

## Supplementary materials

**Table S1 Screening of high acetic acid producing strains.**

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  $1 \times 10^8$  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  $1 \times 10^8$  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  $1 \times 10^8$  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

