Supplementary Tables

Supplementary Table 1. Oligonucleotide primers used for mutant screening and verification. The sequences are given from the 5´ to 3´ end.

A Screening

	***gpt2-1* mutant**
GPT2-1 (f)	GTCGGACCAAACTTTGTCTGGT
GPT2-1 (r)	GGTCTGATCAAGAAATGACACTGA
LB_{gpt2-1} (f)	ATATTGACCATCATACTCATTGC
	***tpt-2* mutant**
TPT-2 (f)	GTAACTTACGAGTAAACTGGCTAC
TPT-2 B (f)	GACCATTAACCCTACCATAACTCC
TPT-2 (r)	TGACTAGCCATGGATACTTGGCGAGGA
LB_{tpt-2} (f)	GTCCGCAATGTGTTATTAAGTTGTC
	***xpt-1* mutant**
XPT-1 (f)	GGCTTTCACCGATTCCCAA
XPT-1 (r)	ATCAAGTAGACGAGGTCAAGAACTAAGTA
LB_{xpt-1} (f)	CATTTTATAATAACGCTGCGGACATCTAC
	***ppt2-1* mutant**
PPT2-1 (f1)	GCCAAGTCTACTCCTGAA
PPT2-1 (r1)	CTAAAGAGACTCCAGCGA
PPT2-1 (f2)	GGGTTTATCCATATCCAGCGAC
PPT2-1 (r2)	GCAAGAGAACAGAAAGCAAGACGG
	***ppt2-2* mutant**
PPT2-2 (f)	GCAGTAGCTCACACGTTAGGG
PPT2-2 (r)	AATAACCACCACACGCTTCAC
LB_{ppt2-2} (f) = LB_{tpt-2} (f)	

B RT-PCR

RT_*PPT2*(f)*	*CACC* ATGTTCGCTCTCACATTTCTAAATCC
RT_*PPT2*(r)	AGACATTTTTGGATTTGGTTTGACTTGGACTCG
RT_*Actin2* (f)	TTGGTAGGCCAAGACATCAT
RT_*Actin2* (r)	GGAGCCTCGGTAAGAAGAAC

*The same primer was or can be used for TOPO cloning

C Yeast expression

XPT TOPO (f)	*CACC* ATGATCTCCCTGAATCTATCTCCT
XPT (r)	GTTCTTCTTATCACCTCCCACTTCAATC

Supplementary Table 2. Statistical analysis (ANOVA/Tukey-Kramer) of growth parameters of wild-type and mutant plants. (**A**) Growth rates of leaf rosettes were determined for plants grown in soil at a PFD of 150 µmol·m^{-2}·s^{-1} in the long-day (Supplementary Figure 6A and B). (**B**) For the determination of photosynthesis parameters three week old soil-grown plants were dark-adapted for 30 min. Photosynthesis was induced with actinic light at a PFD of 164 µmol·m^{-2}·s^{-1}. Relative ETR$_{(800)}$ was determined from light curves at a PFD of 800 µmol·m^{-2}·s^{-1} (Table 2, main article; Supplementary Figure 6). The biotypes are denoted, ***a*** = Col-0, ***b*** = *ppt2-1*, and ***c*** = *ppt2-2.* The significance levels of $P < 0.05$ or $P < 0.01$ are indicated by light or dark blue colors.

A
3 comparisons

Growth characteristics	***b vs a***	***c vs a***	***b vs c***
Rosette area			
13 DAS			
17 DAS			
21 DAS			
Rosette fw			
13 DAS			
17 DAS			
21 DAS			
Rosette specific fw			
13 DAS			
17 DAS			
21 DAS			

B

Chl *a* fluorescence parameters	***b vs a***	***c vs a***	***b vs c***
PAM			
F_v/F_m-ratio			
$\Phi PSII_{(164)}$			
$\Phi NPQ_{(800)}$			
$\Phi NO_{(800)}$			
Relative ETR$_{(800)}$			

Supplementary Table 3. Statistical analysis (ANOVA/Tukey-Kramer) of growth, photosynthesis, and leaf parameters in wild-type and mutant plants. (A) Growth parameters of rosette leaves were assessed of plants grown in soil under long-day conditions at a PFD of 150 $\mu mol \cdot m^{-2} \cdot s^{-1}$ (see Figure 6D, main article). Generative growth parameters are contained in Table 3 (main article). Chl fluorescence parameters (**B**) and leaf composition (**C**) contained in Table 4 (**A** and **B**; main article) and for non-photochemical quench parameters in Supplementary Figure 8. The biotypes are denoted, ***a*** = Col-0, ***b*** = Ws-2, ***c*** = *xpt-1*, ***d*** = *cue1-6*, ***e*** = *ppt2-1*, ***f*** = *cue1-6/ppt2-1*, ***g*** = *cue1-6/xpt*-1, and ***h*** = *cue1-6/ppt2-1/xpt-1*. DAS = days after sowing. The significance levels of $P < 0.05$ or $P < 0.01$ are indicated by light or dark blue colors.

A
8 comparisons

	b vs a	***c vs a***	***d vs a***	***e vs a***	***f vs a***	***g vs a***	***h vs a***	***c vs b***	***d vs b***	***e vs b***	***f vs b***	***g vs b***	***h vs b***	***d vs c***	***e vs c***	***f vs c***	***g vs c***	***h vs c***	***e vs d***	***f vs d***	***g vs d***	***h vs d***	***f vs e***	***g vs e***	***h vs e***	***g vs f***	***h vs f***	***h vs g***
Rosette area																												
11 DAS																												
15 DAS																												
19 DAS																												
22 DAS																												
Generative growth																												
Final height																												
Silique number																												

Supplementary Table 3 (continued)

B

Chl *a* fluorescence parameters	***b* vs *a***	***c* vs *a***	***d* vs *a***	***e* vs *a***	***f* vs *a***	***g* vs *a***	***h* vs *a***	***c* vs *b***	***d* vs *b***	***e* vs *b***	***f* vs *b***	***g* vs *b***	***h* vs *b***	***d* vs *c***	***e* vs *c***	***f* vs *c***	***g* vs *c***	***h* vs *c***	***e* vs *d***	***f* vs *d***	***g* vs *d***	***h* vs *d***	***f* vs *e***	***g* vs *e***	***h* vs *e***	***g* vs *f***	***h* vs *f***	***h* vs *g***
F_v/F_m			■		■	■	■		■		■	■	■	■		■	■	■	■			■	■	■	■		■	■
$\Phi PSII_{(164)}$			■			■	■		■			■	■	■			■	■	■			■	■	■	■		■	▒
$\Phi NPQ_{(800)}$																												
$\Phi NO_{(800)}$			■		■	■	■		■		■	■	■	■		■	■	■	■			■	■	■	■	▒	■	
Relative $ETR_{(800)}$			■		■	■	■		■		■	■	■	■		■	■	■	■				■	■	■			

C

Leaf parameters	***b* vs *a***	***c* vs *a***	***d* vs *a***	***e* vs *a***	***f* vs *a***	***g* vs *a***	***h* vs *a***	***c* vs *b***	***d* vs *b***	***e* vs *b***	***f* vs *b***	***g* vs *b***	***h* vs *b***	***d* vs *c***	***e* vs *c***	***f* vs *c***	***g* vs *c***	***h* vs *c***	***e* vs *d***	***f* vs *d***	***g* vs *d***	***h* vs *d***	***f* vs *e***	***g* vs *e***	***h* vs *e***	***g* vs *f***	***h* vs *f***	***h* vs *g***
Chlorophyll			■		■	■	■		■		■	■	■	■		■	■	■	■				■	■	■			
Carotenoids																												
Chl *a/b*-ratio																												
Chl/Car-ratio			■		■	■	■		■		■	■	■	■		■	■	■	■				■	■	■			
Protein																												
Spec. leaf fw			■		■	■	■							▒				▒	■				▒	■	■			

a = Col-0, ***b*** = Ws-2, ***c*** = *xpt-1*, ***d*** = *cue1-6*, ***e*** = *ppt2-1*, ***f*** = *cue1-6/ppt2-1*, ***g*** = *cue1-6/xpt*-1, and ***h*** = *cue1-6/ppt2-1/xpt-1*.

Supplementary Table 4. Statistical analysis (ANOVA/Tukey-Kramer) of transport rates determined with the proteoliposome system. The transport rates ΔP_i and ΔPEP indicate the unspecific gluconate rate was substracted (see Figure 7, main article). The biotypes are denoted, ***a*** = Col-0, ***b*** = *ppt2-1*, ***c*** = *cue1-6*, ***d*** = *cue1-6/ppt2-1,* and ***e*** = *cue1-6/ppt2-1/xpt-1*. The significance levels of $P < 0.05$ or $P < 0.01$ are indicated by light or dark blue colors.

5 comparisons

Transport rates	***b vs a***	***c vs a***	***d vs a***	***e vs a***	***c vs b***	***d vs b***	***e vs b***	***d vs c***	***e vs c***	***e vs d***
ΔP_i										
ΔPEP										