Supplementary Materials

Supplementary Material 1:

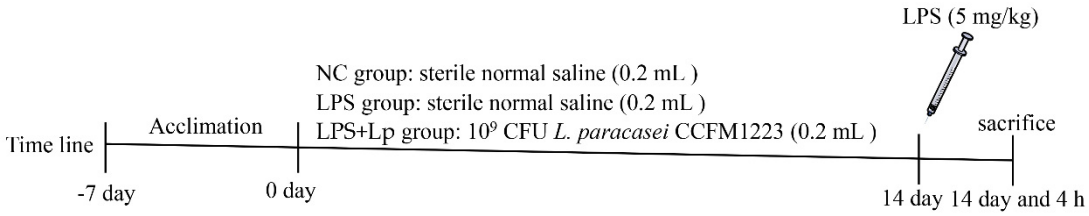

Figure S1. Animal model experimental design.

Supplementary Material 2

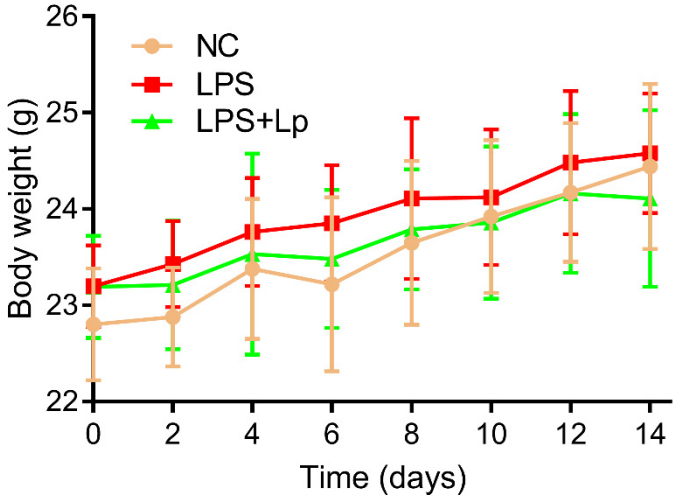

Figure S2 Effect of *L. paracasei* CCFM1223 on body weight in LPS-treated mice (n = 8).

Supplementary Material 3:

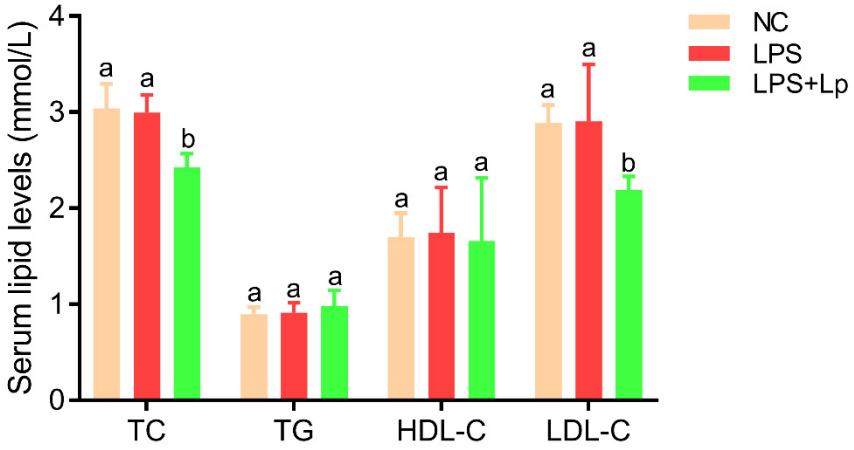

Figure S3 Effect of *L. paracasei* CCFM1223 on the serum TC, TG, HDL-C, and LDL-C levels in LPS-treated mice (n = 8). Values with different letters are significantly different ($p < 0.05$).

Supplementary Material 4:

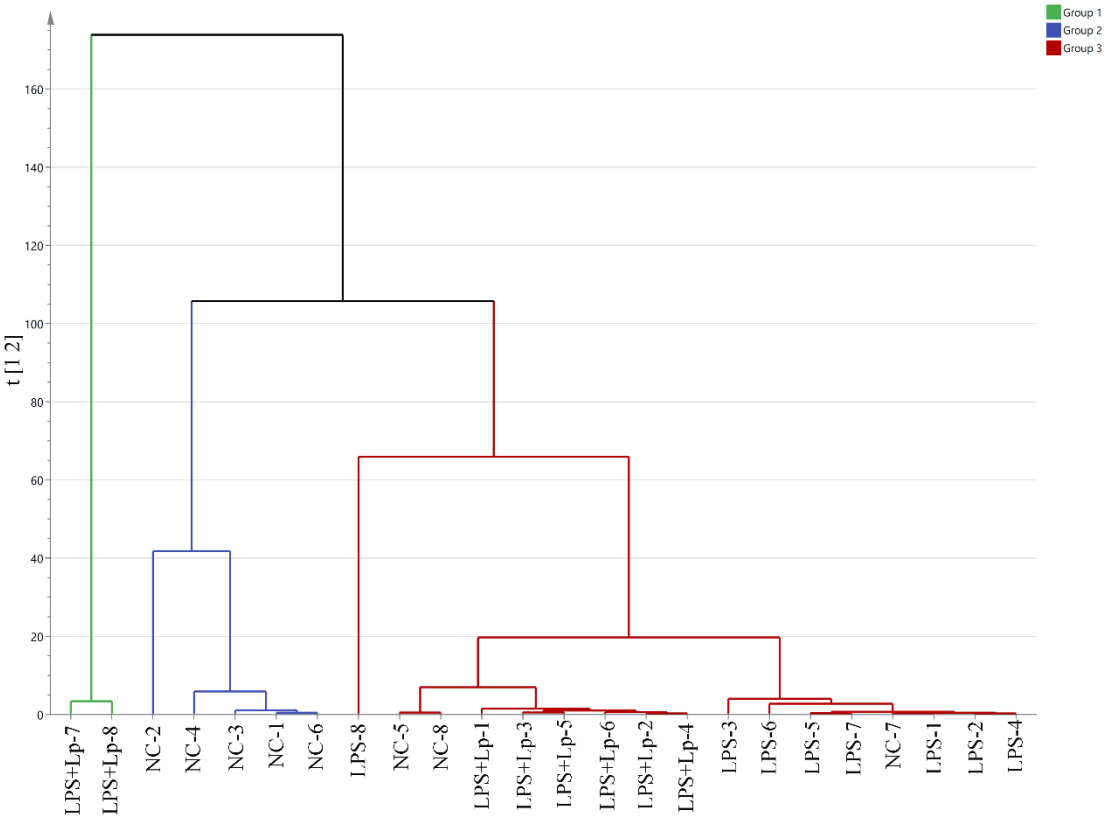

Figure S4 Hierarchical cluster analysis based on the genus level.

Supplementary Material 5：

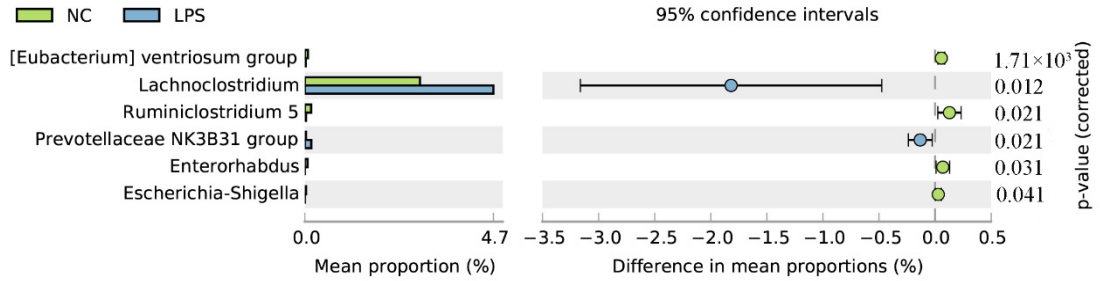

Figure S5 Extended error bar plot identifying the intestinal microbiota of significant differences between NC and LPS groups.

Supplementary Material 6:

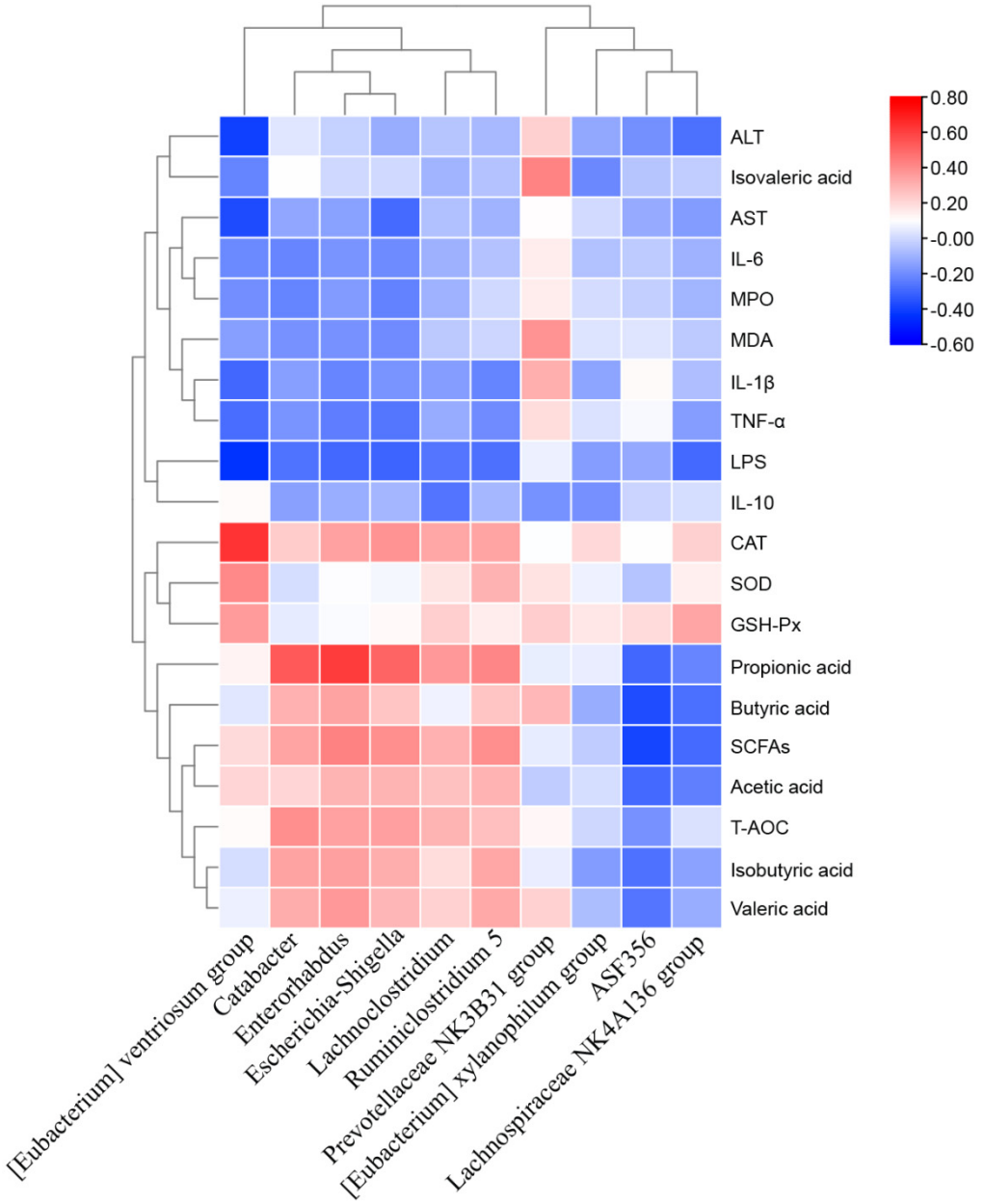

Figure S6 Heatmap of Spearman's correlation analysis between the key intestinal bacterial phylotypes and parameters of ALI.

Supplementary Material 7：

Table S1 Primer sequences for quantitative real-time PCR of hepatic genes.

Primers	Forward Sequences (5′→3′)	Reverse Sequences (5′→3′)
Tlr4	GGCAGCAGGTGGAATTGTAT	AGGCCCCAGAGTTTTGTTCT
Tlr9	CTCCAACCGTATCCACCACC	GAGAAGTGCAGGGGGCTAAG
Nfr2	CCTCCGCTGCCATCAGTCAGT	TCGGCTGGGACTCGTGTTCA
Tak1	TCAGCACGTTGATCGTTGGT	TCCATCTGGGCTGGTTAGGA
Iκ-Bα	ACCAACCAGCCAGAAATCG	TCACAGGCAAGGTGTAGAGGG
Nf-kβ	CGCCCCTTATCGACCACC	CCTTCTCCCAAGAGTCGTCCA
Nlrp3	CCCTTTATTTGTACCCAAGGCT	CGGGCGGGTAATCTTCCAAA
β-actin	GCACCACACCTTCTACAATG	TGCTTGCTGATCCACATCTG