

Description of Additional Supplementary Files

File name: Supplementary Data S1

Description: Summary table of the differential gene expression analysis of DEK1 mutants.

File name: Supplementary Data S2

Description: Summary table of overall deregulated biological processes, molecular functions, cellular components, anatomical entities and developmental stages in DEK1 mutants as represented by the respective Gene Ontology (GO) and Plant Ontology (PO) partitions.

File name: Supplementary Data S3

Description: Enriched ontology terms for the predicted *P. patens* gene regulatory subnetworks.

File name: Supplementary Data S4

Description: Genes encoded by the five DEK1-controlled subnetworks

File name: Supplementary Data S5

Description: Summary table of the predicted regulatory interactions within and between the 11 subnetworks.

File name: Supplementary Data S6

Description: Final filtered set of DEK1-controlled regulatory interactions

File name: Supplementary Data S7

Description: Enriched ontology terms for the filtered set of DEK1-controlled regulatory interactions (all targets and per subnetwork-pair/deregulation pattern type).

File name: Supplementary Data S8

Description: Factorial Differential Gene Expression Network Enrichment Analysis (FDGENEA) of 17 phenotypic factors.

File name: Supplementary Data S9

Description: Summary table of the DEK1-controlled regulatory interactions for overbudding associated genes

File name: Supplementary Data S10

Description: Full annotation of the genes associated with the overbudding phenotype (FDGENEA) including the cell type specific transcriptome data (Frank and Scanlon 2015; Figs 2a, b).

File name: Supplementary Data S11

Description: Gene sets of the AP2 and MYB controlled circuits depicted in Figs. S10l, m.

File name: Supplementary Data S12

Description: Primers used in this study.

File name: Supplementary Data S13

Description: Key resources used in this study. Complete list of used antibodies, deposited data, experimental models/strains, software and algorithms including citations, sources, accession numbers and URLs.