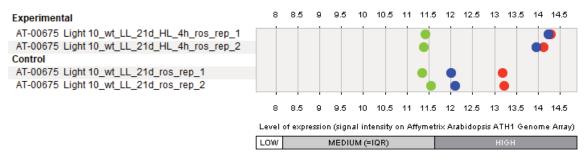
# SUPPLEMENTAL FIGURES

Viridiplantae Embryophyte Marchantia polymorpha v3.1 Physcomitrella patens v3.3 Sphagnum fallax v0.5 Tracheophyte fiiv1.0 Angiosperm Anenas comosus v3 Amborella trichopoda v1.0 Musa acuminata v1 Spirodela polyrhiza v2 Zostera marina v2.2 us v3 .... Grass Brachypodium distachyon v3.1 Brachypodium stacei v1.1 Oryza sativa v7\_JGI Oropetium thomaeum v1.0 Panicoideae Panicum hallii v2.0 Panicum virgatum v1.1 Setaria italica v2.2 Setaria viridis v1.1 Sorghum bicolor v3.1 Zea mays Ensembl-18 Zee mays PH207 v1.1 Eudicot 00131 Pentapetalae driacus v1.0 Asterid Daucus carota v2.0
Mimulus guttatus v2.0
Solanum lycopersicum iTAG2.4
Solanum tuberosum v4.03 Kalanchoe fedtschenkoi v1.1 Kalanchoe laxiflora v1.1 Rosid lus grandis v2.0 fera Genoscope. 12X Malvidae - Malpighiales Linum usitatissimum v1.0
Manihot esculenta v6.1
Populus trichocarpa v3.0
Ricinus communis v0.1
Salix purpurea v1.0 SBM Citrus Citrus sinensisv1.1 Citrus clementina v1.0 - Brassicales-Malvales Carica papaya ASGPBv0.4 Gossypium raimondii v2.1 Theobroma cacao v1.1 - Brassicaceae Arabidopsishellerivi.1 Arabidopsishellerivi.1 Arabidopsishellerivi.1 Arabidopsishellerivi.1 Boschers stricta v1.2 Brassice olerade capitate v1.0 Brassice olerade Popu.1.3 Capselli grandiflow v1.1 Capselli grandiflow v1.1 Capselli grandiflow v1.0 - Fabidae FaDICIAE
Cocumis sativas v1.0
Fragaria vesca v1.1
Glycine max Vim82 a2 v1
Melus dormestica v1 0
Medicago truncatula Mt4.0v1
Phaseolus vulgeris v2.1
Prunus persica v2.1
Trifolium pratense v2 Chlorophyte v5.5 Chlamydomonas reinhan Dunaliella salina v1.0 Volvox carteri v2.1 Volvox carteri v2.1 Coccomyxa subellipsoidea C-169 v2.0 Micromonas pusilla CCMP1545 v3.0 Micromonas sp. RCC299 v3.0 Ostreococcus lucimarinus v2.0 

# Supplemental Figure 1: Presence of the PSAT genes in the clade Viridiplantae

The presence of the *PSAT* genes in the clade *Viridiplantae* is shown. Red boxes indicate the number of *PSAT* isoforms.

#### Detailed view of selected perturbations (absolute expression levels)

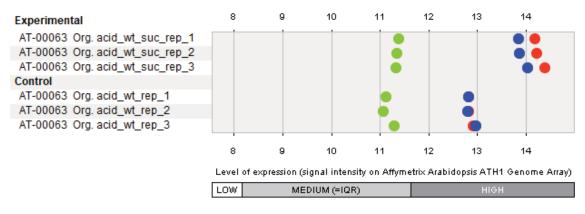


created with GENEVESTIGATOR

## Supplemental Figure 2: High-light-induced expression of PPSB genes

Public available gene expression data are shown (<u>https://genevestigator.com/gv/</u>). The expression of *PGDH1* (red), *PSAT1* (blue) and *PSP* (green) is shown in shoot tissue of wild type plants grown for three weeks on soil under 16h low-light (30  $\mu$ mol <sub>(photons)</sub> m<sup>-2</sup> s<sup>-1</sup>) at 22°C / 8h dark at 18°C cycles, then exposed to high-light (16h (300  $\mu$ mol <sub>(photons)</sub> m<sup>-2</sup> s<sup>-1</sup>) at 22°C / 8h dark at 18°C) for 48h. The plants were shifted to high-light 3.5h after the beginning of the light period.

### Detailed view of selected perturbations (absolute expression levels)



created with GENEVESTIGATOR

## Supplemental Figure 3: Sucrose-induced expression of PPSB genes

Publicly available gene expression data are shown (<u>https://genevestigator.com/gv/</u>). The expression of *PGDH1* (red), *PSAT1* (blue) and *PSP* (green) is shown in seedlings of wild type plants grown on agar plates with (100 mM) or without exogenous sucrose for 3 days.