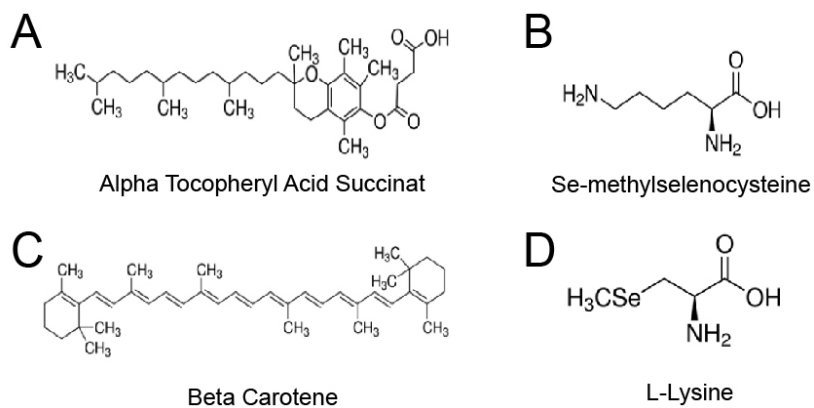


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## Supplementary materials



**Fig. S1** Chemical structure (a) VES, (b) MSC, (c)  $\beta$ -Ca, and (d) Lys.

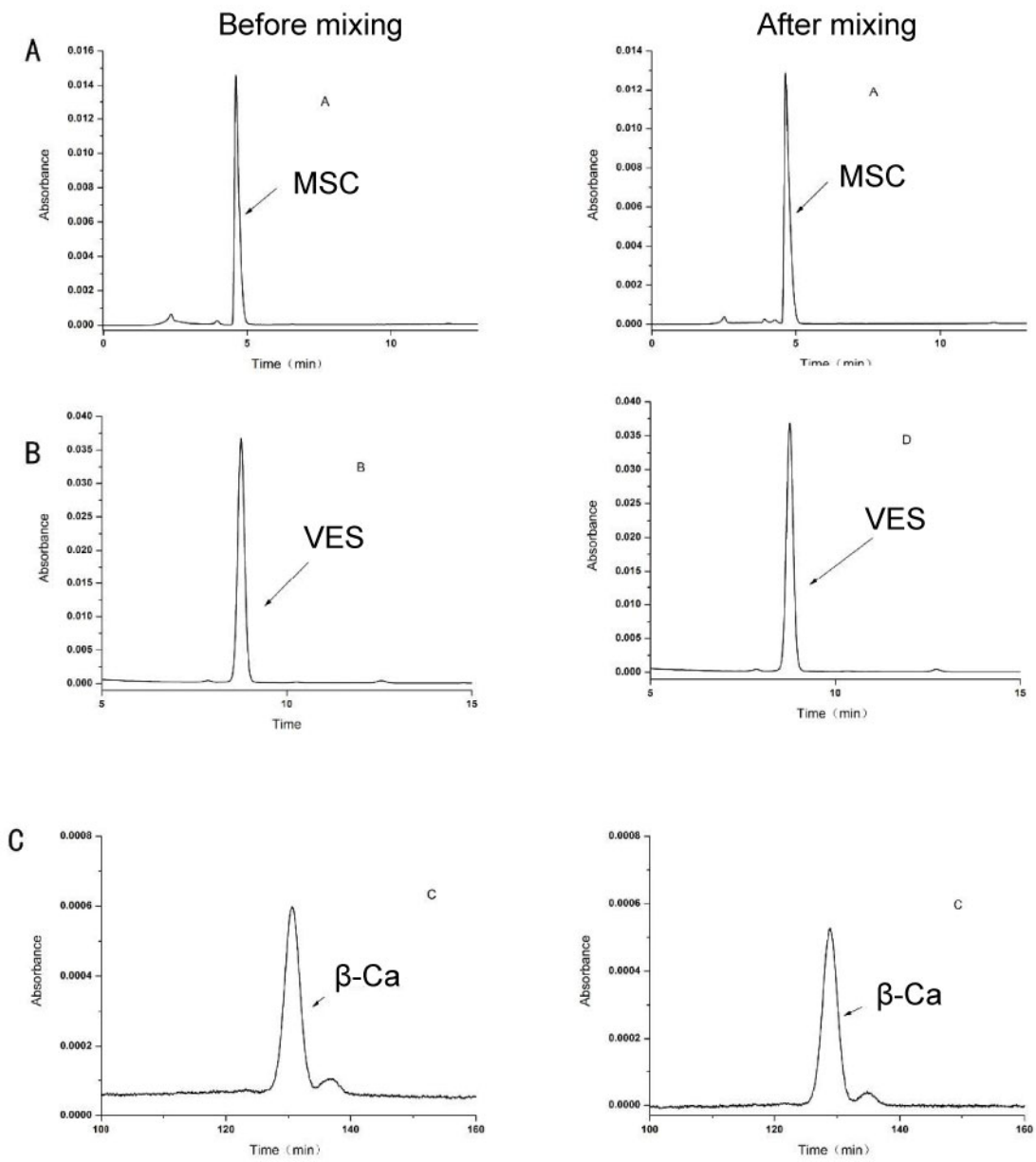
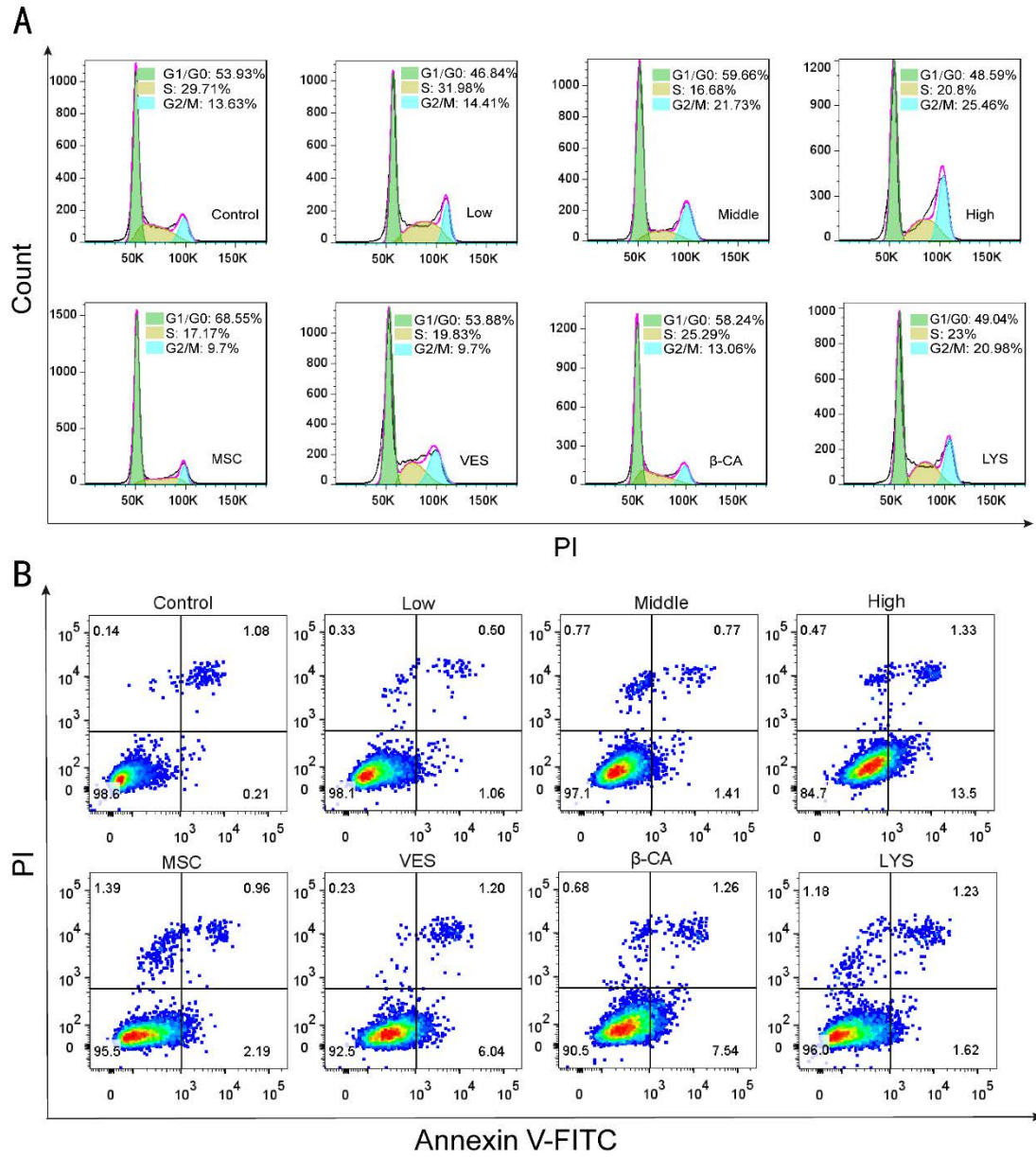
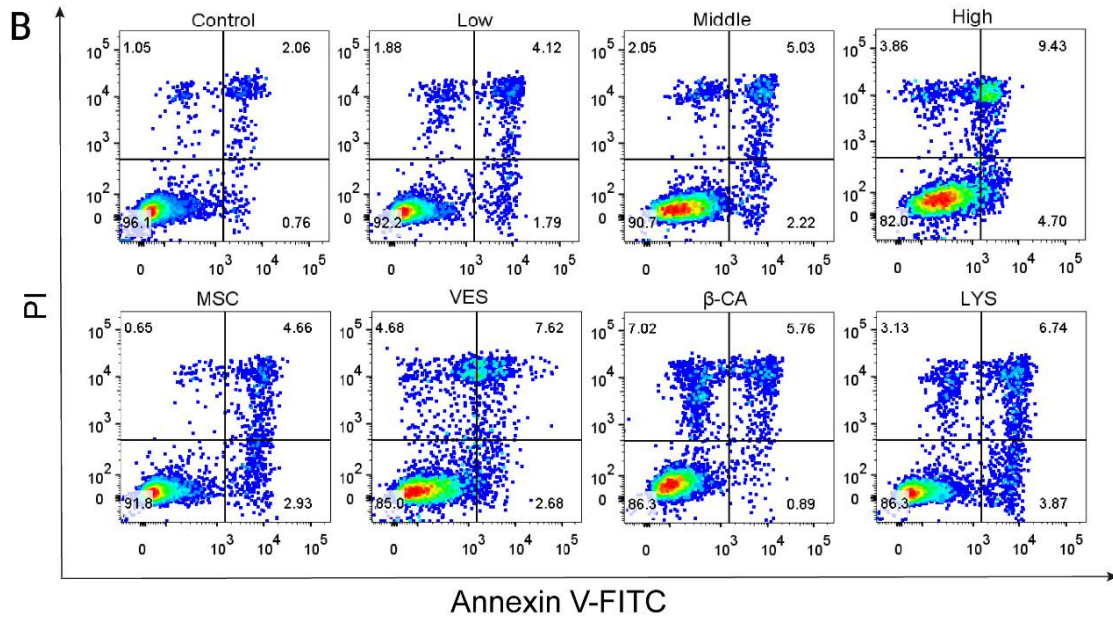
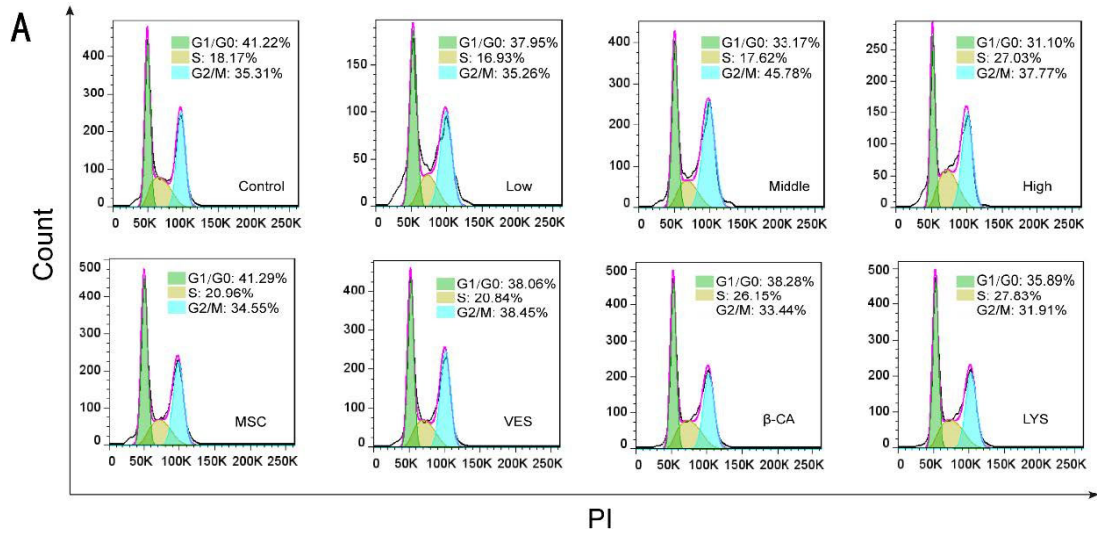


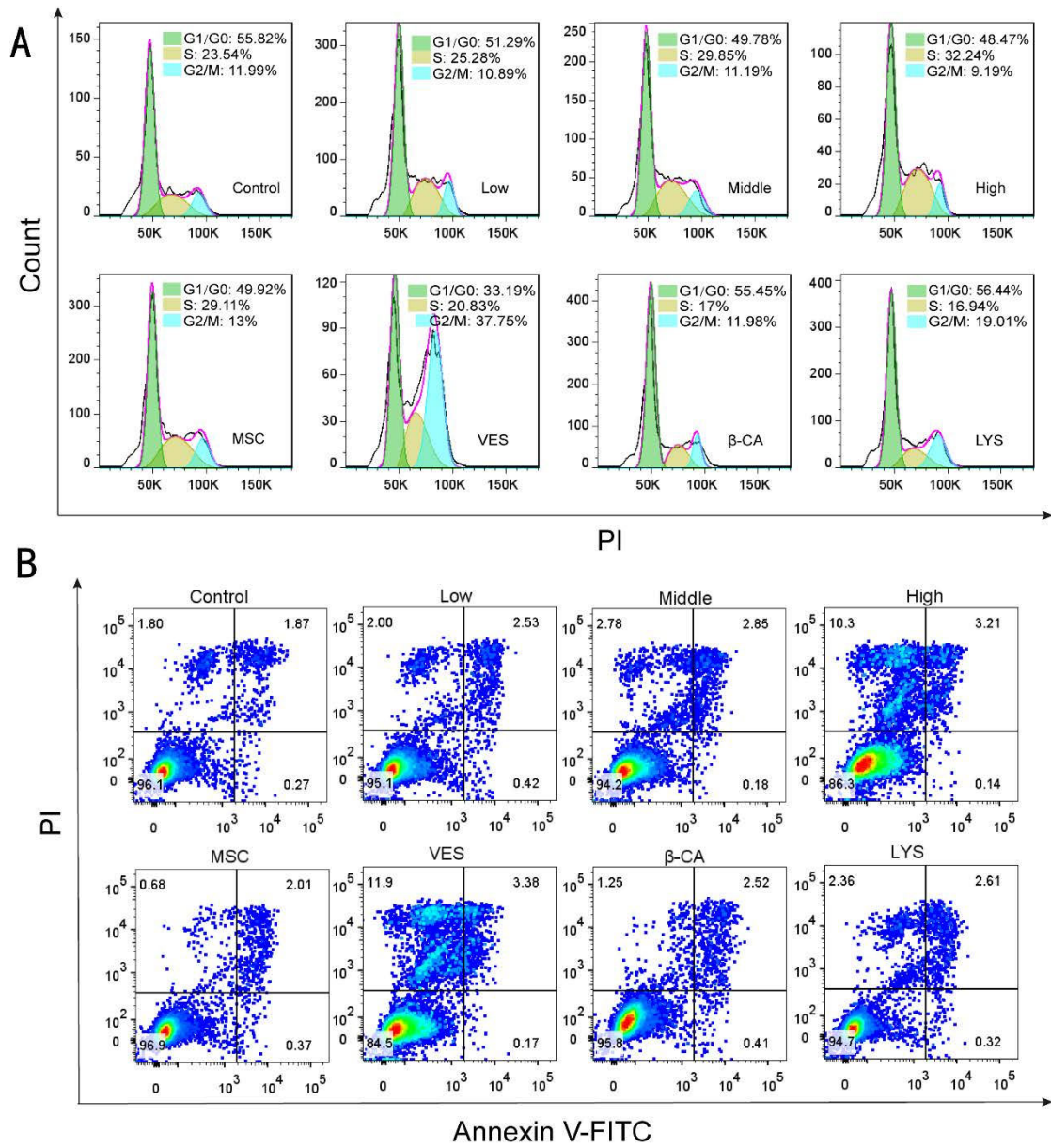
Fig. S2 HPLC diagrams before and after mixing of the four components. (a) MSC, (b) VES, And (c)  $\beta$ -Ca.



**Fig. S3** Effects of MVBL and single drugs on the cell cycle and apoptosis in MCF-7 cells. The cells were incubated with MVBL and the single drugs for 24 h, the statistical data are shown in Fig. S5 and S6.



**Fig. S4** Effects of MVBL and single drugs on the cell cycle and apoptosis in MDA-MB-231 cells. The cells were incubated with MVBL and the single drugs for 24 h, the statistical data are shown in Fig. S5 and S6.



**Fig. S5** Effects of MVBL and single drugs on the cell cycle and apoptosis in 4T1 cells. The cells were incubated with MVBL and the single drugs for 24 h, the statistical data are shown in Fig. S5 and S6.

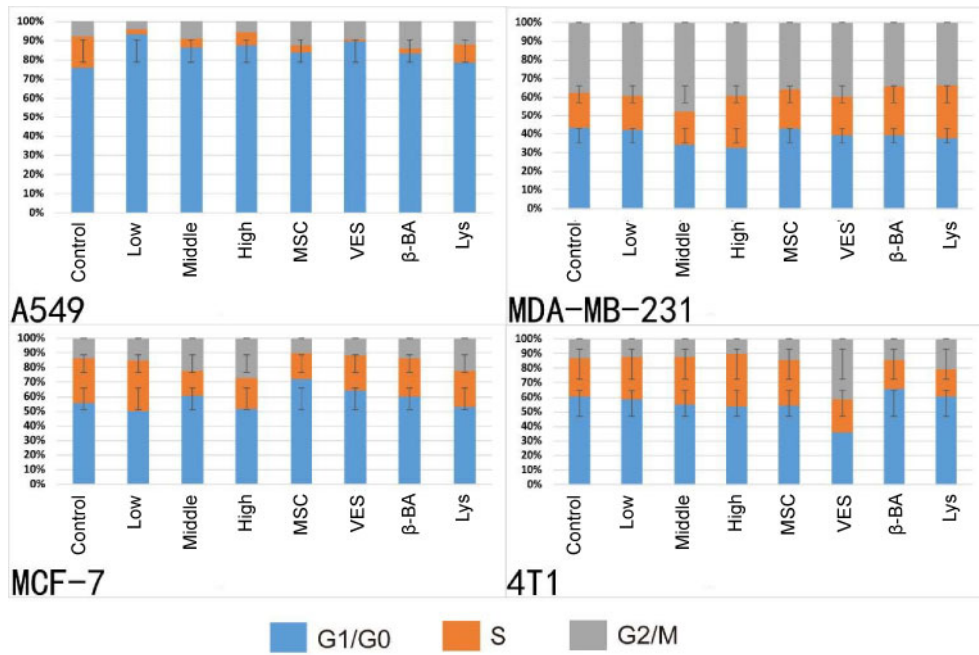


Fig. S6 Statistics of combined health products on A549, MDA-MB-231, MCF-7, and 4T1 cell cycle for Figs. S3–S5.

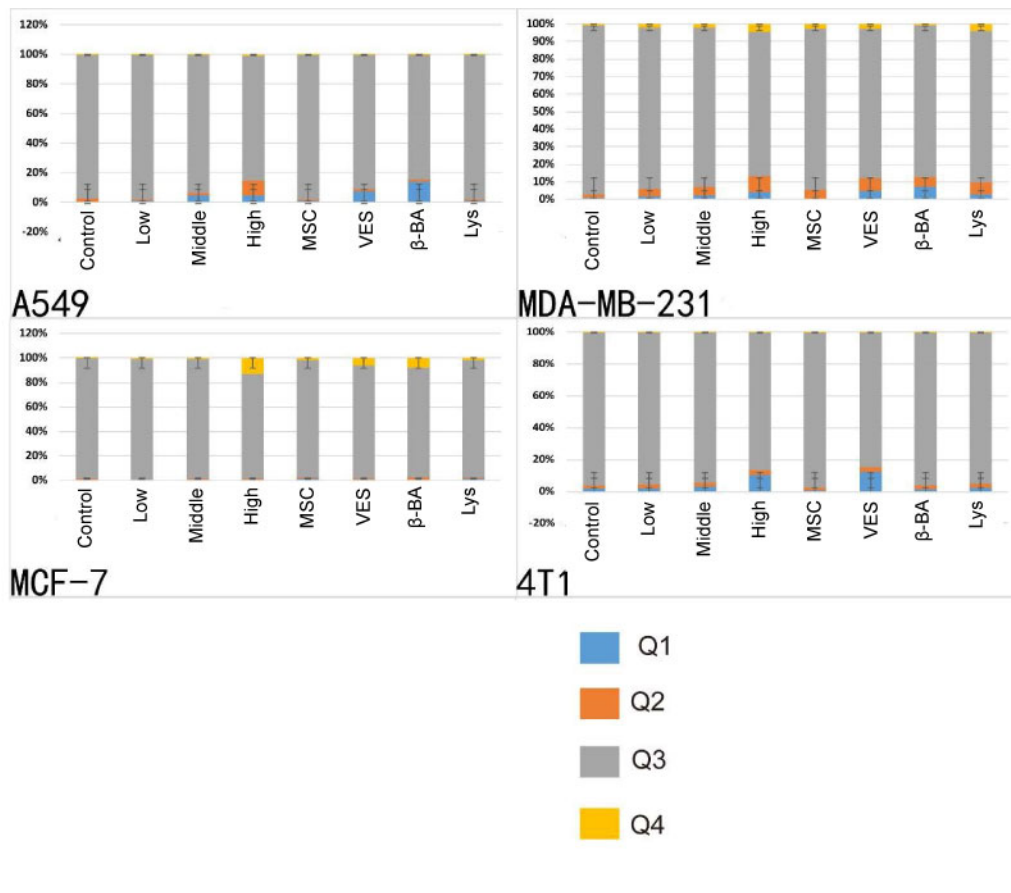


Fig. S7 Statistics of combined health products on A549, MDA-MB-231, MCF-7, and 4T1 cell apoptosis Figs. S3–S5.