Online Supplementary Material to

Comparative genomic analysis of *Periweissella* and the characterization of novel motile species

Nanzhen Qiao, Julia Bechtner, Margo Cnockaert, Eliza Depoorter, Cristian Díaz-Muñoz, Peter Vandamme, Luc De Vuyst, Michael G. Gänzle

Figure S1. Box plot of the intra-genus and inter-genus average amino acid identity of core proteins (cAAI) values in the genus *Periweissella* and *Weissella*.

Figure S2. Heatmap of the presence and absence of 45 flagellar-related genes in motile *Lactobacillaceae* strains. Red indicates the gene is present and white indicates the gene is absent in the strains. Strains used for the graph are provided in the Supplementary Table S4.

Supplementary Tables provided as excel files:

Table S1. Genomes used for the IQ-TREE phylogenetic analysis of species previously classified in the *Leuconostocaceae* with *Lactiplantibacillus plantarum* and type species of each of the heterofermentative rod-shaped lactobacilli as the outgroup.

Table S2. Additional genomes of *Furfurilactobacillus* species used for Roary and Scoary analysis.

 Because the genus includes only three genome sequences of type strains, all genomes available on

 NCBI were used in the analysis.

Table S3. Genes used for analysis of genus-level metabolic traits of Lactobacillaceae.

Table S4. Genomes of *Lactobacillaceae* which were used for the BLAST analysis but are not shown in Tables S1 and S2.

Table S5. Strains and genomes used for the identification of flagellar-related genes by BLASTp.

Table S6. Pairwise comparison of average amino acid identity (AAI) values of heterofermentative

 Lactobacillaceae and the outgroup.

Table S7. Pairwise comparison of average amino acid identity of core proteins (cAAI) values of heterofermentative *Lactobacillaceae* and the outgroup.

Table S8. Preliminary screened results from Roary and Scoary between the group of *Periweissella* and *Furfurilactobacillus*.

Table S9. Preliminary screened results from Roary and Scoary between the group of *Periweissella* and *Weissella*.

Figure S1

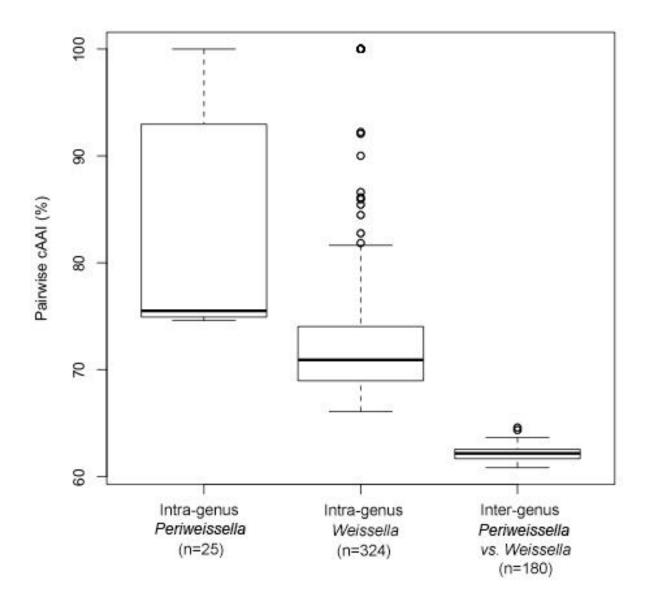


Figure S2

Periweissella beninensis Periweissella fabalis Periweissella fabaria Periweissella ghanensis Latilactobacillus curvatus Liquorilactobacillus sucicola Liquorilactobacillus satsumensis Liquorilactobacillus ghanensis Liquorilactobacillus ghanensis Ligilactobacillus ruminis

