Supplementary material

Screening of *Lactobacillus salivarius* strains from the feces of Chinese populations and the evaluation of their effects against intestinal inflammation in mice

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Figures

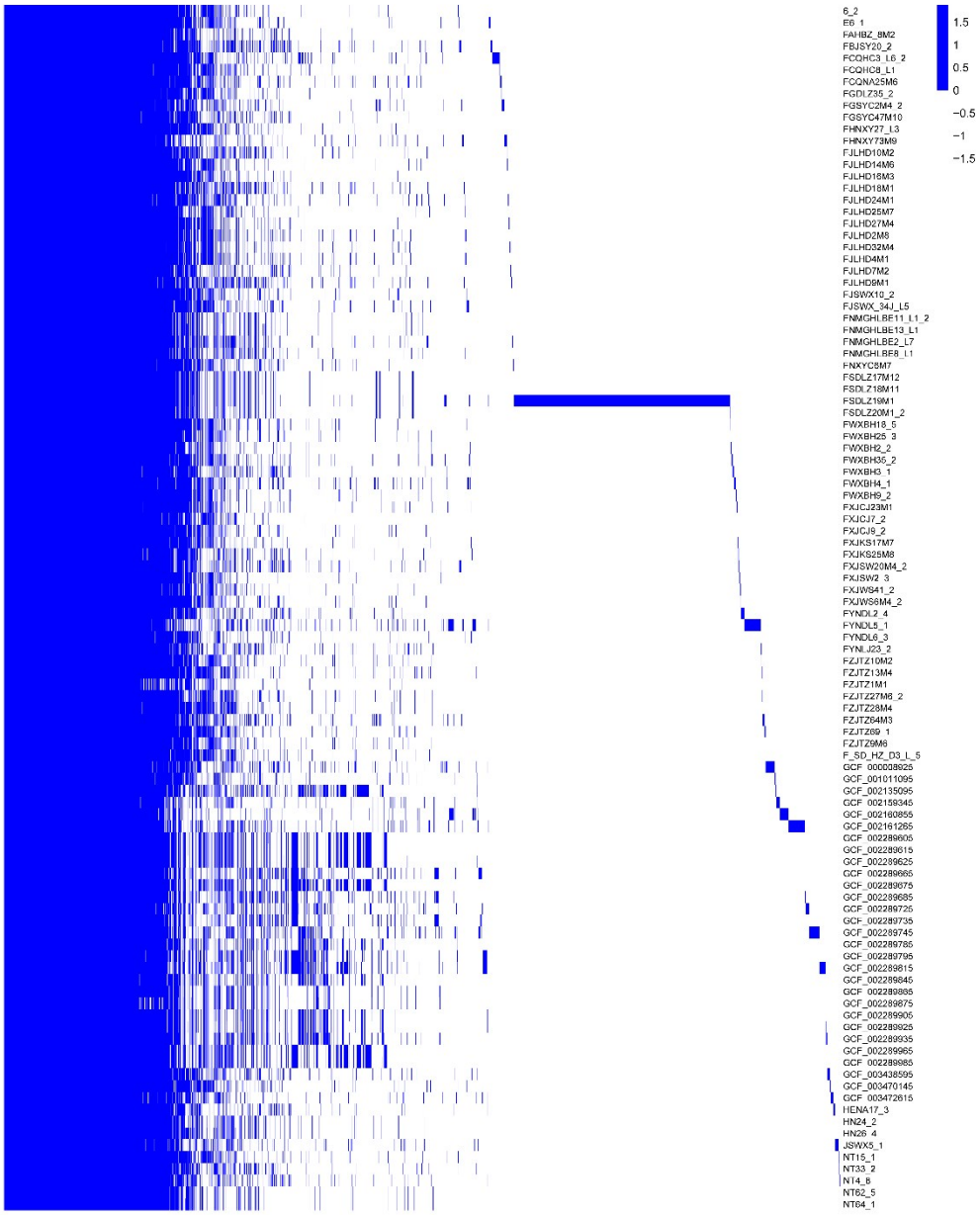

Fig. S1. Gene presence and absence among 102 *L. salivarius* strains.

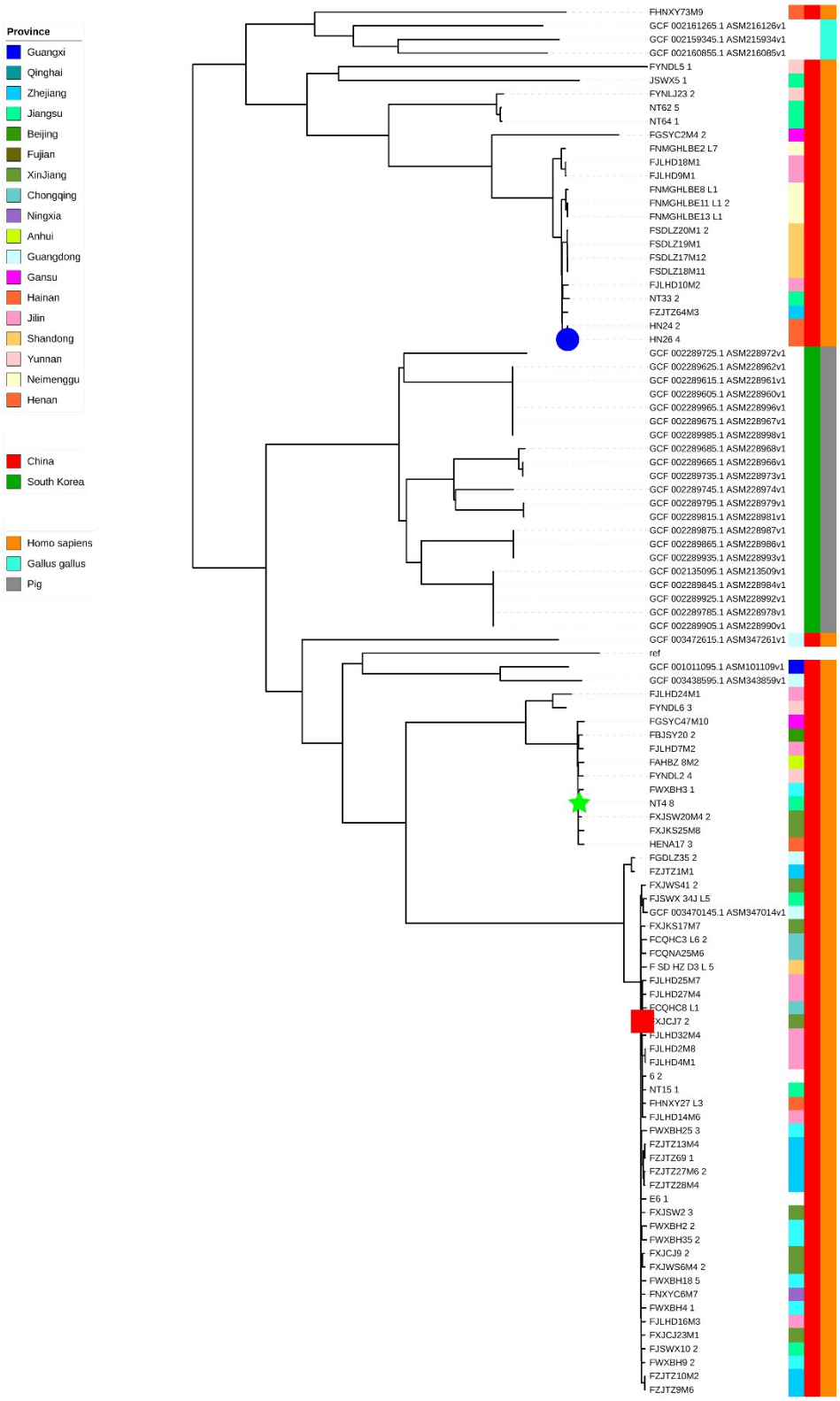

Fig. S2. The phylogenetic tree of *L. salivarius* constructed by neighbor-joining method based on the bi-SNPs in the core-genome of 102 strains. The three strains selected for the subsequent animal experiment were marked on the corresponding clades.

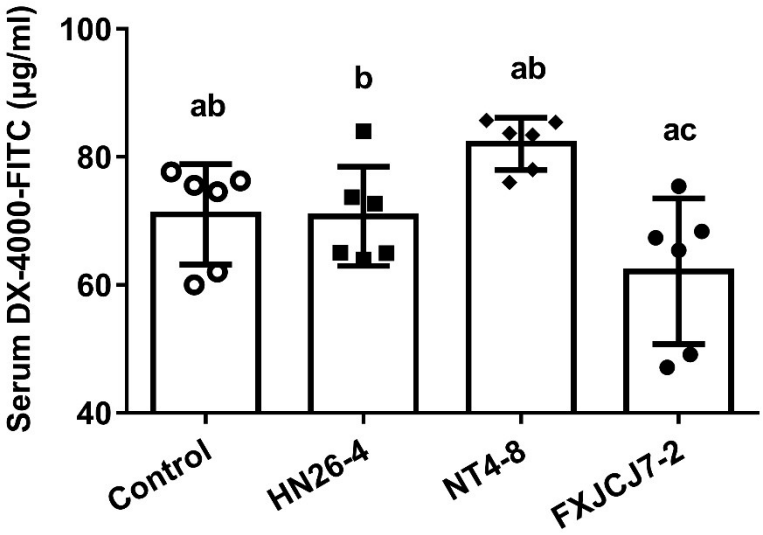

Fig. S3. Effects of *L. salivarius* administration on intestinal permeability of mice, as expressed by the alterations in the DX-4000-FITC levels in the serum. Significant differences ($P < 0.05$) between groups are indicated with different letters (a–c) above the bars. Values are mean ± SD values of six mice per group.

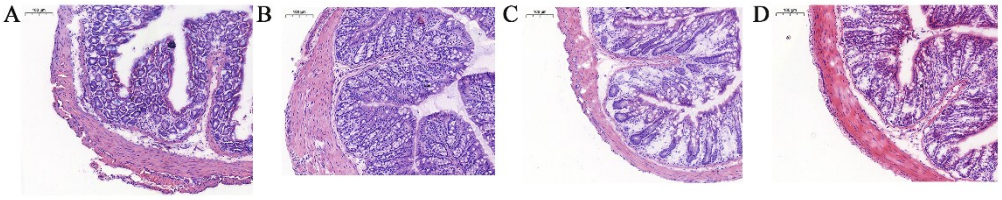

Fig. S4. Representative photomicrographs of colonic tissue of mice (H&E staining; magnifications, ×10). (A) Control group. (B) HN26-4 group. (C) NT4-8 group. (D) FXJCJ7-2 group.

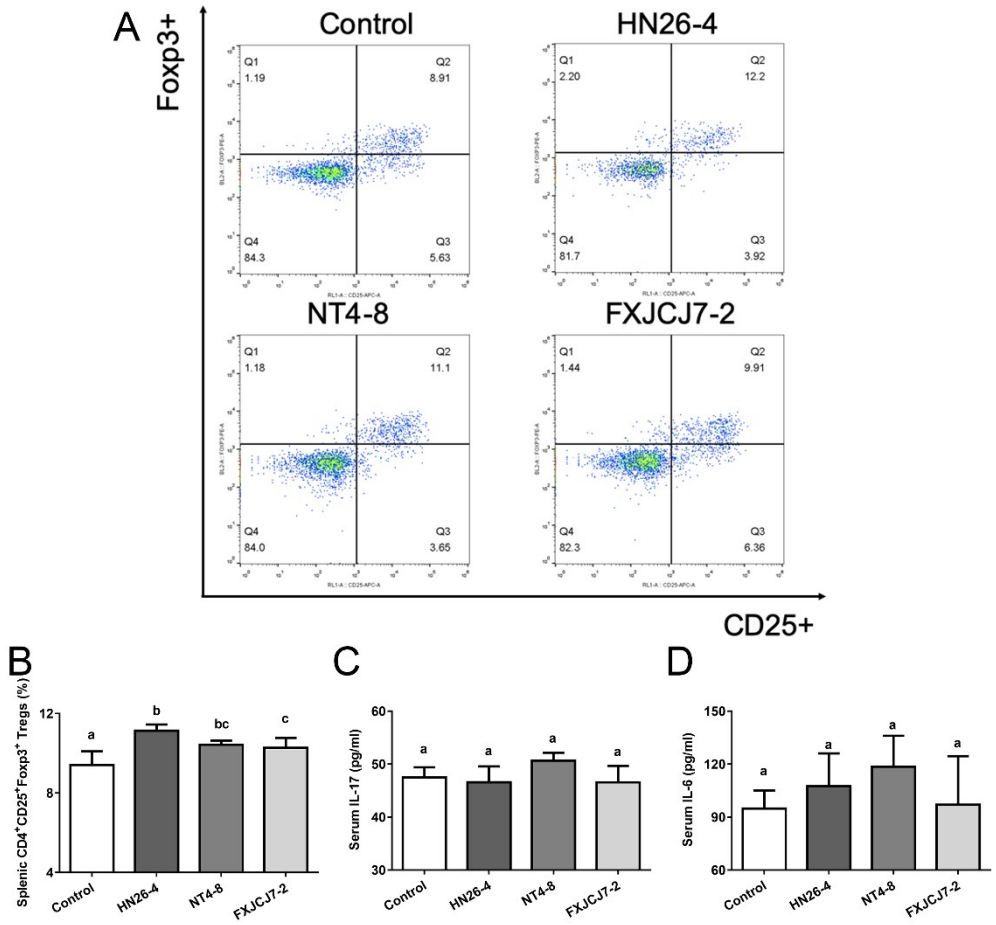

Fig. S5. Effects of *L. salivarius* administration on Treg/Th-17 balance of mice. (A) Representative histogram of flow cytometric analysis for splenic Tregs. (B) Percentages of splenic Tregs. (C) Levels of serum IL-17. (D) Levels of serum IL-6. Significant differences ($P < 0.05$) between groups are indicated with different letters above the bars. Values are mean ± SD values of six mice per group.

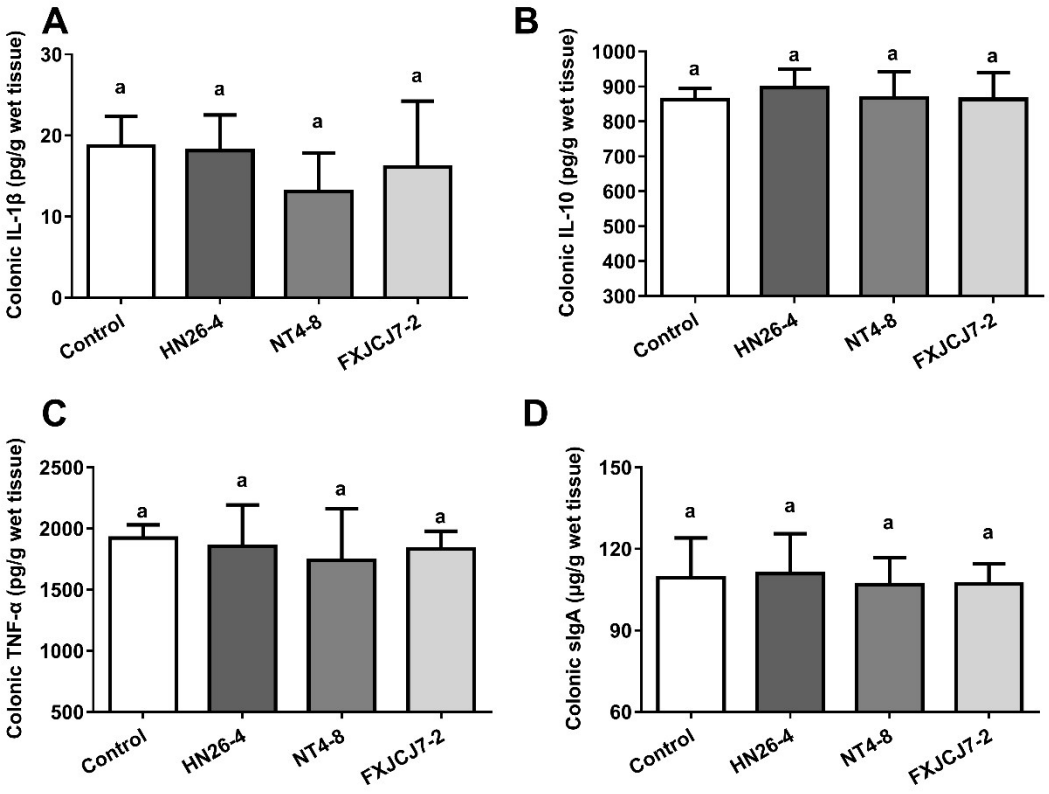

Fig. S6. Effects of *L. salivarius* administration on the levels of immunomodulatory indicators in the colon of mice. (A) Levels of IL-1β. (B) Levels of IL-10. (C) Levels of TNF-α. (D) Levels of sIgA. Significant differences ($P < 0.05$) between groups are indicated with different letters above the bars. Values are mean ± SD values of six mice per group.

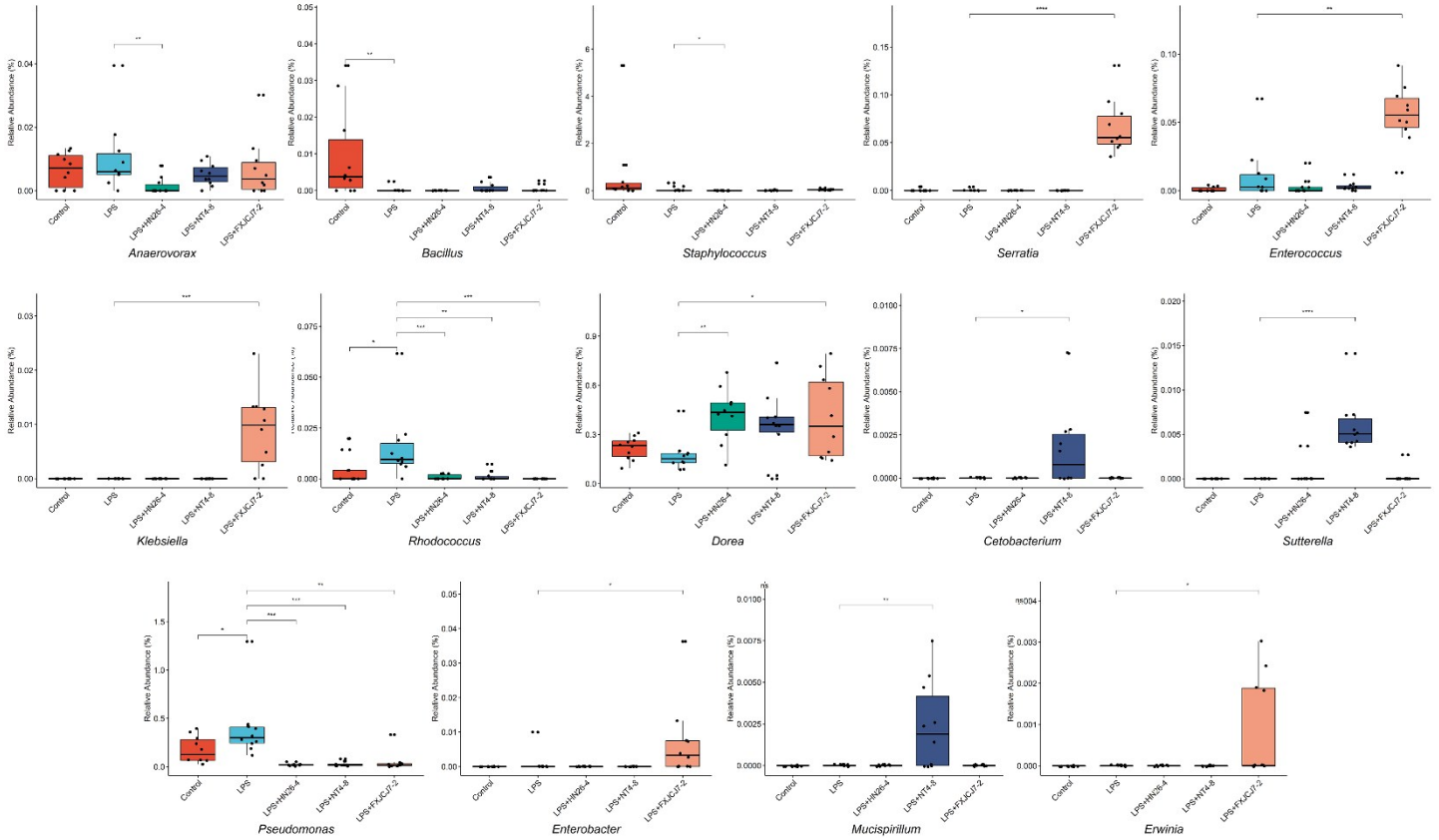

Fig. S7. Other microbial genera whose relative abundance values were significantly altered by *L. salivarius* administration. Values are mean ± SD values of ten mice per group. *, **, and *** indicate significant differences ($P < 0.05$, $P < 0.01$, and $P < 0.001$, respectively) between groups. n.s. indicates no significant differences ($P > 0.05$) between groups.

Tables

Table S1 Basic information of 29 *Lactobacillus salivarius* strains recorded in NCBI database

Strain	Assembly No.	Size (Mb)	GC%	Genes	Level	Location	Host	Isolation source
Ren	GCA_001011095.1	1.97836	33.0757	1990	Complete Genome	Guangxi, China	Homo sapiens	Feces
KLW001	GCA_002135095.1	2.32671	33	2360	Contig	South Korea	Pig	Porcine feces
An63	GCA_002159345.1	1.8076	32.7	1774	Contig	N/A	Gallus gallus	Caecum
An128	GCA_002160855.1	1.88402	32.7	1857	Contig	N/A	Gallus gallus	Caecum
An84	GCA_002161265.1	2.09004	32.7	2078	Contig	N/A	Gallus gallus	Caecum
KLA003	GCA_002289605.1	2.26392	32.8	2352	Contig	South Korea	Pig	Porcine feces
KLA002	GCA_002289615.1	2.25711	32.8	2321	Contig	South Korea	Pig	Porcine feces
KLA004	GCA_002289625.1	2.26601	32.8	2328	Contig	South Korea	Pig	Porcine feces
KLF002	GCA_002289665.1	2.17667	32.8	2233	Contig	South Korea	Pig	Porcine feces
KLA006	GCA_002289675.1	2.3669	32.9	2432	Contig	South Korea	Pig	Porcine feces
KLF003	GCA_002289685.1	2.20692	32.7	2287	Contig	South Korea	Pig	Porcine feces
KLF005	GCA_002289725.1	2.1547	32.7	2184	Contig	South Korea	Pig	Porcine feces
KLF004	GCA_002289735.1	2.1157	32.7	2205	Contig	South Korea	Pig	Porcine feces
KLF007	GCA_002289745.1	2.22216	32.9	2254	Contig	South Korea	Pig	Porcine feces
KLW002	GCA_002289785.1	2.0913	32.8	2095	Contig	South Korea	Pig	Porcine feces
KLW004	GCA_002289795.1	2.33817	32.8	2361	Contig	South Korea	Pig	Porcine feces
KLW003	GCA_002289815.1	2.36801	32.9	2406	Contig	South Korea	Pig	Porcine feces
KLW005	GCA_002289845.1	2.07512	32.8	2096	Contig	South Korea	Pig	Porcine feces

KLW006	GCA_002289865.1	2.03485	32.7	2003	Contig	South Korea	Pig	Porcine feces
KLW007	GCA_002289875.1	1.96532	32.8	1955	Contig	South Korea	Pig	Porcine feces
KLW008	GCA_002289905.1	2.13784	32.9	2130	Contig	South Korea	Pig	Porcine feces
KLW009	GCA_002289925.1	2.07127	32.9	2088	Contig	South Korea	Pig	Porcine feces
KLW010	GCA_002289935.1	2.38939	32.7	2392	Contig	South Korea	Pig	Porcine feces
KLA005	GCA_002289965.1	2.25857	32.8	2310	Contig	South Korea	Pig	Porcine feces
KLA001	GCA_002289985.1	2.26806	32.8	2338	Contig	South Korea	Pig	Porcine feces
OM08-20	GCA_003438595.1	2.01106	32.8	2070	Scaffold	Shenzhen, China	Homo sapiens	Feces
AM25-8	GCA_003470145.1	1.96949	32.8	1990	Scaffold	Shenzhen, China	Homo sapiens	Feces
AM09-40	GCA_003472615.1	1.88884	32.8	1868	Scaffold	Shenzhen, China	Homo sapiens	Feces
UCC118 (reference)	GCA_000008925.1	2.13398	33.0066	2182	Complete Genome	N/A	N/A	N/A

Table S2 Concentration of SCFAs in the colonic contents of mice

SCFAs (μmol/g)	Control	LPS	LPS+HN26-4	LPS+NT4-8	LPS+FXJCJ7-2
Acetic acid	60.36 ± 8.35 [a]	34.76 ± 6.97 [b]	47.22 ± 13.46 [b]	44.16 ± 8.14 [b]	67.25 ± 8.42 [a]
Propanoic acid	6.52 ± 0.45 [a]	5.49 ± 0.82 [a]	9.98 ± 0.77 [b]	9.80 ± 1.16 [b]	10.01 ± 0.62 [b]
Butanoic acid	1.13 ± 0.65 [a]	1.06 ± 0.40 [a]	1.92 ± 0.40 [b]	1.43 ± 0.29 [c]	2.57 ± 1.10 [d]
Isobutyric acid	0.77 ± 0.10 [a]	0.56 ± 0.30 [b]	1.08 ± 0.09 [c]	1.03 ± 0.16 [c]	1.28 ± 0.35 [c]
Pentanoic acid	0.92 ± 0.51 [ab]	0.71 ± 0.24 [b]	1.32 ± 0.42 [a]	1.12 ± 0.31 [a]	1.29 ± 0.38 [a]
Total SCFAs	69.69 ± 8.05 [a]	42.58 ± 7.05 [b]	61.52 ± 12.30 [a]	57.48 ± 7.82 [ab]	82.32 ± 8.52 [c]

Values are mean ± SD values with six mice in each group. The superscript letters a, b and c indicate statistically significant differences at P values of < 0.05 among groups.