. (massi-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-P2826T is available at http://www.mediterranee-infection.com/article.php?laref=256&titre=urms-database.

Deposit in a culture collection

Strain Marseille-P2826T was deposited in the Collection de Souches de l’Unité des Rickettsies (CSUR, WDCM 875) under number Marseille-P2826.

Conflict of Interest

None declared.

References

