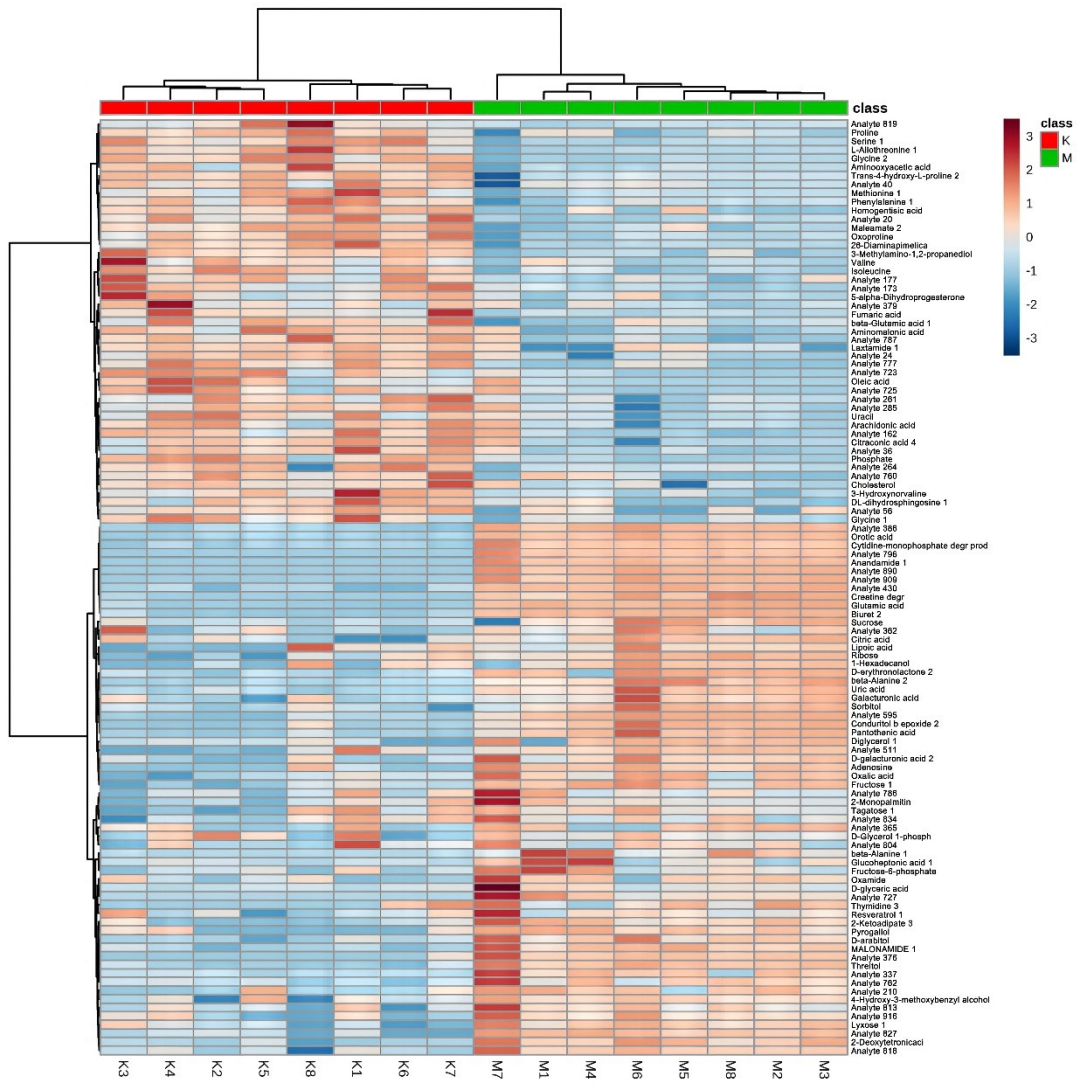


## Supplementary information

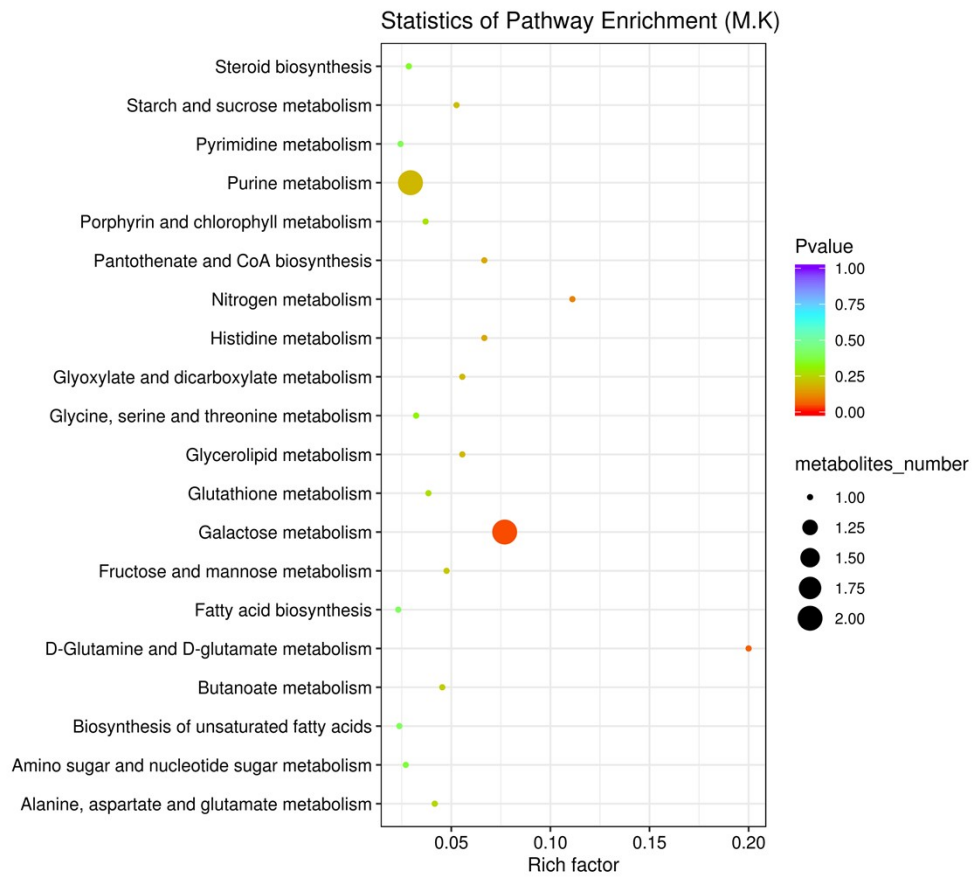


**Fig. S1.** GC-TOF/MS total ion chromatogram of all serum samples.

Note: M: Model group; K: Control group; H: High-dose polyphenols group, the same below.



**Fig. S2.** Heat map of hierarchical clustering analysis of potential biomarkers in the model group (M) versus the control group (K).



**Fig. S3.** Metabolic pathway analysis of potential biomarkers in control group (K) by model group (M).