

'*Bacteroides mediterraneensis*' sp. nov., a new human-associated bacterium isolated from ileum specimen

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Abstract

We report here the main characteristics of '*Bacteroides mediterraneensis*' strain Marseille-P2644^T (CSURP2644) that was isolated from the stored samples of gut.

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As part of a culturomics study of the human microbiome [1,2], we isolated in March 2016 a bacterial strain that could not be identified by our systematic matrix-assisted laser desorption-ionization time-of-flight screening on a Microflex spectrometer (MALDI-TOF MS) (Bruker Daltonics, Bremen, Germany) [3]. This strain was first cultivated from an ileum liquid sample [4] of a 58-year-old woman without medical history who underwent an upper endoscopy and colonoscopy because of a positive screening test for colorectal cancer. 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.

Initial growth of Marseille-P2644 was obtained in anaerobic conditions generated using the anaeroGEN system (Oxoid Ltd, Dardilly, France) at 37°C, after 1 day of incubation after direct seeding of the ileum liquid sample on a 5% sheep blood-enriched Columbia agar (bioMérieux, Marcy l'Etoile, France). Agar-grown colonies were white and circular, with a diameter

of 0.6 mm. Bacterial cells were Gram-negative bacilli, rod-shaped, 1.2 µm in length and 0.7 µm in diameter. Strain Marseille-P2644 exhibited no catalase and no oxidase activities.

The complete 16S rRNA gene was sequenced using fDI-rP2 primers as previously described [5], using a 3130-XL sequencer (Applied Biosciences, Saint Aubin, France). Strain Marseille-P2644 exhibited a 95.1% sequence similarity [6] with *Bacteroides coprocola* strain ABIY 20521 (DSM 17136, GenBank Accession no. AB200224), the phylogenetically closest species with standing nomenclature (Fig. 1), which putatively classifies it as a member of the genus *Bacteroides* within the family *Bacteroidaceae* in the phylum *Bacteroidetes*. *Bacteroides coprocola* strain ABIY 20521 was identified for the first time in 2005, from the human faeces of three healthy Japanese individuals [7].

Due to the 16S rRNA sequence divergence of >1.3% from its phylogenetically closest species with standing in nomenclature [8], we propose the creation of the new species '*Bacteroides mediterraneensis*' sp. nov., (me.di.ter.ra.ne.en'sis. N.L. masc. adj., from *Mare Mediterraneum*, the Latin name of the Mediterranean sea) as Marseille, where the strain was first isolated, is in the Mediterranean area. Strain Marseille-P2644^T is the type strain of the new species '*Bacteroides mediterraneensis*' sp. nov.

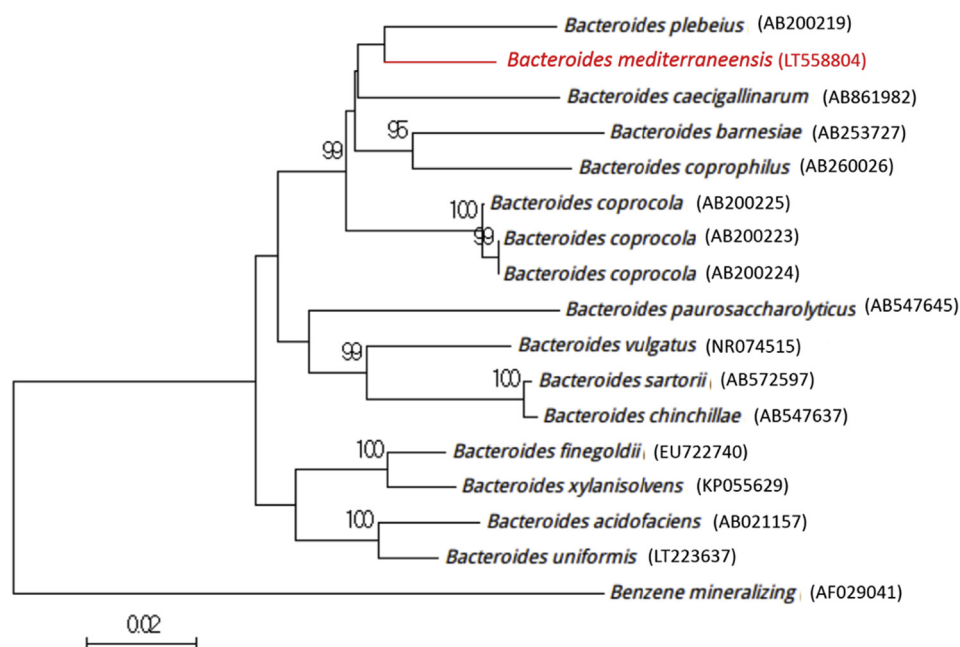


FIG. 1. Phylogenetic tree showing the position of 'Bacteroides mediterraneensis' strain Marseille-P2644^T relative to other phylogenetically close members of the family Bacteroidaceae. GenBank Accession numbers are indicated in parentheses. Sequences were aligned using CLUSTALW, and phylogenetic inferences 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 that score $\geq 95\%$ were retained. The scale bar indicates a 2% nucleotide sequence divergence.

MALDI-TOF Spectrum

MALDI-TOF spectrum of 'Bacteroides mediterraneensis' Strain Marseille-P2644^T is available at <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 LT558804.

Deposit in a Culture Collection

Strain Marseille-P2644^T was deposited in the collection de Souches de l'Unités des Rickettsies (CSUR, WDCM 875) under number P2644.

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Conflict of Interest

The authors have no conflicts of interest to declare.

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