Electronic Supplementary Material (ESI) for Food & Function. This journal is © The Royal Society of Chemistry 2022

Supplementary materials

Table S1 Screening of high acetic acid producing strains.

	1
Strains	acetic acid concentration (g/L)
H12-4	5.62
H9-2	5.59
H4-3	5.55
H4-2	5.11
H11	5.36
H10-1	5.30
H3-R1	1.39
H3-R2	6.38

The strain was inoculated in De Man, Rogosa and Sharpe medium at 1×10^8 CFU/ml, and the concentration of acetic acid in the fermentation broth was determined after 24h.

Table S2 Screening of high propionic acid producing strains

Strains	Propionic acid concentration (g/L)
A1	3.06
A2	2.91
B1	7.38
B2	1.85
C1	2.74
C2	1.85
D1	2.97
D2	3.12

The strain was inoculated in glucose medium at 1×10^8 CFU/ml, and the concentration of propionic acid in the fermentation broth was determined after 120h.

Table S3 Screening of high butyric acid producing strains

Strains	Butyric acid concentration (g/L)	
C1-2	1.191	
C1-6	2.156	
C2-1	0.920	
C2-3	1.573	
C3-2	0.628	
C6-1	1.042	

The strain was inoculated in reinforced clostridial medium at 1×10^8 CFU/ml, and the concentration of butyric acid in the fermentation broth was determined after 24h.

Table S4 Histological grading of colitis

Score	Inflammatory infiltrate	Extent of inflammation	Crypt damage	
0	None	None	None	
1	Mild	Mucosa	1/3 damaged	
2	Moderate	Moderate Mucosa submucosa	2/3 damaged	
3	Severe	Transmural	Crypt loss but surface epithelium present	
4	_	_	Both crypt and surface epithelium lost	

Figure S1. The survival rate of three strains in simulated digestive tract conditions. H3-R2, Bifidobacterium bifidum H3-R2; B1, Propionibacterium freudenreichii B; C1-6, Clostridium butyricum C1-6. All data are expressed as mean ± SD for three independent experiments.

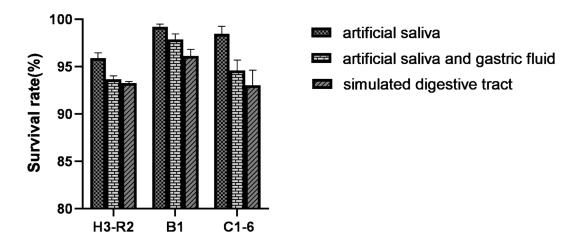


Figure S2. Histogram of microbial composition at the phylum level. NC, normal control group; DSS, DSS-induced model group; PC, positive control group; BB, *Bifidobacterium bifidum* H3-R2 group; PF, *Propionibacterium freudenreichii* B1 group; CB, *Clostridium butyricum* C1-6 group. All data are expressed as mean ± SD for four independent experiments.

