

Description of Additional Supplementary Files

File Name: Supplementary Data 1

Description: Number of duplicated ancestral core-eudicot genes in grape and *Panax stipuleanatus* genomes.

File Name: Supplementary Data 2

Description: Proportion of the gene retention of the six duplicated ancestral core-eudicot chromosomes in *Panax stipuleanatus*.

File Name: Supplementary Data 3

Description: Collinear matrix of the protein-coding genes of the four *Panax* species.

File Name: Supplementary Data 4

Description: Matrix of the collinear protein-coding genes of the three tetraploid species.

File Name: Supplementary Data 5

Description: PCA scores of the compartment A/B in *Panax stipuleanatus* genome.

File Name: Supplementary Data 6

Description: Topological associated domains (TADs) in *Panax stipuleanatus* genome.

File Name: Supplementary Data 7

Description: Patterns of the gene expression and cytosine methylation in all 42 homologous genomic regions.

File Name: Supplementary Data 8

Description: Identification of the CYP450 gene family and their duplication modes in *Panax* species.

File Name: Supplementary Data 9

Description: Information of the CYP450 superfamily in *Panax stipuleanatus* genome.