

Figure S1. The body weight (A) and food intake (B) were recorded once a week at the end of the week.

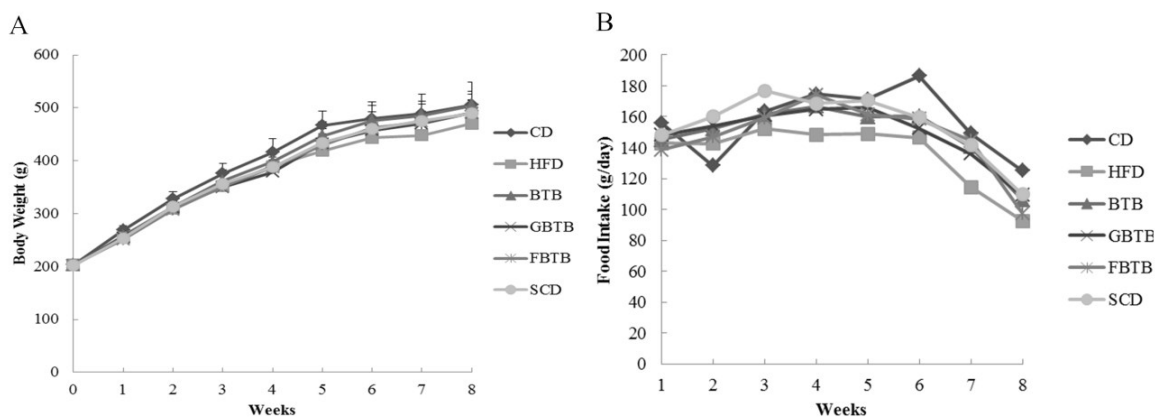


Figure S2. Alpha diversity and beta diversity of the gut microbiota from each sample. (A) Rarefaction curve, (B) Rank-Abundance curve.

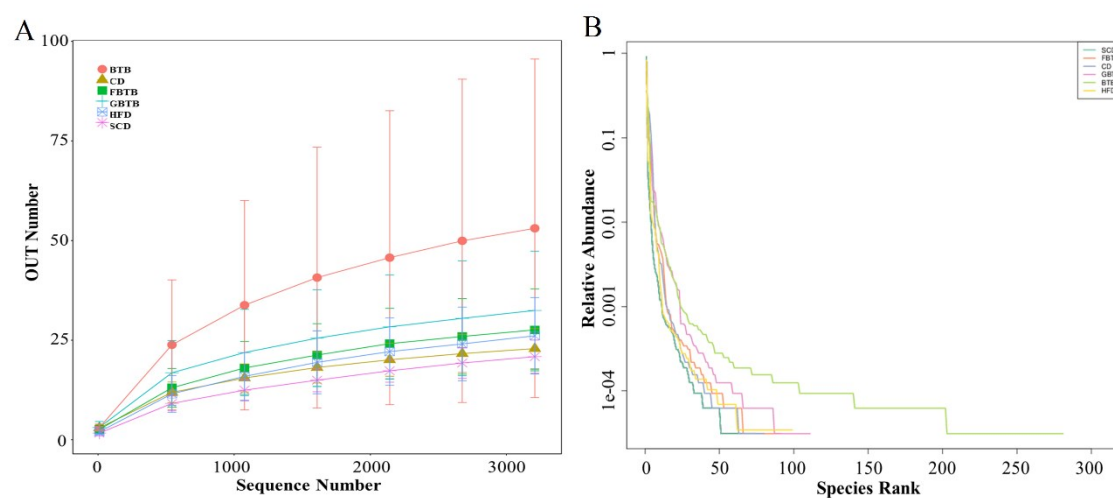


Table S1. Changes of amino acid content in BTB, GBTB, and FBTB (g/100 g).

Tested material	BTB	GBTB	FBTB
ASP	1.29	1.09	1.10
THR	0.51	0.46	0.46
SER	0.67	0.64	0.62
GLU	2.42	1.99	1.89
GLY	0.76	0.61	0.60
ALA	0.30	0.56	0.56
VAL	0.75	0.59	0.61
MET	0.18	0.15	0.14
ILE	0.55	0.50	0.52
LEU	0.88	0.81	0.83
TYR	0.19	0.29	0.30
PHE	0.63	0.59	0.61
HIS	0.35	0.30	0.31
LYS	0.61	0.71	0.69
ARG	1.04	1.04	1.00
PRO	0.55	0.41	0.41

Table S2. Concentration of SCFAs ($\mu\text{g/mL}$) in colon contents.

Groups	CD	HFD	SCD	BTB	GBTB	FBTB
Acetic acid	83.76 \pm 27.037	26.096 \pm 5.015**	5.008 \pm 1.309##	10.292 \pm 0.098#	7.498 \pm 0.627#	24.776 \pm 4.289#
Propionic acid	5.984 \pm 2.027	1.054 \pm 0.336*	0.517 \pm 0.281#	0.340 \pm 0.019#	0.406 \pm 0.180#	0.667 \pm 0.477
Isobutyric acid	0.057 \pm 0.046	0.035 \pm 0.004	ND	0.015 \pm 0.001##	0.013 \pm 0.005###	ND
Butyric acid	0.566 \pm 0.115	0.040 \pm 0.004**	0.032 \pm 0.019	0.015 \pm 0.002##	0.169 \pm 0.130	0.019 \pm 0.012#
Isovaleric acid	0.082 \pm 0.042	0.032 \pm 0.002	0.019 \pm 0.003##	0.030 \pm 0.012	0.028 \pm 0.005	0.028 \pm 0.001
Valeric acid	0.056 \pm 0.017	0.007 \pm 0.001*	0.006 \pm 0.001	0.006 \pm 0.004	0.026 \pm 0.032	0.005 \pm 0.003
Caproic acid	0.065 \pm 0.026	0.021 \pm 0.001*	0.008 \pm 0.002##	0.016 \pm 0.001#	0.011 \pm 0.003#	0.015 \pm 0.007

Values were presented as means \pm SD (n=10). ND: not detected. * p <0.05, ** p <0.01 compared to

CD group, # p <0.05, ## p <0.01, ### p <0.001 compared to HFD group.