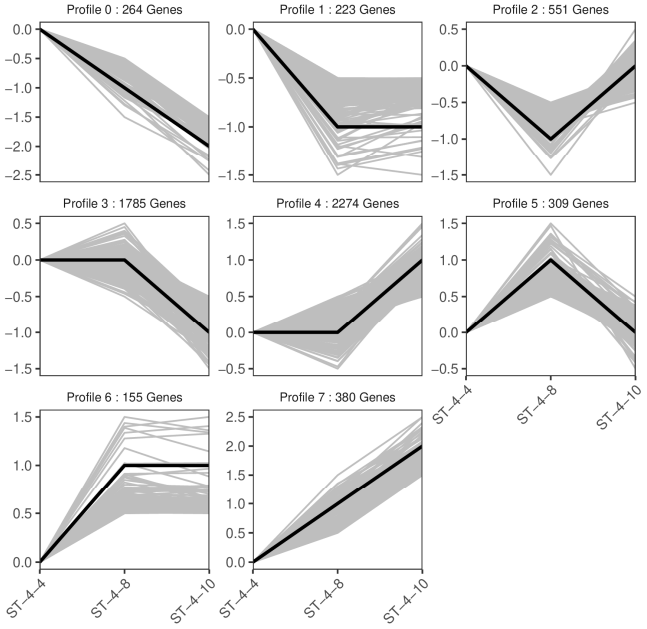


Figure S1: Trend cluster analysis of differentially expressed genes. ST-4-4: PZY004 germplasm bud tips in April; ST-4-8: PZY004 germplasm bud tips in August; ST-4-10: PZY004 germplasm bud tips in October.

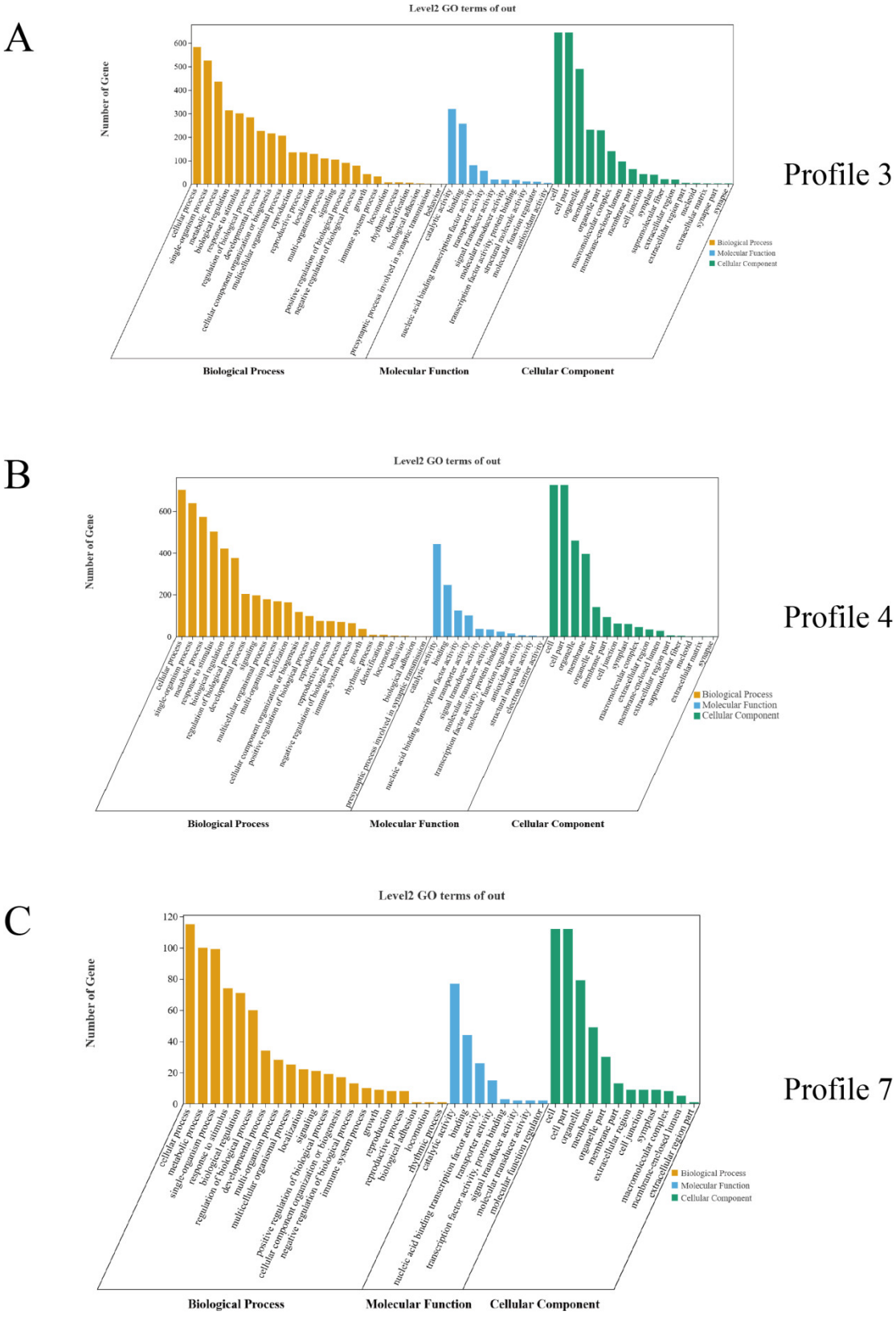


Figure S2: Gene Ontology (GO) enrichment analysis of differentially expressed genes across three profiles. (A) Profile 3. (B) Profile 4. (C) Profile 7.

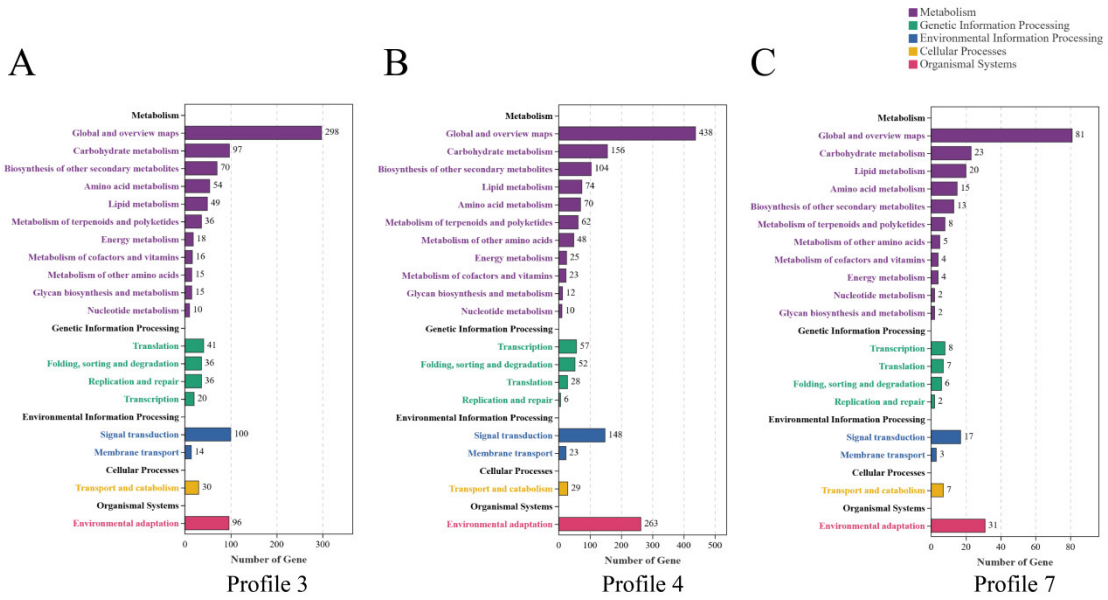


Figure S3: Representation of KEGG-enriched pathways associated with the differentially expressed genes across the three profiles. (A) Profile 3. (B) Profile 4. (C) Profile 7.

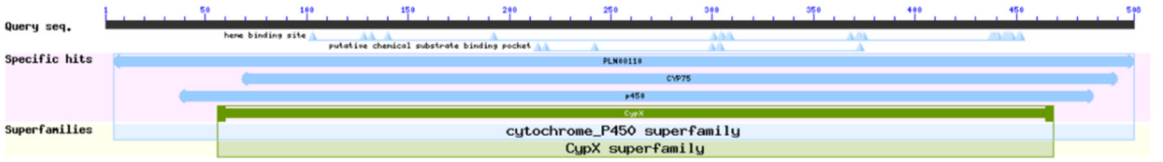


Figure S4: Analysis of conserved domain of amino acid sequence of NgF3′5′H3.

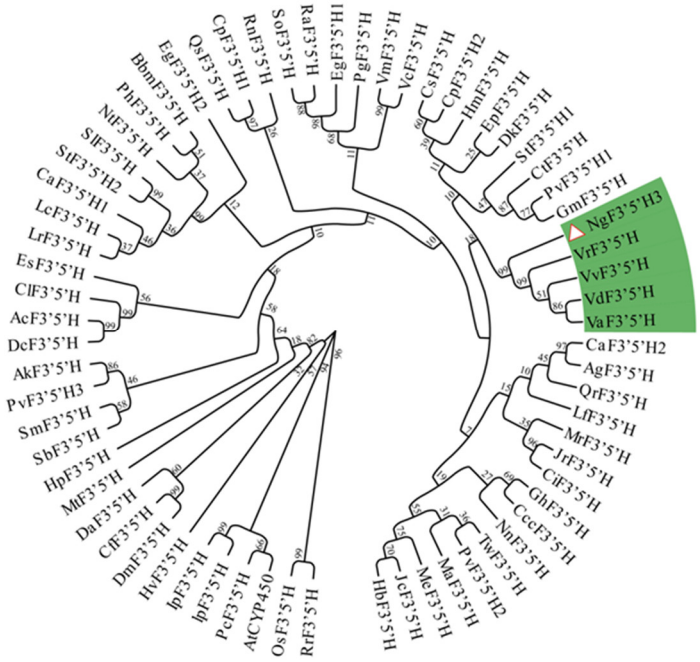


Figure S5: Phylogenetic analysis of the *NgF3′5′H3* gene and *F3′5′H* genes across multiple species.



Figure S6: Sequence comparison of conserved SRS6 motifs in NgF3'5'H3. The box indicates the amino acid sites responsible for hydroxylation.

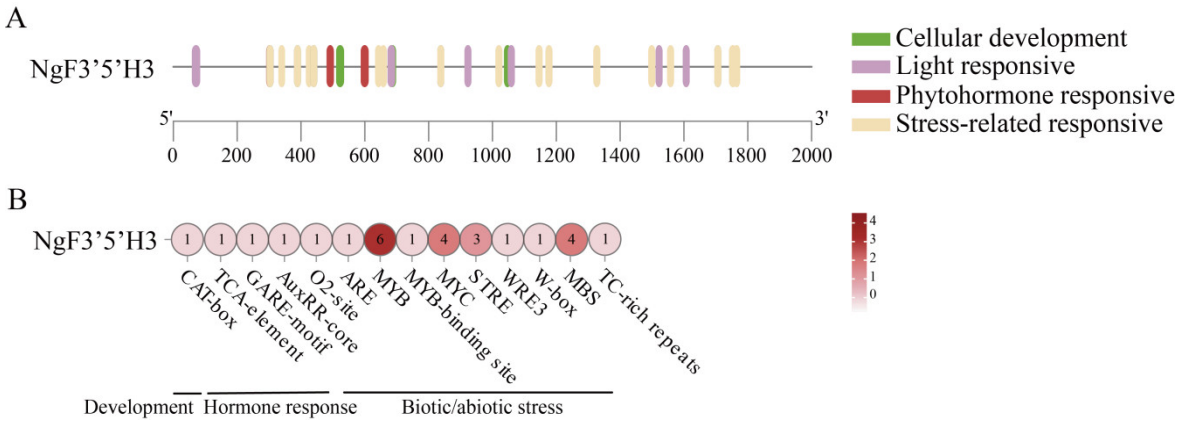


Figure S7: Analysis of cis-acting elements of 2k bp promoter upstream of *NgF3'5'H3* gene. (A)Visualization and analysis of four types of cis-acting elements. (B)Prediction of the types and quantities of development response elements, hormone response elements, and stress response elements within the promoter of *NgF3'5'H3*.