

'*Olsenella congonensis*' sp.nov., identified in human stool sample

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Abstract

We report the main characteristics of '*Olsenella congonensis*' strain Marseille-P3359^T (CSUR P3359), which was isolated from the stool sample of a healthy 47-year-old pygmy female.

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Marseille-P3359 exhibited a 95% sequence identity with *Olsenella scatoligenes*, the phylogenetically closest species with standing nomenclature (Fig. 1). Hence, it can be classified as a new species within the genus *Olsenella* [4]. When comparing the 16S rRNA gene sequences of the different closely related species of *Olsenella*, we found a range of similarity between 93% and 97%. Hence, we propose that strain Marseille-P3359 is a new species of the genus *Olsenella*.

The approval of the ethics committee of the Institut Fédératif de Recherche was obtained under the number 09-022 before sample collection from Congo and project start up. Samples collection and analysis were performed with the aim of describing the human gut microbiota using the culturomics approach [1].

As a first step, stool sample (1 g) was diluted with 1 mL of phosphate buffered saline then incubated in an anaerobic culture bottle, supplemented with 5% filtered rumen and 5% sheep blood, at 37°C for a 30-day follow up. At day 15 a '*Olsenella congonensis*' colony was purely isolated on 5% blood-enriched Columbia agar (bioMérieux, Marcy l'Etoile, France). The first method used for the identification of Strain Marseille-P3359 was matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS) using a Microflex spectrometer (Bruker Daltonics, Leipzig, Germany) [2]. However, identification failed and 16S rRNA gene sequencing was performed, as previously reported, for further analysis using a 3130-XL sequencer (Applied Biosciences, Saint Aubin, France) with fD1-rP2 primers (Eurogentec, Seraing, Belgium) [3]. Strain

Description of the new species '*Olsenella congonensis*'

Colonies of the strain Marseille-P3359^T were smooth with a mean diameter of 0.8–1 mm. Bacterial cells were Gram-positive bacilli, catalase and oxidase negative with a mean length of 1.08 µm. We propose the discovery of the new species '*Olsenella congonensis*' (co.ng.on.en'sis. N.L. masc. adj. *congonensis* to refer to Congo, from where the stool's donor came). Strain Marseille-P3359^T is the type strain of the new species '*Olsenella congonensis*'.

MALDI-TOF MS spectrum accession number

The MALDI-TOF MS spectrum of '*O. congonensis*' is available online (<http://www.mediterranee-infection.com/article.php?laref=256&titre=urms-database>).

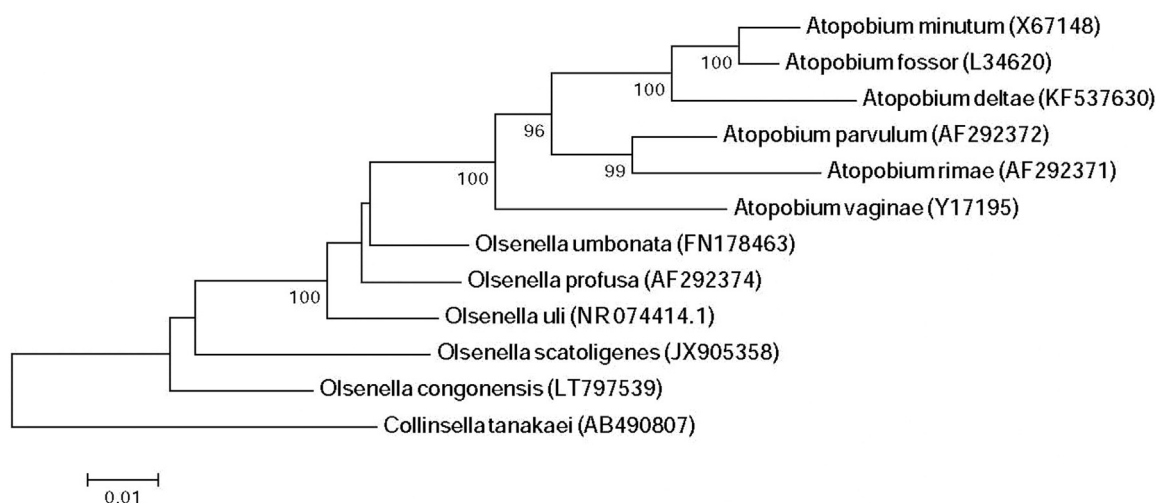


FIG. 1. Phylogenetic tree showing the branching of 'Olsenella congonensis' strain Marseille-P3359 among the other phylogenetically close neighbours. CLUSTALW and MEGA software were used for alignment and phylogenetic tree generation, respectively. The neighbour joining method was adapted with 500 bootstraps and only scores of at least 90% were kept on the nodes. The scale bar indicates a 1% nucleotide sequence divergence.

Nucleotide sequence accession number

The 16S rRNA gene sequence was deposited in GenBank under Accession number LT797539.

Deposit in a culture collection

Strain Marseille-P3359 was deposited in the Collection de Souches de l'Unité des Rickettsies (CSUR, WDCM 875) under number P3359.

Conflicts of interest

None to declare.

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