

**Supplementary material**

***Lysinibacillus agricola* sp. nov. isolated from soil**

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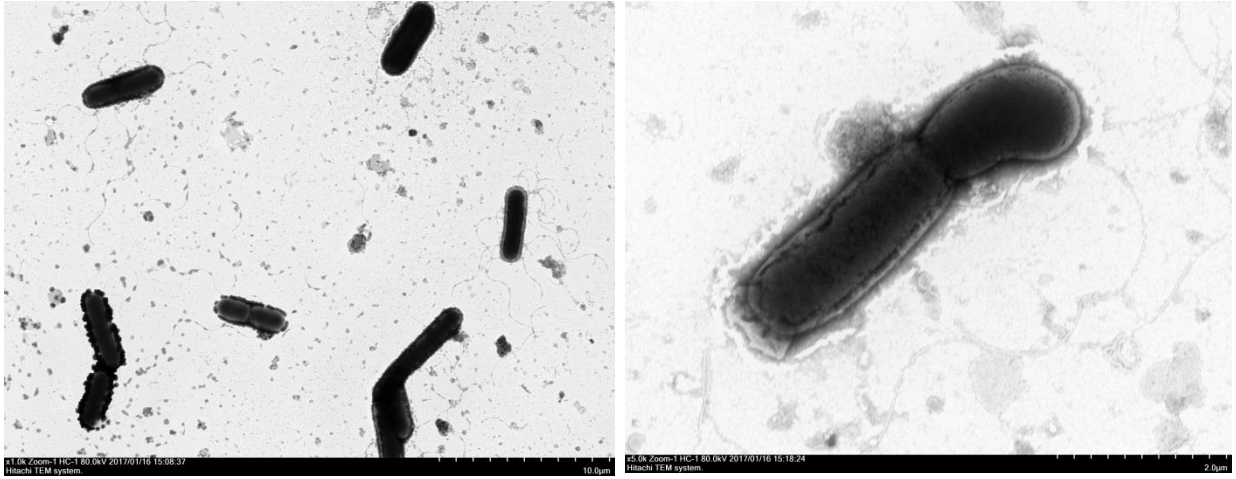
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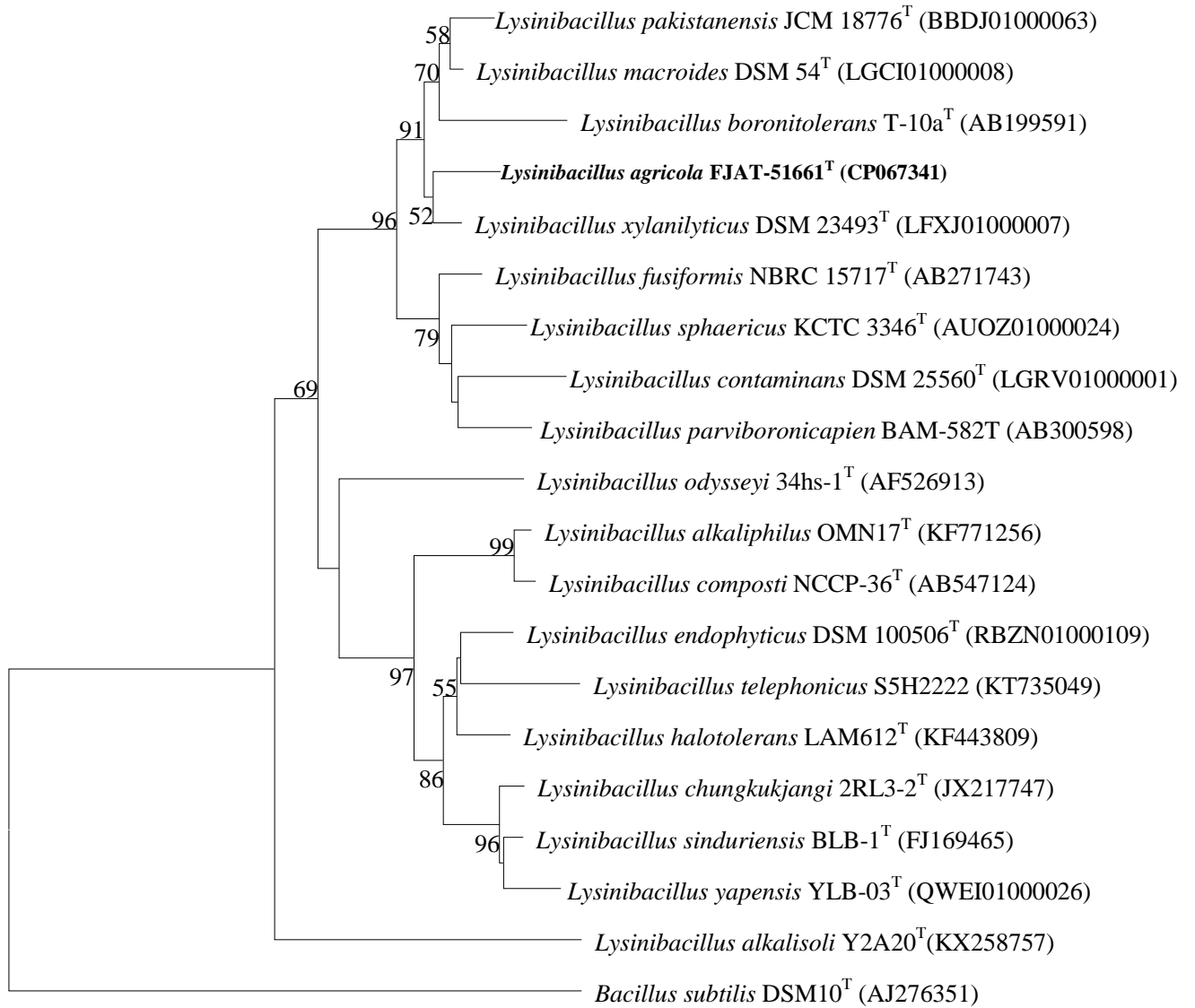
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**Subject category:** New Taxa-Firmicutes and Related Organisms

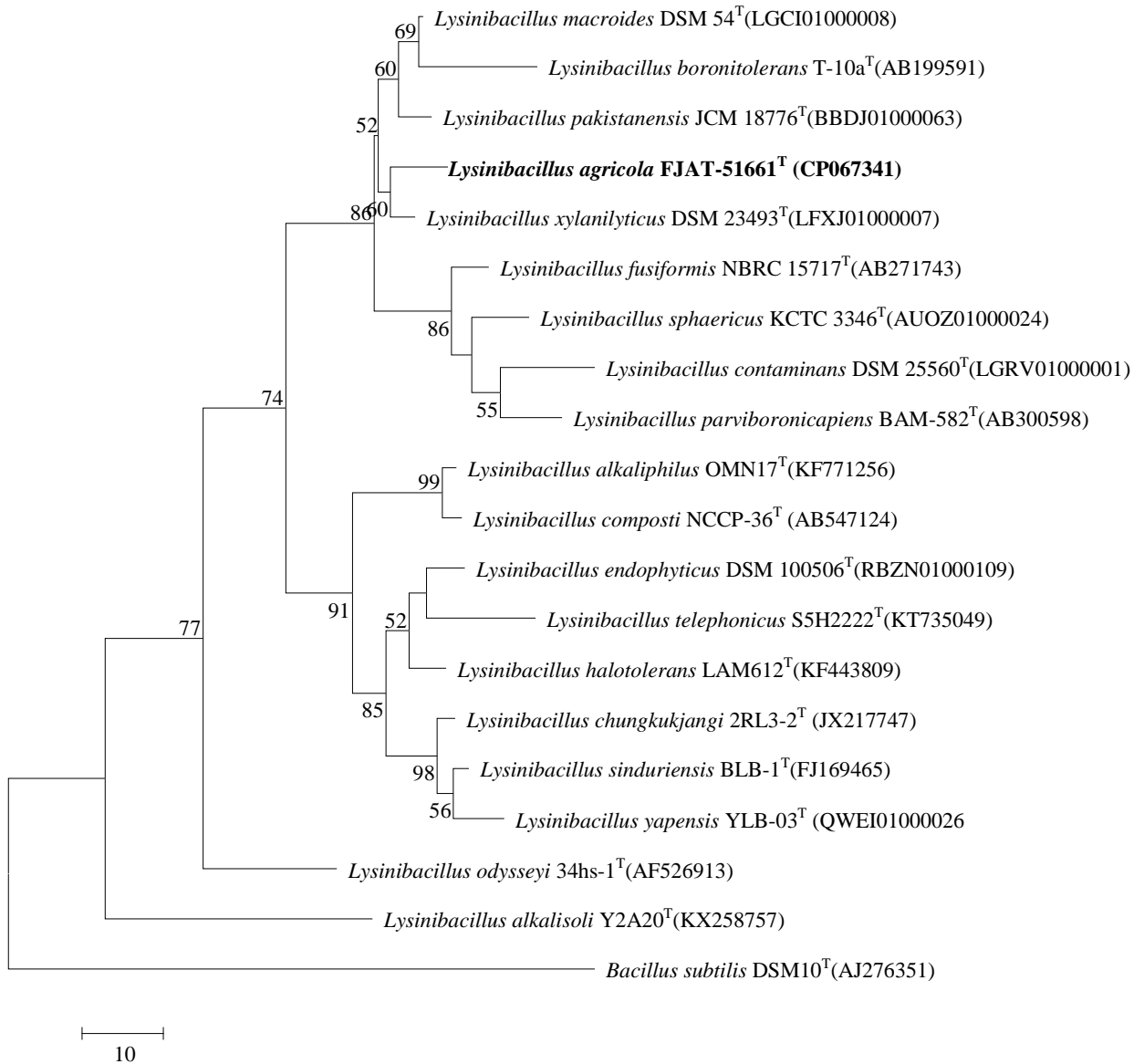
**Running title:** *Lysinibacillus agricola* sp. nov.



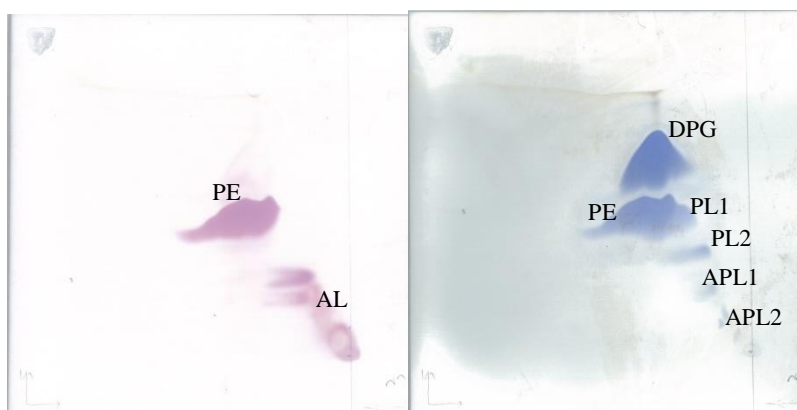
**Fig. S1** Transmission electron micrograph of cells photos of strain FJAT-51161<sup>T</sup> grown on LB medium for 2 days at 30 °C.



**Fig. S2** Phylogenetic analysis of strain FJAT-51161<sup>T</sup> with other closely related members based on 16S rRNA gene sequences available (accession numbers are given in parentheses). Multiple alignments, distance calculations (distance options according to Kimura 2-parameter method) and clustering with the neighbour-joining method was performed by using the software package MEGA version 7 (Kumaret al., 2016). Bootstrap values based on 1000 replications are listed as percentages at the branching points. Bar, 0.01 nucleotide substitutions per nucleotide position.



**Fig. S3** Phylogenetic analysis of strain FJAT-51161<sup>T</sup> with other closely related members based on 16S rRNA gene sequences (accession numbers are given in parentheses). Multiple alignments, distance calculations (distance options according to the Subtree-Pruning-Regrafting (SPR) algorithm) and clustering with the Maximum Parsimony method was performed by using the software package MEGA version 7 (Kumar et al., 2016). Bootstrap values based on 1000 replications are listed as percentages at the branching points. Bar, 10 nucleotide substitutions per nucleotide position.



**Fig. S4.** Two-dimensional TLC of polar lipids of strain FJAT-51661<sup>T</sup> after spraying with molybdenum blue (Sigma). Chloroform/methanol/water (65:25:4, by vol.) was used in the first direction (1), followed by chloroform/acetic acid/methanol/water (80:15:12:4, by vol.) in the second direction (2). Abbreviations: APL1-2, unknown aminophospholipids; DPG, diphosphatidylglycerol; PE, phosphatidylethanolamine; PL 1-2, unknown phospholipids; AL, unknown aminolipid.