



Supplementary Figure 1. Principal component analysis (PCA) of bacterial counts (Table 1 and Supplementary Table 1) determined by using 18 primers in saline-treated infected control group (Day 0: n=6 ●, Day 14: n=6 ●), BbY group (Day 0: n=6 □, Day 14: n=6 □), GOS group (Day 0: n=6 ○, Day 14: n=6 ○), BbY+GOS group (Day 0: n=6 △, Day 14: n=6 △), Antibiotics (AB)+5-FU group (n=6 ▽), AB+BbY+5-FU group (n=6 ×), AB+GOS+5-FU (n=6 ⊠), and AB+BbY+GOS+5-FU (n=6 ✱).

A: saline-treated infected control (Day 0), GOS (Day 0), AB+5-FU, AB+GOS+5-FU

B: saline-treated infected control (Day 14), GOS (Day 14)

C: BbY (Day 0), BbY+GOS (Day 0), AB+BbY+5-FU, AB+BbY+GOS+5-FU

D: BbY (Day 14), BbY+GOS (Day 14)

Supplementary Table 1

Organisms	Number of bacteria in the cecal contents (Day 14) ^{a)}			
	Antibiotics + 5-FU ^{b, c)}	Antibiotics + BbY + 5-FU ^{b, c, d)}	Antibiotics + GOS + 5-FU ^{b, c, e)}	Antibiotics + BbY+ GOS + 5-FU ^{b, c, d, e)}
Total bacteria	8.2±0.3	8.6±0.3	8.1±0.3	9.5±0.2
<i>Clostridium coccooides</i> group	6.7±0.5	6.5±0.6	6.6±0.8	6.5±0.5
<i>C. leptum</i> subgroup	6.2±0.3	6.0±0.4	6.0±0.3	6.2±0.5
<i>Bacteroides fragilis</i> group	6.5±0.4	6.4±0.5	6.3±0.1	6.5±0.4
<i>Bifidobacterium</i>	<5.0	8.3±0.2	<5.0	9.4±0.2
<i>Atopobium</i> cluster	<5.0	<5.0	<5.0	<5.0
<i>Prevotella</i>	<5.0	<5.0	<5.0	<5.0
Total <i>Lactobacillus</i>	5.9±0.8	6.0±0.5	5.7±0.5	5.7±0.5
<i>Enterobacteriaceae</i>	<4.0	<4.0	<4.0	<4.0
<i>Enterococcus</i>	8.1±0.4	8.0±0.6	8.0±0.5	8.2±0.7
<i>Staphylococcus</i>	4.2±0.4	4.0±0.3	4.1±0.2	3.9±0.3
BbY	<2.0	8.1±0.4	<2.0	9.2±0.2
MDRAb	<2.0	<2.0	<2.0	<2.0

^{a)} The results are expressed as mean Log₁₀ cells ± SD per g of the cecal contents for 6 mice.

^{b)} The antibiotics (KM, CTM, LOM, MTN, and IPM) were given to mice from Day -7 until Day 14.

^{c)} On Day 4, animals were injected intraperitoneally with 5-FU at a dose of 400 mg/kg body weight.

^{d)} BbY (2-3 x 10⁸ CFU/mouse/day) was administered to mice once daily from Day -7 until Day 14.

^{e)} GOS (10 mg/mouse/day) was administered to mice once daily from Day -7 until Day 14.