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# '*Millionella massiliensis*' gen. nov., sp. nov., a new bacterial species isolated from human right colon

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## Abstract

We report here the main characteristics of '*Millionella massiliensis*' strain Marseille-P3215<sup>T</sup> (= CSUR P3215), which was isolated from a human right colon liquid sample.

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**Keywords:** Culturomics, genomics, gut microbiota, '*Millionella massiliensis*', taxonomy

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In the context of the culturomics development [1] for the study of the human microbiome [2], a bacterial strain that could not be identified by our systematic matrix-assisted desorption ionization–time of flight mass spectrometry (MALDI-TOF MS) (Bruker Daltonics, Bremen, Germany) [3] was cultivated in May 2016. This strain was isolated from the right colon liquid sample [4] of a 76-year-old woman who underwent a colonoscopy as part of colonic polyp control. The patient received clear information and provided signed informed consent. The study was validated by the ethics committee of the Institut Federatif de Recherche IFR48 under number 2016-010.

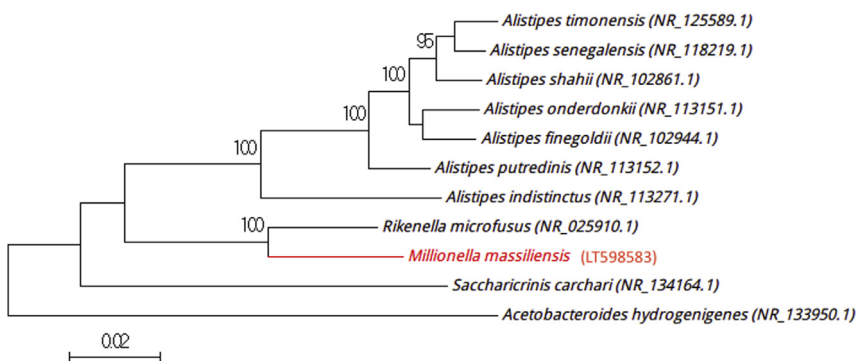
The initial growth was obtained on Columbia agar supplemented with 5% sheep's blood (bioMérieux, Marcy l'Etoile, France) after 7-day inoculation at 37°C under anaerobic atmosphere (AnaeroGen Compact; Oxoid, Thermo Scientific, Dardilly, France). Strain Marseille-P3215<sup>T</sup> was also able to grow at 45°C in anaerobic conditions. Agar-grown colonies were circular and white, with a mean diameter of 0.1 mm. Bacterial cells were Gram-negative bacilli, lanky shaped,

ranging in length from 2100 to 2900 nm and in width from 700 to 900 nm. Strain Marseille-P3215<sup>T</sup> was non-spore forming and nonmotile, and it exhibited no oxidase activity, whereas catalase was positive.

The 16S rRNA gene was sequenced using fD1-rP2 primers as previously described [5], using a 3130-XL sequencer (Applied Biosciences, Saint Aubin, France). Strain Marseille-P3215<sup>T</sup> exhibited a 94.30% sequence identity with *Rikenella microfusus* strain ATCC 29728<sup>T</sup> (accession no. L16498), the phylogenetically closest species with standing in nomenclature [6] (Fig. 1), which was first isolated in 1978 from faecal and caecal specimens of animals and humans [7].

Because of a 16S rRNA sequence divergence of >5% [8] with its phylogenetically closest species with standing in nomenclature [9], we propose the creation of the new genus *Millionella* gen. nov. (Mil.li.o.nel'la, N.L. fem. n. *Millionella*, in honor of French microbiologist Matthieu Million, who was the pioneer (2010) of the culturomics revolution). *Millionella massiliensis* gen. nov., sp. nov. (mas.si.li.en'sis, L. fem. adj. *massiliensis*, from Massilia, the roman name of Marseille, where the strain was first cultivated) is classified as a member of the family *Rikenellaceae* in the phylum *Bacteroidetes*. Strain Marseille-P3215<sup>T</sup> is the type strain of the new species '*Millionella massiliensis*' gen. nov., sp. nov.

The MALDI-TOF MS spectrum of '*Millionella massiliensis*' strain Marseille-P3215<sup>T</sup> is available online (<http://www>.



**FIG. 1.** Phylogenetic tree showing position of 'Millionella massiliensis' strain Marseille-P3215<sup>T</sup> relative to other phylogenetically close neighbors. Sequences were aligned using Muscle v3.8.31 with default parameters, and phylogenetic inferences were obtained using neighbor-joining method with 1000 bootstrap replicates within MEGA6 software. Only bootstrap values >95% are shown. Scale bar represents 2% nucleotide sequence divergence.

[mediterranean-infection.com/article.php?leref=256&titre=urms-database](http://mediterranean-infection.com/article.php?leref=256&titre=urms-database)).

### Nucleotide sequence accession number

The 16S r RNA gene sequence was deposited in GenBank under accession number LT598583.

### Deposit in a culture collection

Strain Marseille-P3215<sup>T</sup> was deposited in the Collection de Souches de l'Unité des Rickettsies (CSUR, WDCM 875) under the number P3215.

### Acknowledgement

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### Conflict of Interest

None declared.

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