**Pecan kinome: classification and expression analysis of all protein kinases in *Carya illinoinensis***

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**Supplementary Data**

Supplementary data associated with this article can be found, in the online version.

Supplemental Table S1: Kinase domain annotation of 967 pecan PKs.

Supplemental Table S2: Family classification of pecan PKs with related information.

Supplemental Table S3: Domain organization of pecan PKs.

Supplemental Table S4: List of pecan protein kinases containing multiple kinase domains.

Supplemental Table S5: GO IDs of pecan PKs.

Supplemental Table S6: Segmental duplication events and *Ka/Ks* values of pecan protein kinases.

Supplemental Table S7: FPKM values of pecan PK genes during embryo development.

Supplemental Table S8: Genes in eight groups with different expression patterns during pecan embryo development.

Supplemental Table S9: Average FPKM expression values of pecan PK genes under drought stress.

Supplemental Table S10: Differentially expressed PK genes in six clusters with different expression patterns under drought stress.

Supplemental Fig. S1: Phylogenetic classification of pecan PKs.

Supplemental Fig. S2: Phylogenetic classification of PKs in four different species.

Supplemental Fig. S3: Expression of PK genes during embryo development in pecan.

Supplemental Fig. S4: Different expression patterns of pecan PK genes during embryo development.

Supplemental Fig. S5: Expression data of PK subfamilies with drought treatment in pecan.

**Supplemental Fig. S1** Phylogenetic classification of pecan PKs. The phylogenetic tree was generated with amino sequences of the kinase domain with maximum-likelihood method. PK subfamilies were highlighted with different colors.

**Supplemental Fig. S2** Phylogenetic classification of PKs in four different species. The phylogenetic tree was generated with amino sequences of the kinase domain from four different species (967 from pecan, 1006 from *Arabidopsis*, 1168 from grape and 758 from pineapple) with maximum-likelihood method.

**Supplemental Fig. S3** Expression of PK genes during embryo development in pecan. Log2 (FPKM+1) values were performed according to the red-white-blue color scale, and the heatmaps were generated using the R language with hierarchical clustering.

**Supplemental Fig. S5**

**Supplemental Fig. S5** Expression data of PK subfamilies with drought treatment in pecan. Log2 (FPKM+1) values were performed according to the red-white-blue color scale, and the heatmaps were generated using R language with hierarchical clustering.