NEW SPECIES

‘Lascolabacter vaginalis’ strain KHD1, a new bacterial species cultivated from human female genital tract

K. Diop1,2, O. Medianikov1,2, P.-E. Fournier1, D. Raoult1,2,3, F. Bretelle1,3 and F. Fenollar1,2  
1) Aix-Marseille Université, Institut hospitalo-universitaire Méditerranée-infection, URMITE, UM63, CNRS 7278, IRD 198, Inserm U1095, Faculté de médecine, Marseille, France, 2) Campus International UCAD-IRD, Dakar, Senegal and 3) Department of Gynecology and Obstetrics, Gynépole, Hôpital Nord, Assistance Publique-Hôpitaux de Marseille, AMU, Aix-Marseille Université, Marseille, France

Abstract

We present the major characteristics of ‘Lascolabacter vaginalis’ strain KHD1 (= CSUR P0109 = DSM 101752), a new member of the family Prevotellaceae that was cultivated from a vaginal sample of a 33-year-old woman with bacterial vaginosis. © 2016 The Author(s). Published by Elsevier Ltd on behalf of European Society of Clinical Microbiology and Infectious Diseases.

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As part of the study of the human microbiota thanks to the approach of microbial culturomics [1], we analysed the vaginal flora of women with bacterial vaginosis [2]. In October 2015, we isolated in the vaginal swab of a 33-year-old French woman a bacterial strain that could not be identified using matrix-assisted laser desorption-ionization time-of-flight mass spectrometry (MALDI-TOF MS) (Microflex spectrometer; Bruker Daltonics, Bremen, Germany) [3]. The study was authorized by the local ethics committee of the IFR48 (Marseille, France; agreement 09-022) and the patient gave her written consent. 

The initial growth of strain KHD1 was obtained at 37°C under anaerobic conditions after 4 days of culture on Schaedler agar enriched with sheep blood and vitamin K (BD Diagnostics, Le Pont-de-Clair, France) after 24 h of pre-incubation in a blood culture bottle (BD Diagnostics) enriched with 4 mL of rumen that was filter-sterilized through a 0.2-μm pore filter (Thermo Fisher Scientific, Villebon-sur-Yvette, France) and 3 mL of sheep blood (bioMérieux, Marcy l’Étoile, France). After 2 days of incubation at 37°C under anaerobic conditions on blood agar (bioMérieux), colonies were grey, shiny, smooth and circular with a diameter of 1.4–2 mm. Strain KHD1 is strictly anaerobic. Bacterial cells were Gram-negative rod-shaped bacilli or coccobacilli, non-motile, and non-spore-forming with a mean diameter of 0.36 μm and a mean length of 0.57 μm. Strain KHD1 exhibited positive oxidase activity but catalase was negative. The 16S rRNA gene sequence was obtained after amplification using the universal primer pair (fD1 and rp2) and a 3130-XL sequencer (Applied Biosciences, Saint-Aubin, France), as previously reported [4]. 16S rRNA gene sequence-based identification of strain KHD1 showed 90% of identity with Prevotella loeschei strain JCM 12249 (GenBank Accession number NR_113108.1), the phylogenetically closest bacterium with a validly published name (Fig. 1). As this sequence was below the 95% threshold set by Stackebrandt and Elbers to define a new genus without carrying out DNA–DNA hybridization [5], strain KHD1 was classified as the representative strain of a new genus belonging to the family Prevotellaceae in the phylum Bacteroidetes [6].

Described by Holdeman and Johnson in 1982, Prevotella loeschei is a Gram-negative rod, non-motile, and non-spore-forming, with no catalase activity [7]. This strictly anaerobic bacterium was isolated from the human oral cavity. Hallella sergens, another closely related anaerobic species, is also a Gram-negative rod, non-motile, non-spore-forming bacterium, catalase-negative, that was isolated from the human gingival crevice [8].
Strain KHD1 presents a 16S rRNA divergence of about 10% with its phylogenetically closest species [9], we propose that gene sequence strain KHD1 may be the representative strain of a novel genus named ‘Lascolabacter’ gen. nov. ‘Lascolabacter’ (La.sko.la.bac’ter N. L. masc. n. Lascola (personal name considered as a Latin word), La Scola, named after French microbiologist professor Bernard La Scola, MD; N.L. masc. n. bacter, a staff or rod; N.L. masc. n. ‘Lascolabacter’, a rod named after Bernard La Scola). Strain KHD1 is the type strain of the new species ‘Lascolabacter vaginalis’ gen. nov., sp. nov.

**MALDI-TOF MS Spectrum Accession Number**

The MALDI-TOF MS spectrum of ‘Lascolabacter vaginalis’ 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 EMBL-EBI under accession number LN998055.

**Deposit in Culture Collection**

Strain KHD1 was deposited in the ‘Collection de Souches de l’Unité des Rickettsies’ (CSUR, WDCM 875) and in the collection ‘Deutsche Sammlung von Mikroorganismen’ (DSM) under numbers P0109 and 101752, respectively.

**Conflict of Interest**

The authors have no conflicts of interest to declare.
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