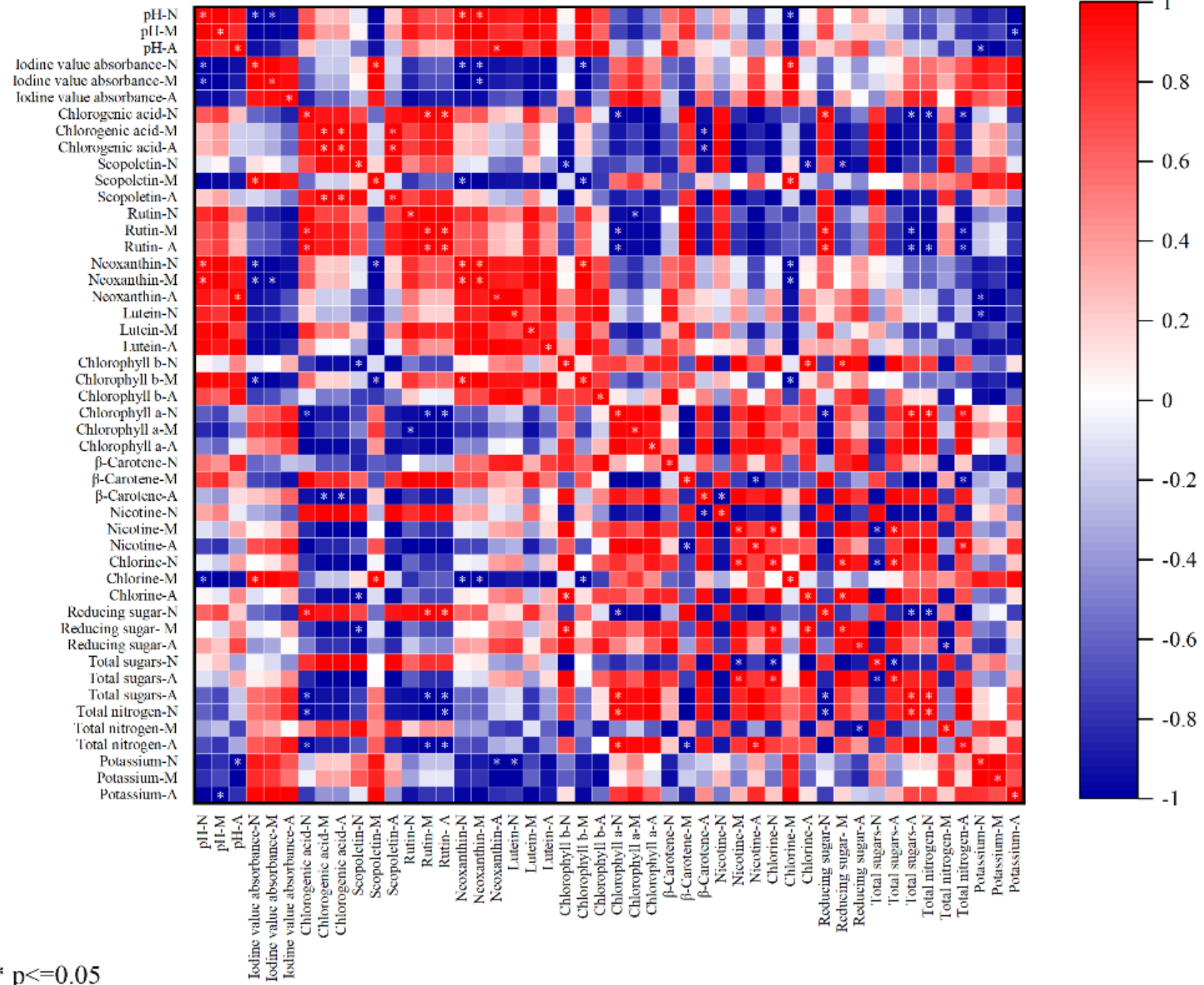
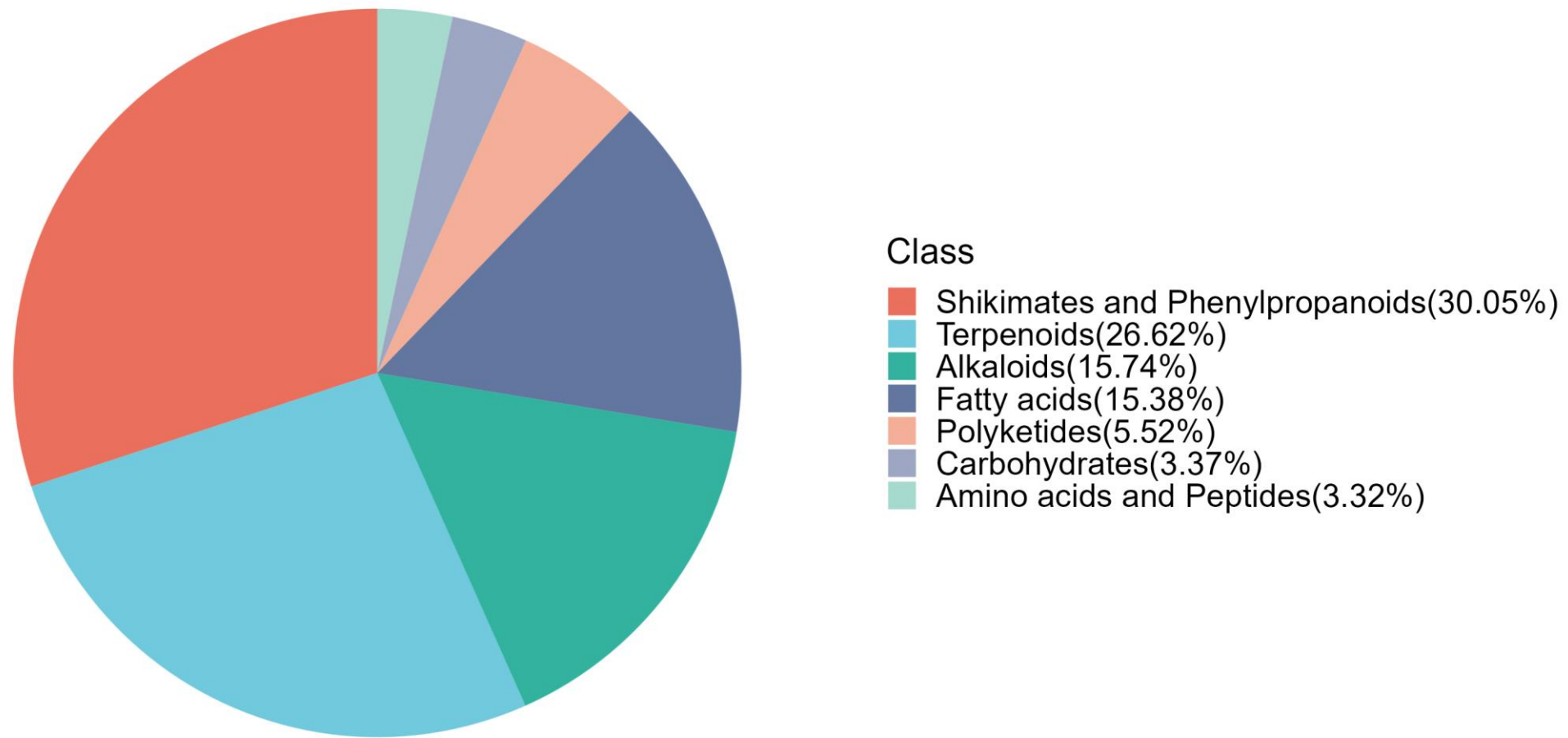


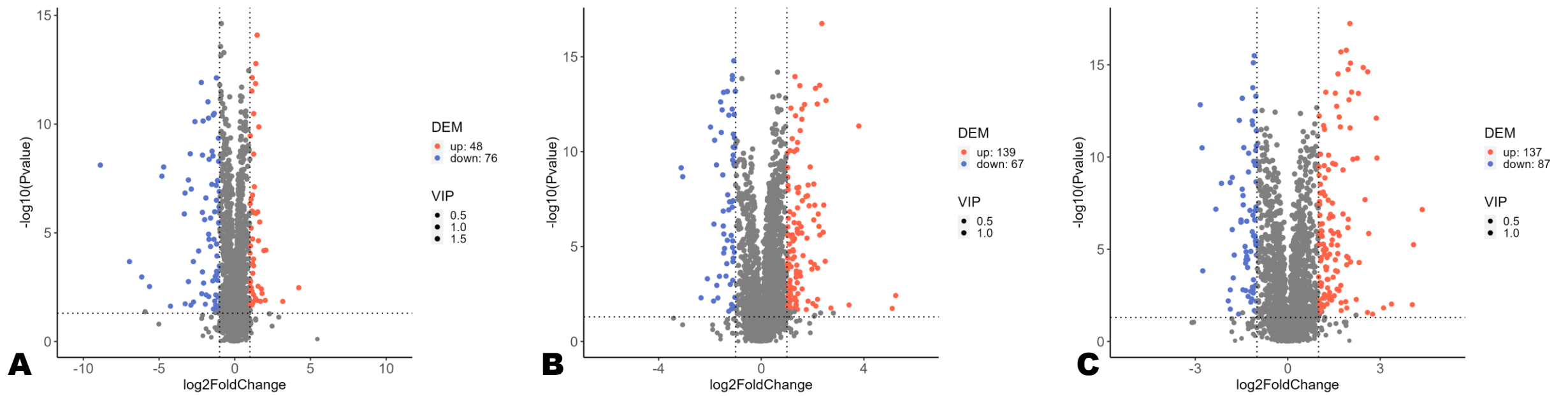


**Figure S1.** Correlations between the different traits under the three storage conditions. The redder the color, the stronger the positive correlation. The bluer the color, the stronger the negative correlation. \* indicates significance at  $P < 0.05$ .

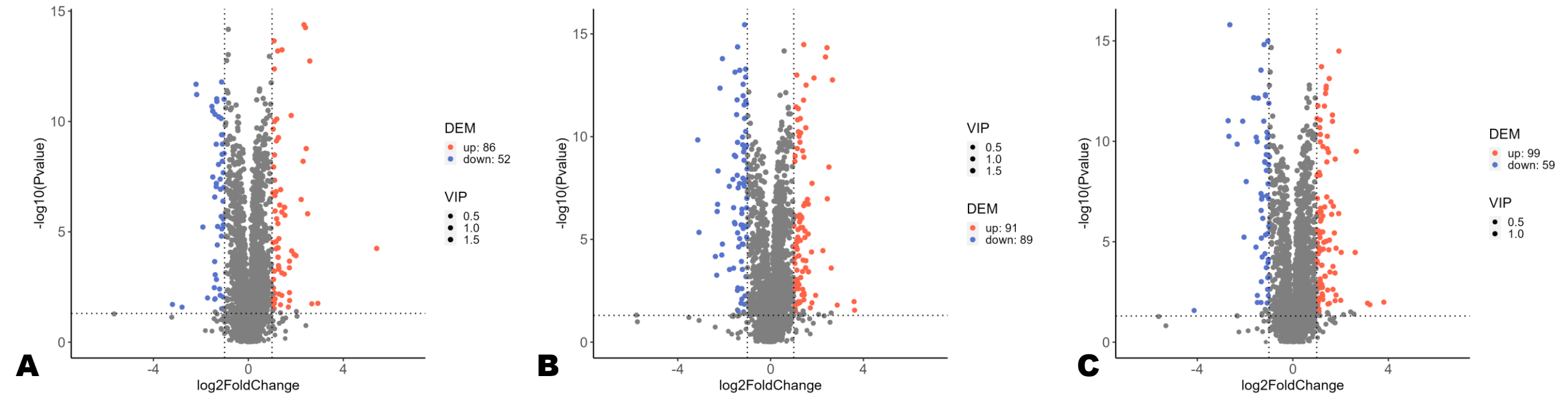
\*  $p \leq 0.05$



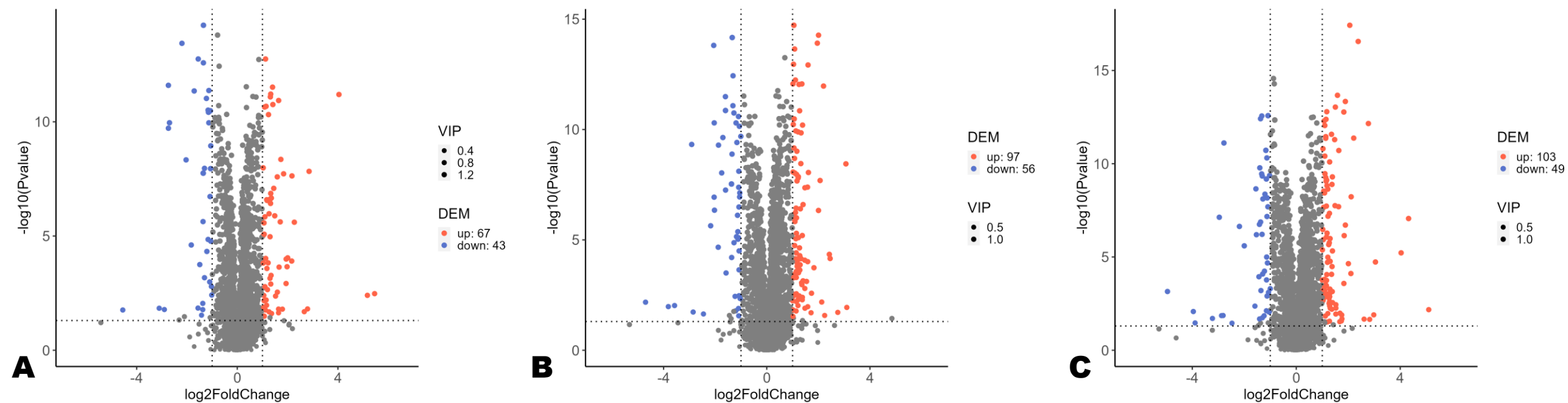
**Figure S2.** Classification of 1,957 identified metabolites in tobacco leaves during storage.



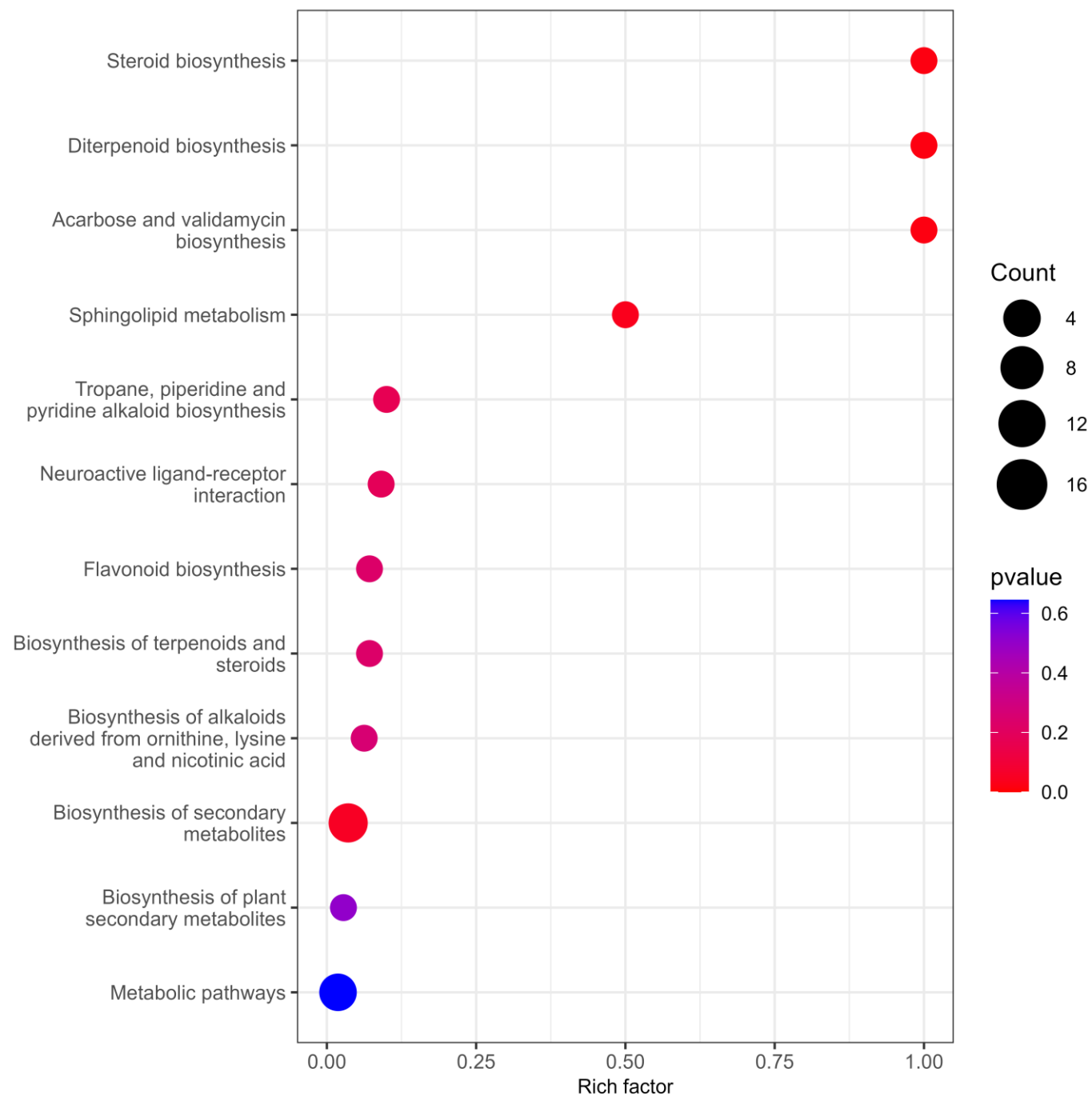
**Figure S3.** Volcano plots of differentially accumulated metabolites during storage in tobacco leaves under natural conditions. A) T0 (CK).vs.T1; B) T0 (CK).vs.T2; C) T0 (CK).vs.T3.



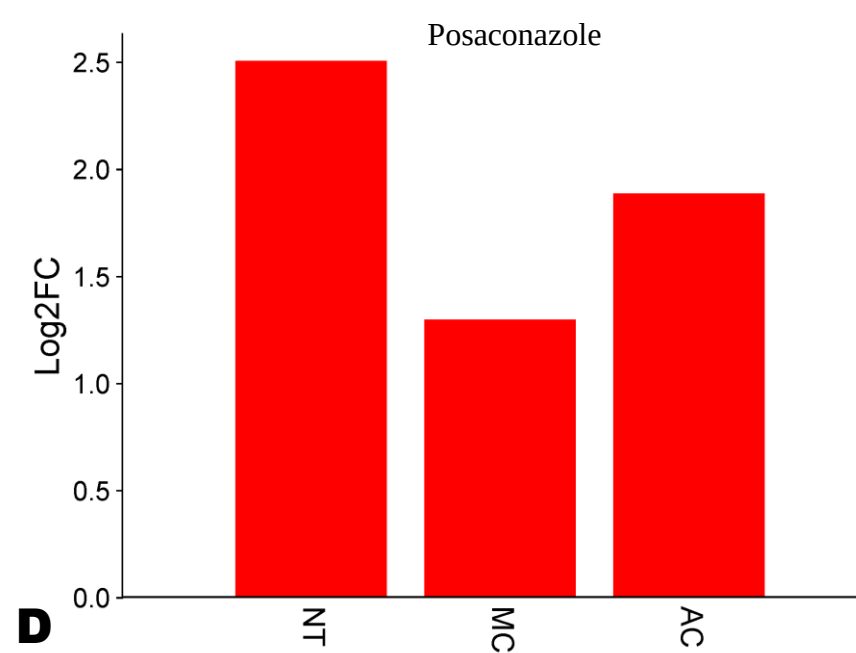
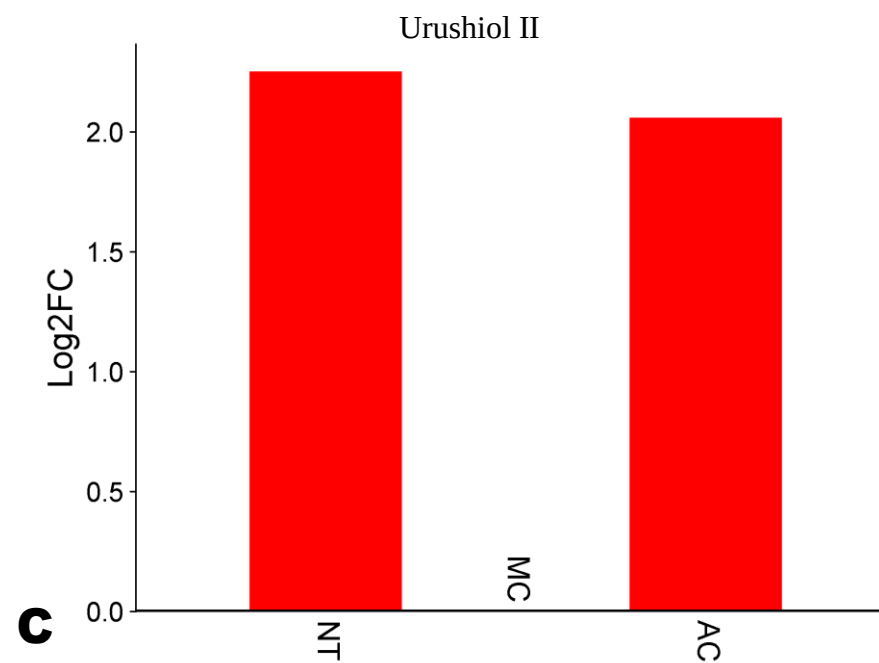
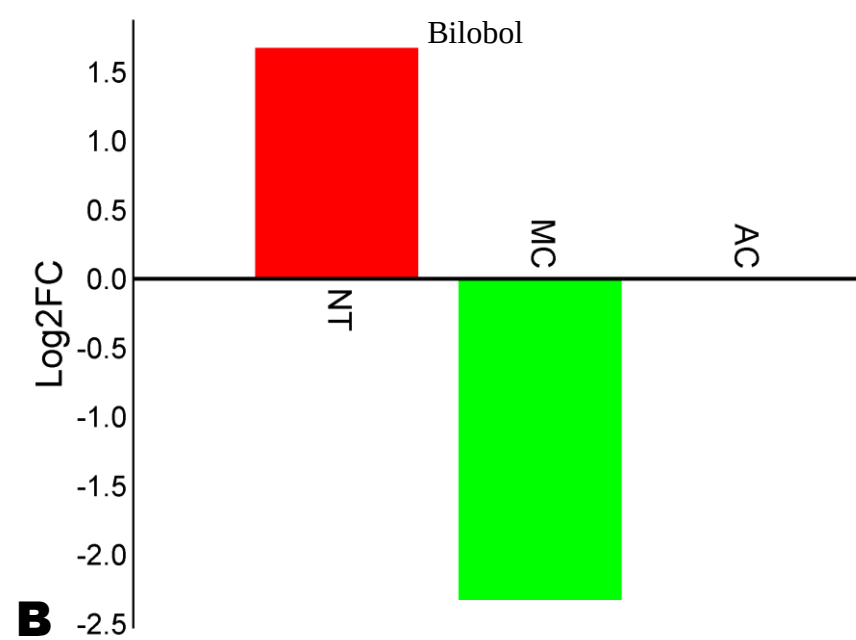
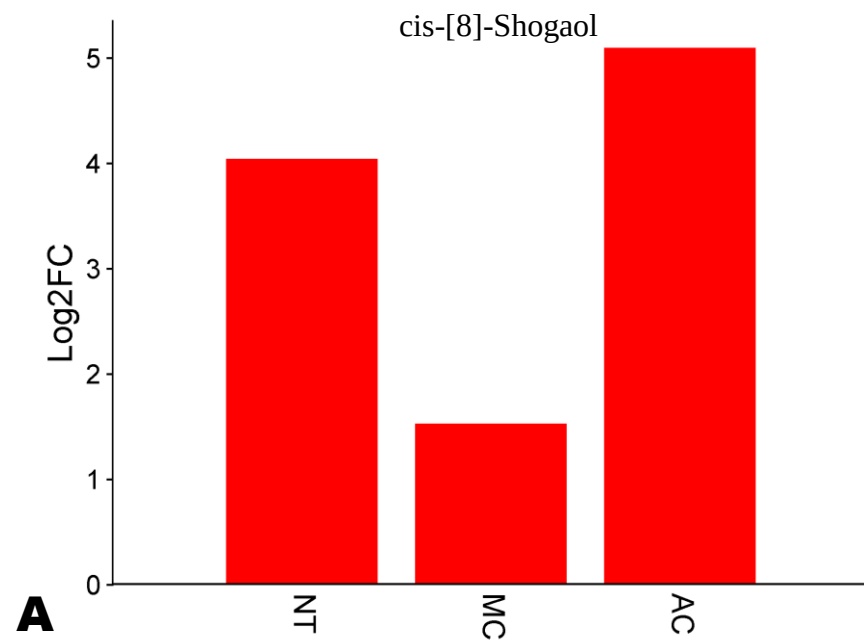
**Figure S4.** Volcano plots of differentially accumulated metabolites during storage in tobacco leaves under mechanical conditions. A) T0 (CK).vs.T1; B) T0 (CK).vs.T2; C) T0 (CK).vs.T3.



**Figure S5.** Volcano plots of differentially accumulated metabolites during storage in tobacco leaves under air-conditioning conditions. A) T0 (CK).vs.T1; B) T0 (CK).vs.T2; C) T0 (CK).vs.T3.



**Figure S6.** KEGG annotation and enrichment analysis of DAMs in tobacco leaves during storage between times T0 (CK) and T3 under air-conditioning conditions.



**Figure S7.** Log2FCs of major DAMs in tobacco leaves during storage under natural (NT), mechanical (MC), and air-conditioning (AC) conditions. A)-C) Polyketides. D) Unknown class.