

Supplementary Materials

Figure S1 Gut microbiota was altered by polysaccharides after *in vitro* fermentation. (A) Rarefaction curves of Shannon indexes, α -diversity indices of microbial community; (B) Chao1 and Simpson and (C) classification of bacteria at the phylum level in fermentation broth from different treatments. The control group (no additional carbon source supplement); BP (bergamot polysaccharide supplement); MLP (mono-Laoxianghuang polysaccharide supplement); TLP (tri-Laoxianghuang polysaccharide supplement); PLP (penta-Laoxianghuang polysaccharide supplement).

Figure S2 The concentrations of short-chain fatty acids (SCFAs) among different groups during *in vitro* fermentation. The control group (no additional carbon source supplement); BP (bergamot polysaccharide supplement); MLP (mono-Laoxianghuang polysaccharide supplement); TLP (tri-Laoxianghuang polysaccharide supplement); PLP (penta-Laoxianghuang polysaccharide supplement).

Figure S3 Peak areas of the 20 vital metabolites with variable importance in the projection (VIP value in the top 20). $*p < 0.05$, $**p < 0.01$, $***p < 0.001$ compared to the control group., by one-way ANOVA with Tukey's post hoc test were considered. The control group (no additional carbon source supplement); BP (bergamot polysaccharide supplement); MLP (mono-Laoxianghuang polysaccharide supplement); TLP (tri-Laoxianghuang polysaccharide supplement); PLP (penta-Laoxianghuang polysaccharide supplement).

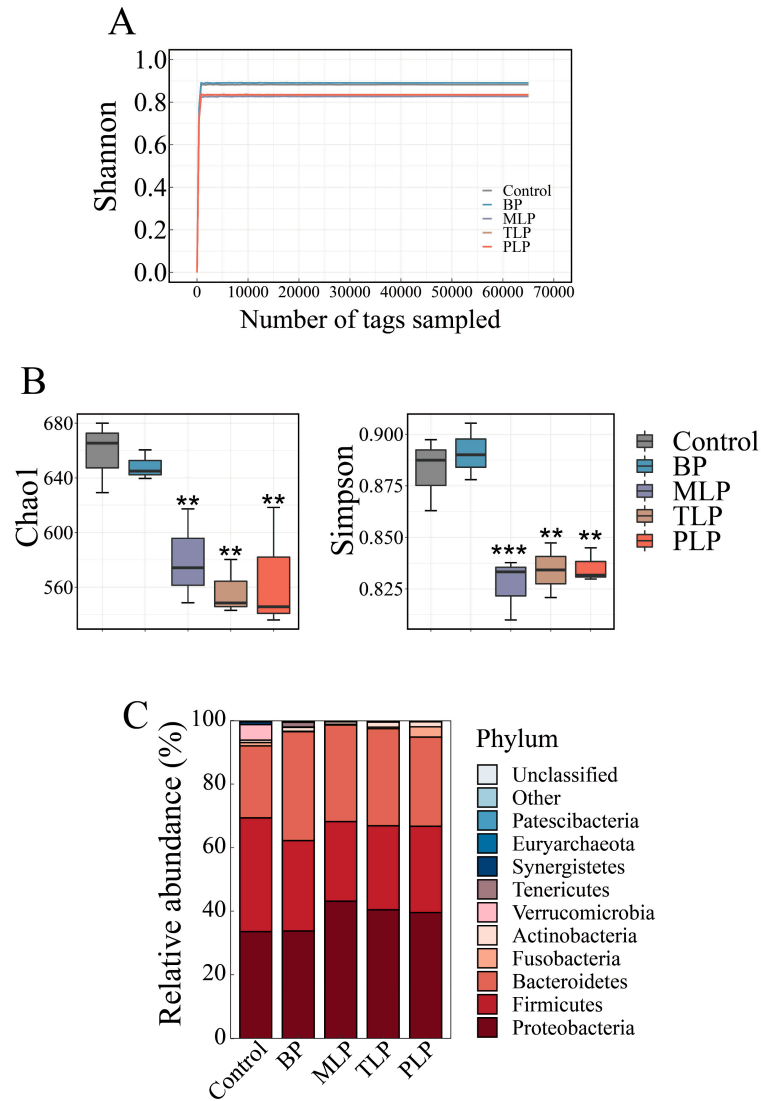


Figure S1

Gut microbiota was altered by polysaccharides after in vitro fermentation. **(A)** Rarefaction curves of Shannon indexes, α -diversity indices of microbial community; **(B)** Chao1 and Simpson and **(C)** classification of bacteria at the phylum level in fermentation broth from different treatments. The control group (no additional carbon source supplement); BP (bergamot polysaccharide supplement); MLP (mono-Laoxianghuang polysaccharide supplement); TLP (tri-Laoxianghuang polysaccharide supplement); PLP (penta-Laoxianghuang polysaccharide supplement). ** $p < 0.01$, *** $p < 0.001$

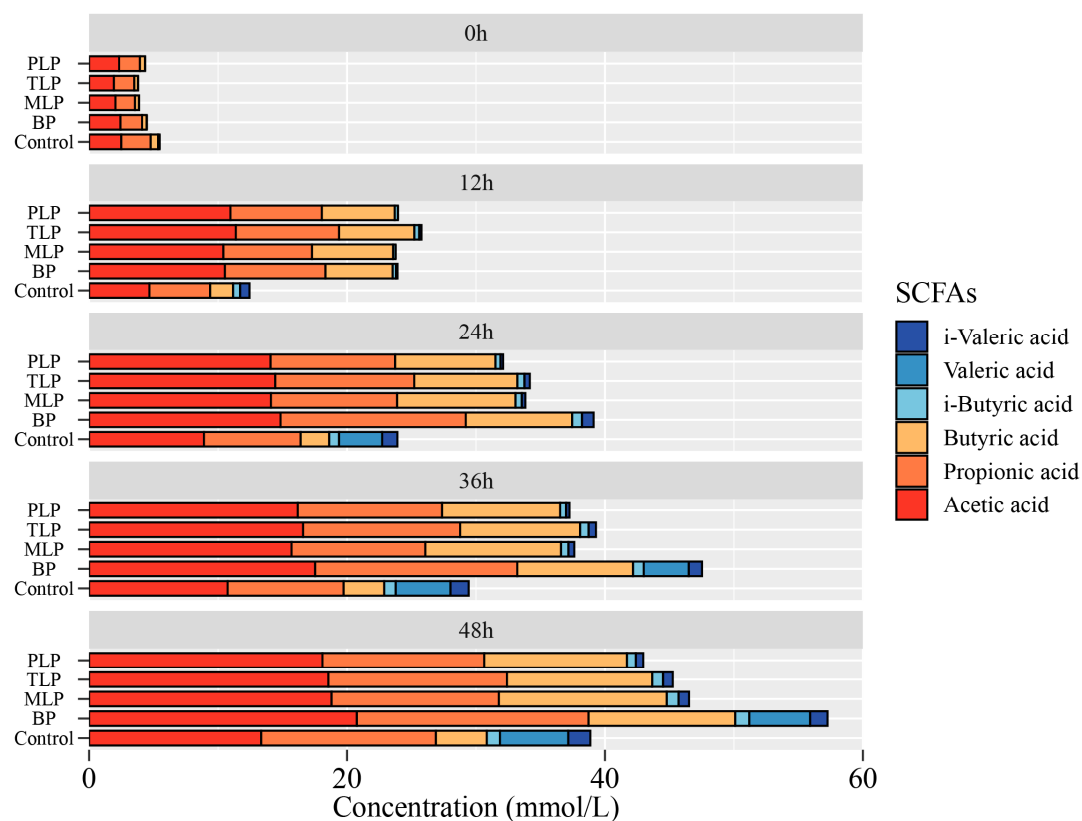


Figure S2

The concentrations of short-chain fatty acids (SCFAs) among different groups during *in vitro* fermentation. The control group (no additional carbon source supplement); BP (bergamot polysaccharide supplement); MLP (mono-Laoxianghuang polysaccharide supplement); TLP (tri-Laoxianghuang polysaccharide supplement); PLP (penta-Laoxianghuang polysaccharide supplement).

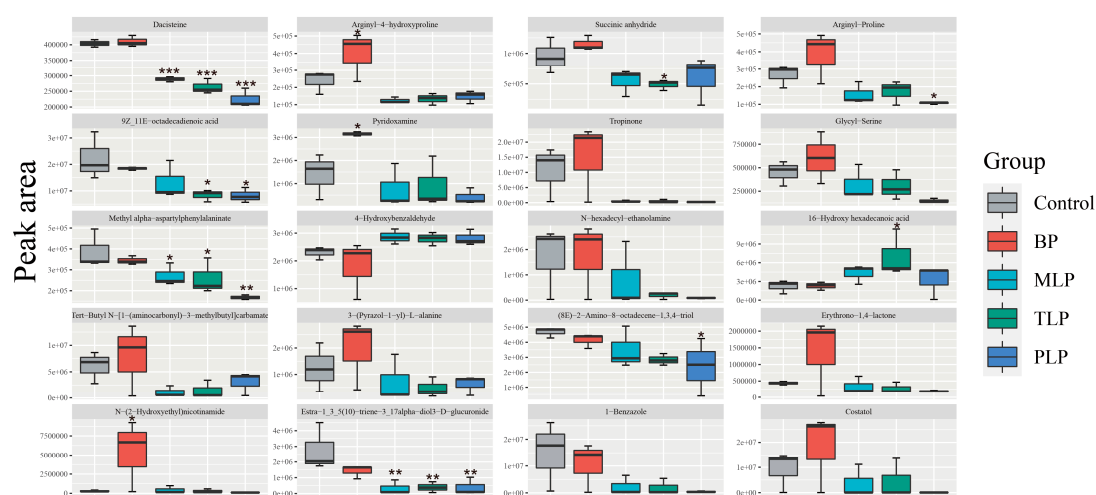


Figure S3

Peak areas of the 20 vital metabolites with variable importance in the projection (VIP value in the top 20). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ compared to the control group., by one-way ANOVA with Tukey's post hoc test were considered. The control group (no additional carbon source supplement); BP (bergamot polysaccharide supplement); MLP (mono-Laoxianghuang polysaccharide supplement); TLP (tri-Laoxianghuang polysaccharide supplement); PLP (penta-Laoxianghuang polysaccharide supplement).