

'*Pygmaibacter massiliensis*' sp. nov., a new bacterium isolated from the human gut of a Pygmy woman

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Abstract

This study supports the main characteristics of a new genus '*Pygmaibacter*' and a new species '*Pygmaibacter massiliensis*' strain Marseille-P3336 (CSUR P3336); that was isolated from a stool sample of a healthy 47-year-old Pygmy woman.

The Institut Fédératif de Recherche ethics committee, gave approval for this study under the number 09-022. Samples were collected for microbial content description as part of the human microbiome description by culturomics.

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Keywords: Culturomics, emerging bacteria, gut microbiota, human microbiota, *Pygmaibacter massiliensis*

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A stool sample, obtained from a healthy 47-year old Pygmy woman, was cultured in a blood culture bottle at 37°C after being diluted with phosphate-buffered saline. The culture bottle was supplemented with 5% sheep blood and 5% filtered rumen. The strain Marseille-P3336 colony was isolated at day 10 on 5% blood-enriched Columbia agar (bioMérieux, Marcy l'Etoile, France). The first identification trial of strain Marseille-P3336 by matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF-MS) using a Microflex spectrometer (Bruker Daltonics, Leipzig, Germany) failed [1,2]. Hence, a 16S rRNA gene sequencing was performed to identify our strain based on sequence similarities. A 3130-XL sequencer (Applied Biosciences, Saint Aubin, France) was used along with fD1-rP2 primers (Eurogentec, Seraing, Belgium) as previously reported [3]. Strain Marseille-P3336 exhibited a 92.38% sequence identity

with *Anaerofilum pentosovorans* (NR_029313.1), the phylogenetically closest species with standing nomenclature (Fig. 1). Colonies were smooth with a mean diameter of 0.1–0.5 mm. Bacterial cells were Gram positive bacilli, catalase and oxidase negative with a mean diameter of 1.8 µm.

As the strain Marseille-P3336 16S rRNA gene sequence diverges by >5% from the closest species with standing in nomenclature, we propose the creation of the new genus named '*Pygmaibacter*' (Pyg. maio.bac'ter N.L. masc. gen. n, '*Pygmaibacter*', for Pygmy, the population from which the samples were collected [4]). Marseille-P3336 is the type strain of the new species '*Pygmaibacter massiliensis*' gen. nov., sp. nov. (mas.il.i.en'sis. L. gen. masc. adj. *massiliensis* pertaining to Massilia, the name of the city of Marseille from antiquity, where this bacteria has been discovered).

MALDI-TOF MS spectrum accession number. The MALDI-TOF-MS spectrum of *P. massiliensis* is available online (<http://www.mediterranee-infection.com/article.php?leref=256&titre=urms-database>).

Nucleotide sequence accession number. The 16S rRNA gene sequence was deposited in GenBank under accession number LT631513.

