Description of *'Bacillus dakarensis'* sp. nov., *'Bacillus sinesaloumensis'* sp. nov., *'Gracilibacillus timonensis'* sp. nov., *'Halobacillus massiliensis'* sp. nov., *'Lentibacillus massiliensis'* sp. nov., *'Oceanobacillus senegalensis'* sp. nov., *'Oceanobacillus timonensis'* sp. nov., *'Virgibacillus dakarensis'* sp. nov. and *'Virgibacillus marseillensis'* sp. nov., nine halophilic new species isolated from human stool

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Abstract

We report the main characteristics of *'Bacillus dakarensis'* P3515^T sp. nov., *'Bacillus sinesaloumensis'* P3516^T sp. nov., *'Gracilibacillus timonensis'* P2481^T sp. nov., *'Halobacillus massiliensis'* P3554^T sp. nov., *'Lentibacillus massiliensis'* P3089^T sp. nov., *'Oceanobacillus senegalensis'* P3587^T sp. nov., *'Oceanobacillus timonensis'* P3532^T sp. nov., *'Virgibacillus dakarensis'* P3469^T sp. nov. and *'Virgibacillus marseillensis'* P3610^T sp. nov., that were isolated in 2016 from salty stool samples (≥1.7% NaCl) from healthy Senegalese living at Dielmo and N'diop, two villages in Senegal.

Keywords: Culturomics, halophilic species, human gut microbiota, new species, taxonogenomics
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Culturomics has allowed to culture 247 new bacterial species, greatly increasing our understanding of the human gut repertoire thanks to high-throughput culture conditions with a rapid identification method of grown colonies using matrix-assisted desorption ionization–time of flight mass spectrometry (MALDI-TOF MS) [1]. As a part of the culturomics approach, we isolated in 2016 from stool samples from healthy patients from Senegal nine bacteria that could not be identified by our MALDI-TOF MS screening on a Microflex spectrometer (Bruker Daltonics, Bremen, Germany) [2]. The study was approved by the ethics committee of the Institut Hospitalo-Universitaire Méditerranée Infection under number 2016-011, and all patients provided written informed consent.

The salinity of the stool specimens was measured by a salinity refractometer (Thermo Scientific, Villebon-sur-Yvette, France). One gram of each stool specimen was diluted in 10 mL of distilled water and centrifuged for 10 minutes at 5000*g*. Then 100 µL of supernatant was deposited in the refractometer, and the result were directly displayed on the screen (in ‰) and then reported (in % NaCl).

Stool samples were inoculated in an aerobic blood culture bottles (Becton Dickinson, Le Pont-de-Claix, France) including an halophilic medium prepared in modifying a Columbia broth medium (Sigma-Aldrich, Saint-Quentin-Fallavier, France) by adding (per litre: 1% (w/v) $MgSO_4$, 0.1% (w/v) $MgCl_2$, 0.4% (w/v) KCl, 0.1% (w/v) $CaCl_2$, 0.05% (w/v) $NaHCO_3$, 0.2% (w/v) of glucose, 0.5% (w/v) of yeast extract (Becton Dickinson), and from 10 to 15% (w/v) NaCl according to the required salinity

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