

Supplementary Information

Table S1. Body weights (unit: g), food behaviors and organ weights (unit: g) of mice under different chronic oral treatments: high-fat diet (HFD), HFD plus 0.25% *chenpi* extract (LP), HFD plus 0.5% *chenpi* extract (HP) and normal diet (ND).

	HFD	LP	HP	ND
Initial weight	20.667±1.510 ^a	20.571±1.253 ^a	20.575±0.809 ^a	20.5±1.281 ^a
Final weight	31.661±2.662 ^a	26.36±1.164 ^b	25.464±1.478 ^b	25.6±2.267 ^b
Food intake	1.995±0.157 ^b	1.749±0.192 ^a	2.050±0.514 ^{bc}	2.183±0.417 ^c
Food efficiency	0.069±0.012 ^a	0.042±0.008 ^b	0.029±0.006 ^c	0.033±0.007 ^{bc}
Fat	2.168±0.644 ^a	1.189±0.304 ^b	0.992±0.284 ^b	1.095±0.336 ^b
Liver	1.086±0.125 ^a	1.063±0.050 ^a	1.075±0.125 ^a	0.976±0.113 ^a
Lung	0.163±0.019 ^a	0.175±0.020 ^a	0.186±0.029 ^a	0.173±0.036 ^a
Spleen	0.107±0.0202 ^a	0.087±0.021 ^a	0.102±0.022 ^a	0.1155±0.043 ^a
Kidney	0.377±0.061 ^a	0.320±0.013 ^{ab}	0.336±0.055 ^{ab}	0.306±0.035 ^b

Different letters (i.e., a, b, c) in superscript indicated the statistical significance level $p < 0.05$

Table S2. The concentrations of isobutyric acid, isovaleric acid and valeric acid in feces of mice under different chronic oral treatments: high-fat diet (HFD), HFD plus 0.25% *chenpi* extract (LP), HFD plus 0.5% *chenpi* extract (HP) and normal diet (ND).

$\mu\text{M/g}$	HFD	HFD+0.25%PMF	HFD+0.5%PMF	ND
Isobutyric acid	0.203 $\pm$ 0.013 ^a	0.326 $\pm$ 0.055 ^a	0.300 $\pm$ 0.054 ^a	0.408 $\pm$ 0.067 ^b
Isovaleric acid	0.351 $\pm$ 0.029 ^a	0.421 $\pm$ 0.038 ^{ab}	0.416 $\pm$ 0.066 ^{ab}	0.578 $\pm$ 0.102 ^b
Valeric acid	0.336 $\pm$ 0.068 ^a	0.351 $\pm$ 0.051 ^a	0.282 $\pm$ 0.049 ^a	0.625 $\pm$ 0.120 ^b

Different letters (i.e., a, b) in superscript indicated the statistical significance level $p < 0.05$.

Figure S1. The microbial structural alternation by 0.5% *chenpi* extract (HP) was analyzed by LEfSe as compared to the high fat diet (HFD) group after 5-week treatment. Statistical differences were presented if $p < 0.05$, and the threshold on the LDA score was 4.0.

