**Supplemental Figure**

**Fig. S1.**

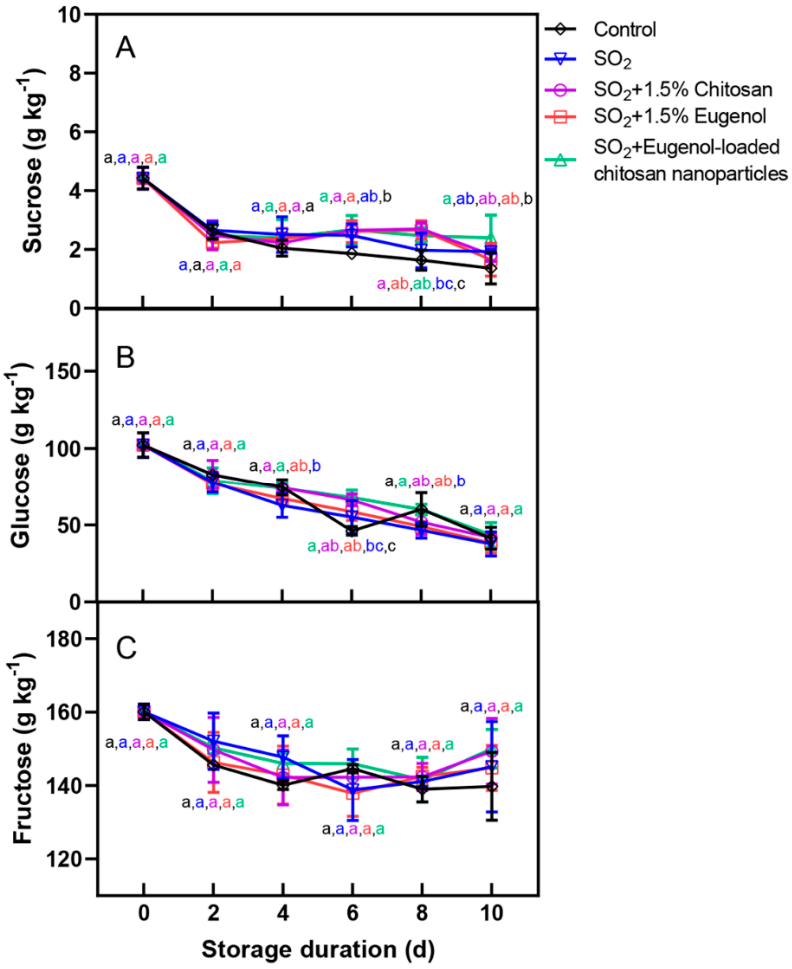



**Fig. S1.** Effect of exogenous treatments on fructose of table grape. (A) sucrose (B) glucose (C) fructose. The data represents the average ± SD（n=3）. Significant differences between means were determined using ANOVA ($P < 0.05$) and are denoted by different lowercase letters.

**Fig. S2.**

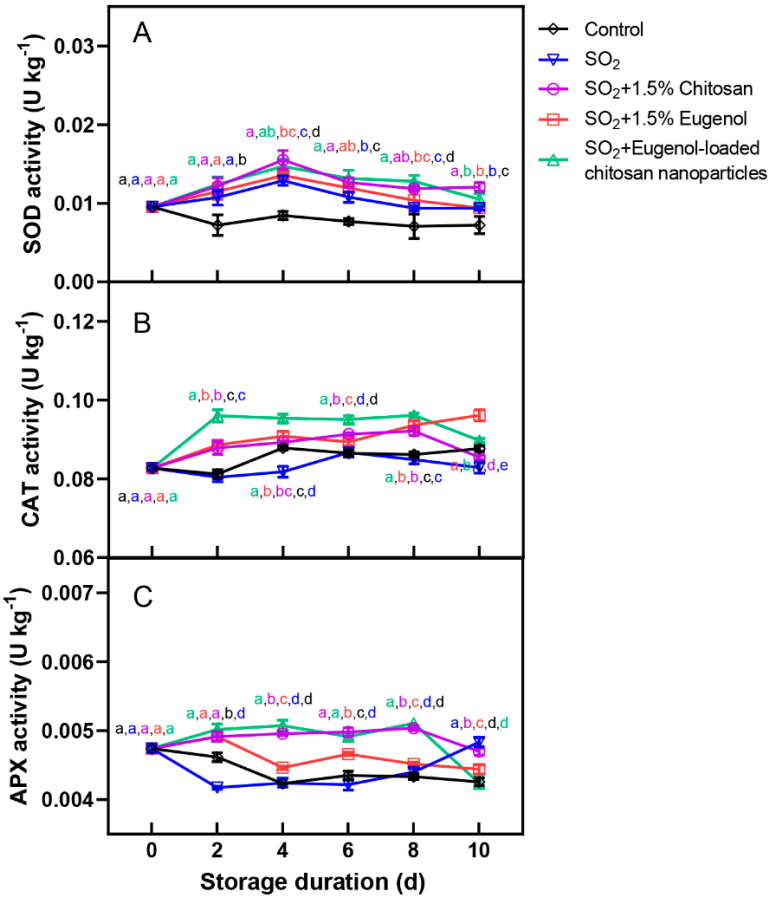



**Fig. S2.** Effect of exogenous treatments on the activity of (A) superoxide dismutase (SOD), (B) catalase (CAT), (C) ascorbate peroxidase (APX) of table grapes. Data represent average ± SD (n=3). Significant differences between means were determined using ANOVA ($P < 0.05$) and are denoted by different lowercase letters.

**Fig. S3.**

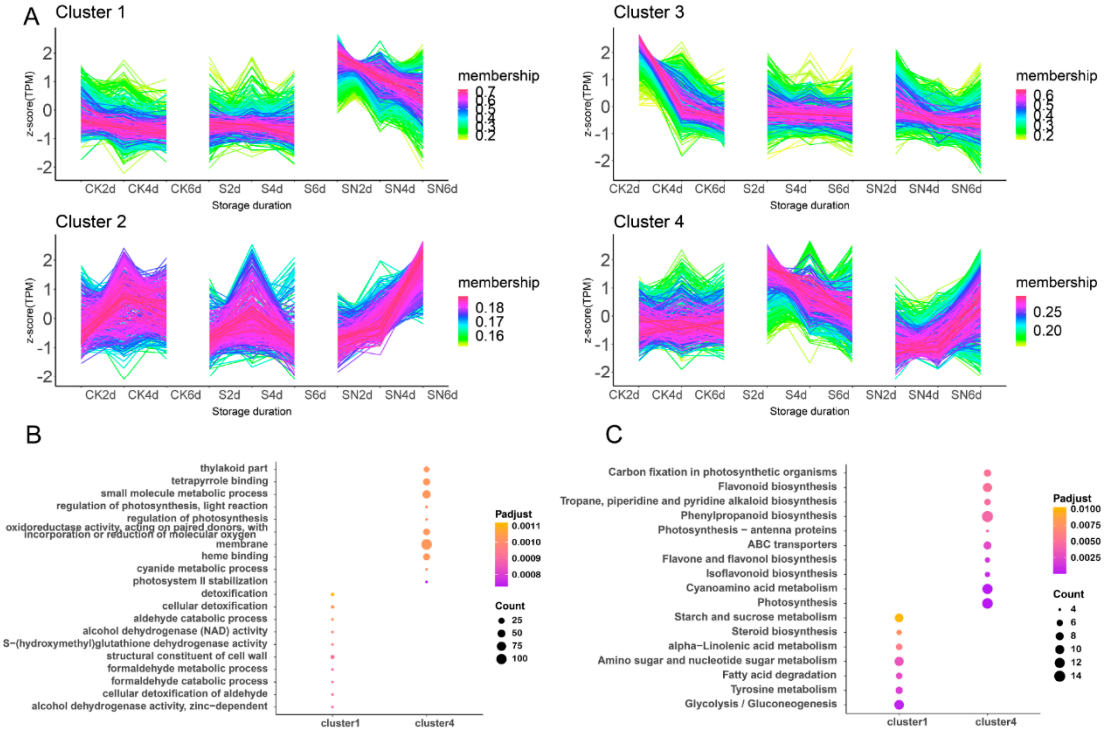



**Fig. S3.** Analysis of DEGs expression patterns during storage. (A) Cluster analysis of genes expression patterns after $SO_2$ and SN treatment during storage. S: $SO_2$ treatment; SN: $SO_2$+eugenol-loaded chitosan nanoparticles edible coating treatment. (B) GO enrichment analysis. (C) KEGG pathway analysis.

**Fig. S4.**

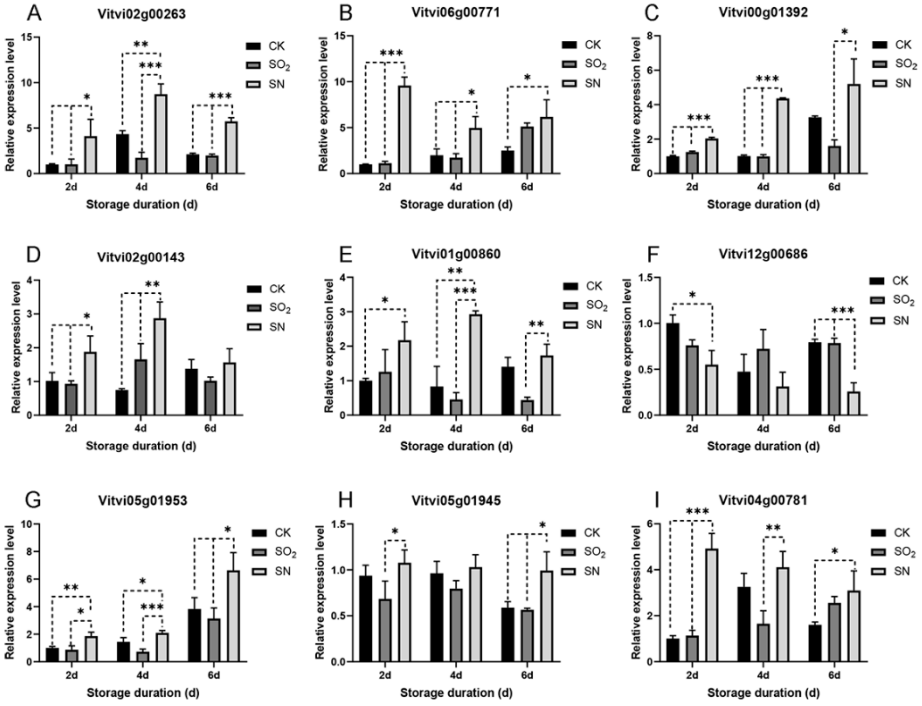



**Fig. S4.** Expression profiles of DEGs based on qRT-PCR. Three biological replicates were used for analysis. Asterisks indicate the level of significance (*$P$ <0.05, **$P$ < 0.01, and ***$P$ < 0.001) according to Student's $t$-test.

**Supplemental table**

**Table S1.**

Primer sequences used for qRT-PCR analysis

| Primer name | oligonucleotide primers | Purpose |
|---|---|---|
| Vitvi02g00263-F | TGCAGGGGATATGTTCACAAG | qRT-PCR |
| Vitvi02g00263-R | TGTCTGGTAATGCATGGTAGC | |
| Vitvi06g00771-F | ATCTGGAGCACATACAATAGGC | qRT-PCR |
| Vitvi06g00771-R | TGATCAGAGTGAAGAAGACCCT | |
| Vitvi00g01392-F | CAAACGGACGCCATACTGTC | qRT-PCR |
| Vitvi00g01392-R | CAACTGGGCACACTCAAGTC | |
| Vitvi02g00143-F | GACAACTCCTCCGAAATCTCC | qRT-PCR |
| Vitvi02g00143-R | CAACCCAGCAAAGTGAATGAC | |
| Vitvi01g00860-F | TGACTCAACTCGTCCGATCTA | qRT-PCR |
| Vitvi01g00860-R | AGCGTAGTTCAATGGGTTCTC | |
| Vitvi12g00686-F | AAGGAGGTGCAGATTGTAGC | qRT-PCR |
| Vitvi12g00686-R | AGCACCATTGAAGTAGCAGG | |
| Vitvi05g01953-F | AGTGCCGAAGACTCATACAAG | qRT-PCR |
| Vitvi05g01953-R | TAGGAGATGGTGGTTTGTGG | |
| Vitvi05g01945-F | AAGACTCATACAAGCCACCTC | qRT-PCR |
| Vitvi05g01945-R | ATGGGAGAAGGAGGTTTGAG | |
| Vitvi04g00781-F | TGTGGAAGCAGAAGTGGAAC | qRT-PCR |
| Vitvi04g00781-R | TAACCCAACATGATGCACCC | |

**Table S2.**

Primers used for vector construction in this study

| Primer name | Primer sequence(5'-3') | vector |
|---|---|---|
| Vitvi17g00809 (DOF5.6)-F | ACGATTCACACTCGGTAGCAG | Full length |
| Vitvi17g00809 (DOF5.6)-R | GACTAGTGGGTTTGTGGTTGATG | |
| Vitvi10g01594 (ERF4)-F | GTTGACTGTGCCCACCCTTTCTTAG | Full length |
| Vitvi10g01594 (ERF4)-R | TCCAGTGAGGACGCAAAGATCAGAG | |
| Vitvi06g00741 (WRKY24)-F | ATGGGTTCTTCCTCTGGGAGCTTAG | Full length |
| Vitvi06g00741 (WRKY24)-R | ACTCGAATAACATGTCGTCTCTGGG | |
| Vitvi05g00108 (bZIP14)-F | GATATGAACTACACAATCCTCCTG | Full length |
| Vitvi05g00108 (bZIP14)-R | ATAAGTTATAACTCGGGTACGGAC | |
| Vitvi15g01003 (WRKY53)-F | ATGGAAATGGCCAGGGAGTG | Full length |
| Vitvi15g01003 (WRKY53)-R | TCCAGCGGGAAACTGTAGTC | |
| Vitvi15g00839 (ANL2)-F | GAGACAGCAGACCAAGTACGAG | Full length |

| | | |
|---|---|---|
| Vitvi15g00839 (ANL2)-R | TCAGCTTTCGCAGTGAAGGG | |
| Vitvi02g00757 (KAN2)-F | AGAGATTGGTGGAAGATGGAGTTG | Full length |
| Vitvi02g00757 (KAN2)-R | AGATATCATCAATGTGACCTCCCC | |
| Vitvi15g00912 (ATHB12)-F | GAGTAGTTGGTCTGAGGAGTTTTTG | Full length |
| Vitvi15g00912 (ATHB12)-R | CTTTGGACAGGGTAGTGAGATTAGC | |
| Vitvi14g00018 (MYB61)-F | CTGCCACTTCATTTTCTCAACCTC | Full length |
| Vitvi14g00018 (MYB61)-R | CCTTTTGATTGCTTACAGGGACAG | |
| Vitvi13g01266 (GAMYB)-F | ATGAGTCACTTGACAAATGAGAGC | Full length |
| Vitvi13g01266 (GAMYB)-R | AGGAAGTTCAGACATTTGACAGAC | |
| Vitvi08g01841 (NAC87)-F | CTCCTTCAATACAGGCTCTTCTCTC | Full length |
| Vitvi08g01841 (NAC87)-R | CAGGCTGCTTCTTCTTGTATCTTC | |
| Vitvi05g00715 (ERF92)-F | AGAGGAGCCACAAACAAATATCAC | Full length |
| Vitvi05g00715 (ERF92)-R | GATCAAGGACTAGAGGTCTCAGAG | |
| Vitvi02g00387 (HFB2B)-F | GGTTATCAGTTTCTTAGGGTTCGG | Full length |
| Vitvi02g00387 (HFB2B)-R | GCAAACCAACCTAACCTTGATGAG | |
| Vitvi11g00680 (bHLH66)-F | CTCAACCCTACCTCCCTCAAATG | Full length |
| Vitvi11g00680 (bHLH66)-R | AAATACCACATCAGACATCGGCA | |
| Vitvi10g01078 (WRKY14)-F | TCGGTATAACAGGTGCCAAACTC | Full length |
| Vitvi10g01078 (WRKY14)-R | CCTAGAGAGGCGAGATTGATAAG | |
| Vitvi10g00063 (WRKY6)-F | ATGGACAAAGGATGGGGTCTCAC | Full length |
| Vitvi10g00063 (WRKY6)-R | GTTGGTGTTGCTGGAGTTGGTTG | |
| Vitvi11g01188 (WRKY11)-F | ATGGCCGTCGATTTTCTAGG | Full length |
| Vitvi11g01188 (WRKY11)-R | GGTTGATGGGAACATGAGCC | |
| Vitvi10g00854 (ARF6)-F | ATGAGGTTGTCTCCTGCTGG | Full length |
| Vitvi10g00854 (ARF6)-R | GTAGTCAAGAGACCCCACAG | |
| Vitvi06g00360 (RAP2-7)-F | GATGTTTTCTCTCCGACTCCGAC | Full length |
| Vitvi06g00360 (RAP2-7)-R | GGAGGTGTGATGGGTGGATTAAG | |
| Vitvi05g01733 (MYB15)-F | GCCAGAGGTTAGAGTAGTGGTGTTC | Full length |
| Vitvi05g01733 (MYB15)-R | ATGCATCACTATGTTCAGATCCTCC | |

| | | |
|---|---|---|
| Vitvi10g00618 (WRKY65)-F | CGTCCTTCATAAACTATTCCTCTG | Full length |
| Vitvi10g00618 (WRKY65)-R | ATCTCAGCTTGTGGTCCCACAC | |
| Vitvi08g01336 (DIV)-F | GTCTCTGTACTCATTCCTAGCACTG | Full length |
| Vitvi08g01336 (DIV)-R | CTTATCTCACTAGCGCCTCTATTTC | |

64

65

66