

Table SI. *In vitro* cytokine response assay.

Subject	LAB	TNF- α , pg/ml	IL-1 β , pg/ml	IL-18, pg/ml	IL-8, pg/ml	IL-6, pg/ml	QICI, x10 ⁶	Ratio to NC
1	NC	3.2	0.2	118.0	475.0	4.1	0.00859	1
	<i>L. plantarum</i>	1,520.0	1,480.0	467.0	5,810.0	2,730.0	2,230	260,000
	<i>B. longum</i>	29.6	32.1	419.0	6,440.0	767.0	3.33	388
	<i>L. lactis</i> ssp. <i>lactis</i>	201.0	470.0	415.0	6,050.0	2,590.0	91.7	10,700
2	NC	1.5	0.0250 ^a	154.0	175.0	1.9	0.000530	1
	<i>L. plantarum</i>	579.0	1,230.0	373.0	5,920.0	2,580.0	612	1,150,000
	<i>B. longum</i>	4.3	4.6	376.0	4,200.0	69.3	0.451	851
	<i>L. lactis</i> ssp. <i>lactis</i>	51.7	148.0	320.0	6,030.0	2,450.0	6.02	11,400
3	NC	2.5	0.2	194.0	435.0	2.6	0.0130	1
	<i>L. plantarum</i>	755.0	1,670.0	602.0	6,020.0	2,750.0	1,660	127,000
	<i>B. longum</i>	7.0	8.7	335.0	1,810.0	97.3	0.380	29
	<i>L. lactis</i> ssp. <i>lactis</i>	51.7	187.0	409.0	5,670.0	2,540.0	8.81	677
4	NC	5.8	0.3	134.0	821.0	5.1	0.0330	1
	<i>L. plantarum</i>	2,280.0	1,720.0	347.0	5,970.0	2,590.0	3,110	94,400
	<i>B. longum</i>	259.0	273.0	361.0	6,070.0	2,570.0	60.4	1,830
	<i>L. lactis</i> ssp. <i>lactis</i>	1,060.0	1,090.0	363.0	6,060.0	2,600.0	978	29,700
5	NC	1.8	0.0250 ^a	154.0	94.4	0.9	0.000696	1
	<i>L. plantarum</i>	678.0	716.0	388.0	6,060.0	2,670.0	428	615,000
	<i>B. longum</i>	5.0	3.6	182.0	1,970.0	109.0	0.0593	85
	<i>L. lactis</i> ssp. <i>lactis</i>	101.0	208.0	336.0	5,760.0	2,580.0	15.7	22,600
6	NC	1.3	0.0250 ^a	260.0	256.0	0.8	0.00279	1
	<i>L. plantarum</i>	794.0	923.0	674.0	5,850.0	2,700.0	1,070	383,000
	<i>B. longum</i>	43.2	66.3	430.0	6,170.0	2,650.0	2.87	1,030
	<i>L. lactis</i> ssp. <i>lactis</i>	293.0	499.0	573.0	5,780.0	2,620.0	184	66,200
7	NC	3.2	1.6	234.0	414.0	5.4	0.0922	1
	<i>L. plantarum</i>	591.0	1,560.0	360.0	5,590.0	2,670.0	696	7,540
	<i>B. longum</i>	14.3	18.4	315.0	5,510.0	290.0	1.57	17
	<i>L. lactis</i> ssp. <i>lactis</i>	104.0	351.0	311.0	5,820.0	2,630.0	25.1	273
8	NC	1.3	0.0250 ^a	100.0	282.0	0.7	0.00128	1
	<i>L. plantarum</i>	170.0	738.0	274.0	5,170.0	2,390.0	74.2	58,000
	<i>B. longum</i>	4.4	3.9	226.0	2,700.0	24.9	0.415	324
	<i>L. lactis</i> ssp. <i>lactis</i>	31.2	103.0	272.0	6,030.0	1,620.0	3.26	2,550
9	NC	22.7	21.9	648.0	3,630.0	153.0	7.62	1
	<i>L. plantarum</i>	819.0	1,270.0	2,500.0	5,840.0	2,550.0	5,940	780
	<i>B. longum</i>	67.2	167.0	2,470.0	6,400.0	2,540.0	70.0	9
	<i>L. lactis</i> ssp. <i>lactis</i>	197.0	494.0	2,640.0	5,870.0	2,490.0	603	79
10	NC	4.3	1.4	2,440.0	1,370.0	10.6	1.82	1
	<i>L. plantarum</i>	80.6	1,800.0	8,740.0	6,140.0	2,620.0	2,980	1,640
	<i>B. longum</i>	68.2	64.9	3,220.0	6,670.0	2,640.0	36.1	20
	<i>L. lactis</i> ssp. <i>lactis</i>	120.0	575.0	3,500.0	5,900.0	2,590.0	551	303
11	NC	2.1	0.0250 ^a	110.0	177.0	1.0	0.00104	1
	<i>L. plantarum</i>	212.0	518.0	247.0	5,960.0	2,560.0	63.1	60,700
	<i>B. longum</i>	2.7	3.1	277.0	1,300.0	38.6	0.0759	73
	<i>L. lactis</i> ssp. <i>lactis</i>	46.1	141.0	271.0	5,850.0	2,450.0	4.21	4,050
12	NC	0.8	0.0250 ^a	116.0	74.9	0.7	0.000237	1
	<i>L. plantarum</i>	237.0	471.0	96.3	6,100.0	2,730.0	24.0	101,000
	<i>B. longum</i>	4.3	2.8	94.3	1,270.0	31.3	0.0453	191
	<i>L. lactis</i> ssp. <i>lactis</i>	38.4	86.9	66.1	5,690.0	1,790.0	0.699	2,950
13	NC	1.8	0.0250 ^a	134.0	156.0	1.0	0.000981	1
	<i>L. plantarum</i>	412.0	872.0	296.0	6,040.0	2,760.0	232	236,000
	<i>B. longum</i>	4.8	12.3	264.0	2,650.0	135.0	0.306	312
	<i>L. lactis</i> ssp. <i>lactis</i>	104.0	329.0	271.0	5,750.0	2,600.0	20.6	21,000
14	NC	1.3	0.0250 ^a	70.6	207.0	0.9	0.000514	1
	<i>L. plantarum</i>	260.0	798.0	279.0	5,640.0	2,690.0	121	236,000
	<i>B. longum</i>	3.1	1.8	186.0	1,090.0	18.3	0.0620	121
	<i>L. lactis</i> ssp. <i>lactis</i>	38.6	141.0	179.0	6,470.0	2,580.0	2.43	4,730
15	NC	2.0	0.0250 ^a	172.0	69.5	2.0	0.000302	1
	<i>L. plantarum</i>	534.0	896.0	826.0	5,910.0	2,580.0	908	3,000,000
	<i>B. longum</i>	24.9	38.6	493.0	6,500.0	1,580.0	1.95	6,440
	<i>L. lactis</i> ssp. <i>lactis</i>	226.0	634.0	658.0	6,110.0	2,590.0	223	736,000

Table SI. Continued.

Subject	LAB	TNF- α , pg/ml	IL-1 β , pg/ml	IL-18, pg/ml	IL-8, pg/ml	IL-6, pg/ml	QICI, x10 ⁶	Ratio to NC
16	NC	3.3	0.0250 ^a	168.0	219.0	0.8	0.00380	1
	<i>L. plantarum</i>	541.0	1,700.0	348.0	5,730.0	2,700.0	679	179,000
	<i>B. longum</i>	3.0	2.5	296.0	1,360.0	21.9	0.137	36
	<i>L. lactis</i> ssp. <i>lactis</i>	48.2	199.0	336.0	5,680.0	2,410.0	7.59	1,990
17	NC	2.6	0.0250 ^a	147.0	105.0	1.5	0.000674	1
	<i>L. plantarum</i>	325.0	660.0	686.0	5,960.0	2,550.0	343	509,000
	<i>B. longum</i>	18.8	33.8	536.0	6,510.0	1,080.0	2.06	3,050
	<i>L. lactis</i> ssp. <i>lactis</i>	119.0	427.0	746.0	5,730.0	2,600.0	83.3	124,000
18	NC	1.3	0.0250 ^a	258.0	260.0	1.4	0.00155	1
	<i>L. plantarum</i>	634.0	1,280.0	563.0	6,000.0	2,590.0	1,060	685,000
	<i>B. longum</i>	11.3	11.7	330.0	5,880.0	290.0	0.884	571
	<i>L. lactis</i> ssp. <i>lactis</i>	145.0	490.0	432.0	6,330.0	2,620.0	73.9	47,700
19	NC	0.9	0.0250 ^a	283.0	245.0	0.8	0.00197	1
	<i>L. plantarum</i>	764.0	932.0	410.0	6,040.0	2,590.0	681	347,000
	<i>B. longum</i>	12.9	12.5	330.0	5,750.0	381.0	0.800	407
	<i>L. lactis</i> ssp. <i>lactis</i>	181.0	272.0	353.0	5,960.0	2,480.0	41.9	21,300
20	NC	2.8	0.0250 ^a	1,880.0	57.2	2.0	0.00378	1
	<i>L. plantarum</i>	1,820.0	719.0	770.0	5,920.0	2,720.0	2,200	581,000
	<i>B. longum</i>	44.0	46.8	759.0	6,070.0	2,460.0	3.86	1,020
	<i>L. lactis</i> ssp. <i>lactis</i>	453.0	379.0	741.0	5,790.0	2,620.0	282	74,500

^aIL-1 β was undetectable; 0.5 x lower limit of detection (0.05 pg/ml) was used to calculate QICI values. NC, negative control; LAB, lactic acid bacteria; TNF, tumor necrosis factor; IL, interleukin; *L. plantarum*, *Lactobacillus plantarum*; *B. longum*, *Bifidobacterium longum*; *L. lactis* ssp. *lactis*, *Lactococcus lactis* ssp. *lactis*; QICI, Qingfei Paidu decoction-induced innate cytokine index.

Table SII. Hematological changes in *Lactobacillus plantarum*- and *Bifidobacterium longum*-administered subjects.

Hematological parameters	Reference interval	Day 0			Day 8			Day 22			Nemenyi post hoc test	
		Median	(IQR)	Median	(IQR)	Median	(IQR)	Friedman test	P-value	<i>Lactobacillus plantarum</i> (Day 0 vs. Day 8)	P-value	<i>Bifidobacterium longum</i> (Day 8 vs. Day 22)
Complete blood count												
Red blood cell count, x10 ⁴ /μl	435-555 386-492	418	(411-438)	429	(415-442)	425	(396-449)	0.384				
Hemoglobin, g/dl	13.7-16.8 11.6-14.8	13.1	(11.8-13.4)	13.2	(12.2-13.6)	12.9	(11.8-13.8)	0.896				
Hematocrit, %	40.7-50.1 35.1-44.4	39.2	(36.2-40.5)	40.1	(37.8-41.7)	39.2	(37.0-41.7)	0.337				
Mean corpuscular volume, fl	83.6-98.2	93.4	(90.7-95.9)	94.0	(91.9-96.2)	93.9	(91.2-96.9)	0.329				
Mean corpuscular hemoglobin, pg	27.5-33.2	31.2	(30.2-32.0)	30.9	(29.7-31.5)	31.0	(29.8-31.9)	0.0208 ^a				0.996
Mean corpuscular hemoglobin concentration, %	31.7-35.3	33.3	(32.4-33.9)	32.6	(32.1-33.1)	32.6	(32.0-33.5)	0.00456 ^a				0.00836 ^a
White blood cell count, number/μl	3300-8600	5,600	(4,700-6,500)	5,700	(4,500-6,200)	5,500	(4,700-6,600)	0.580				
Platelet count, x10 ⁴ /μl	15.8-34.8	28.8	(22.5-30.3)	27.8	(22.5-30.9)	26.1	(25.1-30.9)	1.00				
White blood cell differential												
Neutrophils, %	43.8-73.4	56.6	(52.4-59.8)	56.7	(52.4-61.4)	55.0	(51.2-64.2)	0.873				
Eosinophils, %	0.6-9.0	2.4	(2.0-3.0)	2.1	(1.6-3.1)	2.4	(1.7-3.2)	0.386				
Basophils, %	0.1-1.7	0.6	(0.5-0.8)	0.6	(0.5-1.1)	0.6	(0.4-1.0)	0.331				
Monocytes, %	2.3-7.5	5.8	(4.8-6.4)	5.9	(4.9-6.8)	5.4	(4.6-7.2)	0.368				
Lymphocytes, %	18.9-47.0	34.1	(28.3-38.9)	34.0	(30.0-38.5)	32.9	(28.6-38.1)	0.943				
Blood biochemistry												
Aspartate aminotransferase, U/l	13-30	21	(18-24)	20	(18-24)	21	(18-24)	0.169				
Alanine aminotransferase, U/l	10-42 7-23	16	(13-20)	15	(13-21)	16	(12-25)	0.352				
Lactate dehydrogenase, U/l	124-222	171	(152-201)	170	(152-197)	175	(153-199)	0.424				
Albumin, g/dl	4.1-5.1	4.3	(4.2-4.4)	4.4	(4.3-4.5)	4.4	(4.2-4.6)	0.185				
Urea nitrogen, mg/dl	8-20	12	(10-14)	12	(10-14)	11	(10-12)	0.713				
Ferritin, ng/ml	39-340 4-114	45	(21-81)	50	(35-74)	55	(25-75)	0.204				
C-reactive protein, mg/dl	0.00-0.14	0.02	(0.02-0.05)	0.0200	(0.00-0.07)	0.02	(0.02-0.07)	0.874				

Data are presented as the median (IQR) and were analyzed using the Friedman test followed by the Nemenyi post hoc test. ^aP<0.05. IQR, interquartile range. Upper and lower values in the reference interval column represent the male and female data, respectively. Reference interval indicates the normal range.

Table SIII. Two-tailed post hoc power analysis ($\alpha=0.05$; $n=18$).

Lactic acid bacteria	Cytokines	Day 0		Day 8		Day 22		Spearman's rank correlation coefficient	Effect size	Power
		Mean	SD	Mean	SD	Mean	SD			
<i>Lactobacillus plantarum</i>	IL-1 β , pg/ml	0.041	0.085	0.201	0.153	N/A	N/A	0.380	1.110	0.991
	IL-6, pg/ml	1.510	1.140	0.540	0.201	N/A	N/A	0.271	0.880	0.928
	QFPD-induced innate cytokine index pg ³ /ml ³	4,370	7,630	25,000	26,600	N/A	N/A	0.418	0.845	0.908
<i>Bifidobacterium longum</i>	IL-1 β , pg/ml	N/A	N/A	0.201	0.153	0.022	0.082	0.309	1.200	0.996

Spearman's rank correlation coefficients were calculated with EZR v1.53 software. SD, standard deviation; IL, interleukin; QFPD Qingfei Paidu decoction; N/A, not applicable.