NEW SPECIES

‘Metaprevotella massiliensis’ gen. nov., sp. nov., isolated from human ileum

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Abstract

We report here the main characteristics of ‘Metaprevotella massiliensis’ strain Marseille-P-3114T (CSURP3114) that was isolated from a human ileum sample.

After 96 hours’ anaerobic incubation on 5% sheep’s blood−enriched agar (bioMérieux) at 37°C, colonies were circular, convex with entire edges and translucent. Mean diameter was 0.5 to 2 mm. After 3 weeks’ incubation under the same conditions, dark pigment production was observed. Bacterial cells were Gram-negative rods 0.3 to 0.5 μm wide by 1 to 2 μm long. Strain Marseille-P-3114T tested catalase and oxidase negative. Different temperatures (20, 28, 37, 45 and 55°C) and atmospheres (anaerobic, microaerophilic and aerobic conditions) were tested on 5% sheep’s blood−enriched Columbia agar (bioMérieux). Growth was achieved only under anaerobic atmosphere at 37°C. Sporulation test (20 minutes at 80°C) was negative.

The 16S rRNA gene was sequenced using fD1-rP2 primers as previously described [3], using a 3130-XL sequencer (Applied Biosciences, Saint Aubin, France). Strain Marseille-P-3114T exhibited a 89.39% sequence identity with Prevotella buccae strain ATCC 33574T (GenBank accession no. L16477), the phylogenetically closest species with standing in nomenclature (Fig. 1), which putatively classified strain Marseille-P-3114T as a member of a new genus within the family Prevotellaceae in the phylum Bacteroidetes. The Family Prevotellaceae was proposed by Krieg in 2012 and was validated the same year [4]; it actually comprises four genera with validly published names: Prevotella, Alloprevotella, Hallella and Paraprevotella [5]. The genus Prevotella was created in 1990 to accommodate those Bacteroides that were only moderately

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In 2016, as a part of culturomics study [1] targeted at the study of the modifications of the human microbiome along the whole gastrointestinal tract, we isolated from the ileum of a 25−year-old patient with Crohn disease a bacterial strain that escaped identification by our systematic matrix-assisted desorption ionization−time of flight mass spectrometry (MALDI-TOF MS) screening on a Microflex spectrometer (Bruker Daltonics, Bremen, Germany) [2]. The patient provided signed informed consent, and the study was validated by the ethics committee of the Institut Fédératif de Recherche IFR48 under number 09-022.

Strain Marseille-P-3114T growth was obtained on 5% sheep's blood−enriched Columbia agar medium (bioMérieux, Marcy l’Etoile, France) in an anaerobic atmosphere (anaeroGEN, Oxoid, Dardilly, France) after a 30-day enrichment of the fresh ileal sample in an anaerobic haemoculture bottle (Becton Dickinson, Pont de Claix, France) added with 5 mL of sterile sheep’s blood (bioMérieux) and 5 mL of 0.2 μm filtered (Thermo Fisher Scientific, Villebon-sur-Yvette, France) rumen at 37°C.
saccharolytic and were not able to properly grow in bile-enriched medium [6], and today it contains 49 species with a standing in nomenclature. Species belonging to this genus are Gram-negative, anaerobic, non-spore-forming, nonmotile rods, and their common habitats are mammals, although one species has been retrieved from environmental source (Prevotella oryzae, isolated from rice field soil) [7]. They are generally considered to be a commensal species, but under particular circumstances, they are able to induce a wide range of diseases such as bacteraemia, disseminated abscesses, meningitis and endocarditis [8].

On the basis of the 16S rRNA sequence divergence of strain Marseille-P3114T with the phylogenetically closest species with standing in nomenclature [9], we propose here the creation of the new genus Metaprevotella (Me.ta.pre.vo.tel′la, Gr. adv. meta, ‘besides’; N.L. fem. n. Prevotella, a bacterial generic name; N.L. fem. n. Metaprevotella ‘organism related to the genus Prevotella but different’) for which the strain Marseille-P3114T (= CSURP3114 = DSM 103534) is the type strain. Strain Marseille-P3114T is the type strain of Metaprevotella massiliensis gen. nov., sp. nov. (mas.si.li.en′sis, L. fem. adj. massiliensis, for Massilia, the Roman name of Marseille).

The MALDI-TOF MS spectrum of ‘Metaprevotella massiliensis’ strain Marseille-P3114T 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 LT598559.

### Deposit in a culture collection

Strain Marseille-P3114T was deposited in the Collection de Souches de l’Unité des Rickettsies (CSUR, WDCM 875) under number P3114 and in the Deutsche Sammlung von Mikroorganismen und Zellkulturen under number DSM103534.
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Conflict of Interest

None declared.

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