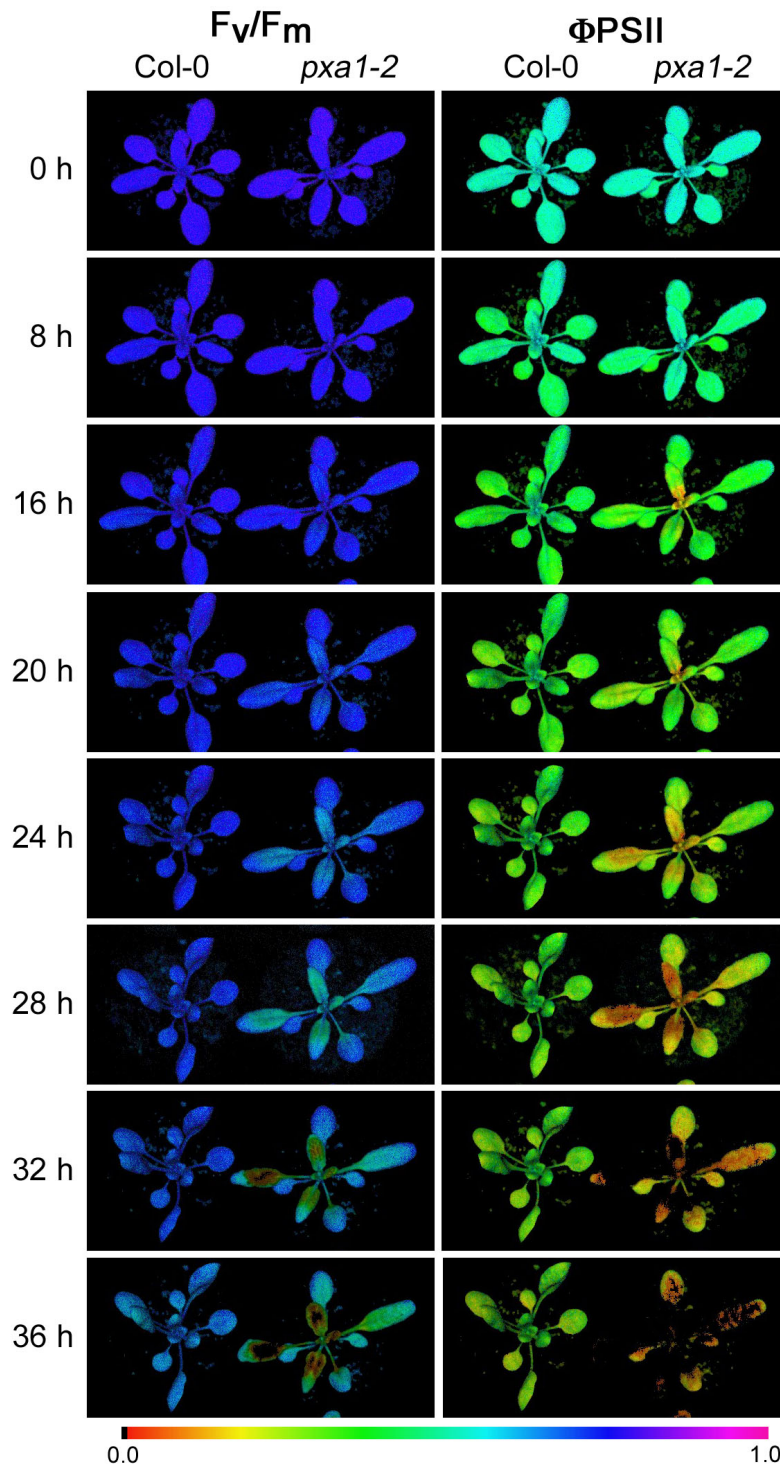


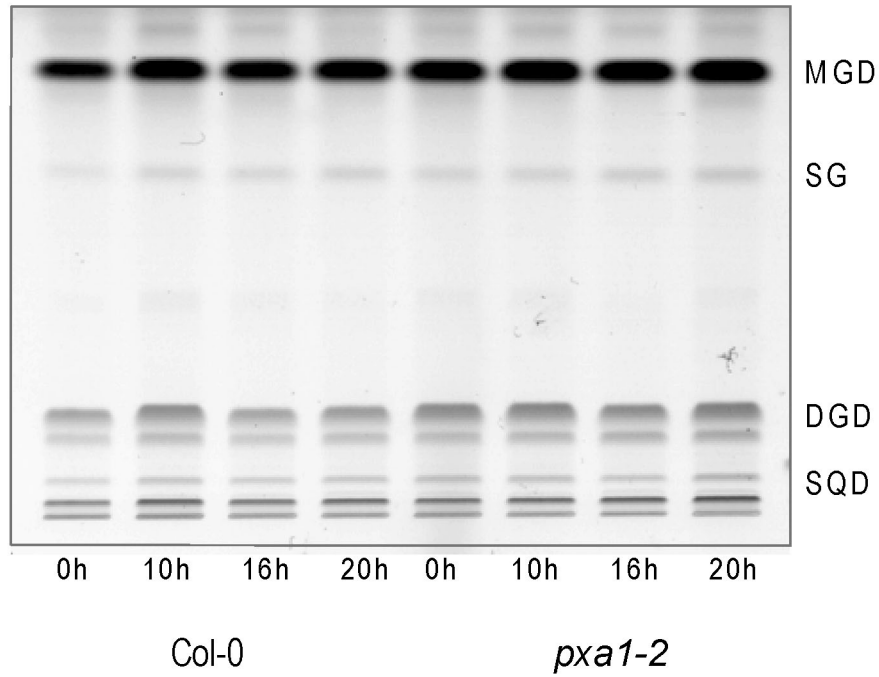
Supplemental Figure 1: Temperature (A) and time dependency (B) of the phenotype.

Col-0 and *pxa1-2* plants were exposed to 36 h of darkness at different ambient temperatures. At 18°C, the phenotype was almost undetectable i.e. the lytic and phototoxic effect after 4 h of re-illumination were almost absent. In comparison, *pxa1-2* showed a dramatic phenotype when temperatures during dark treatment were maintained at 24°.

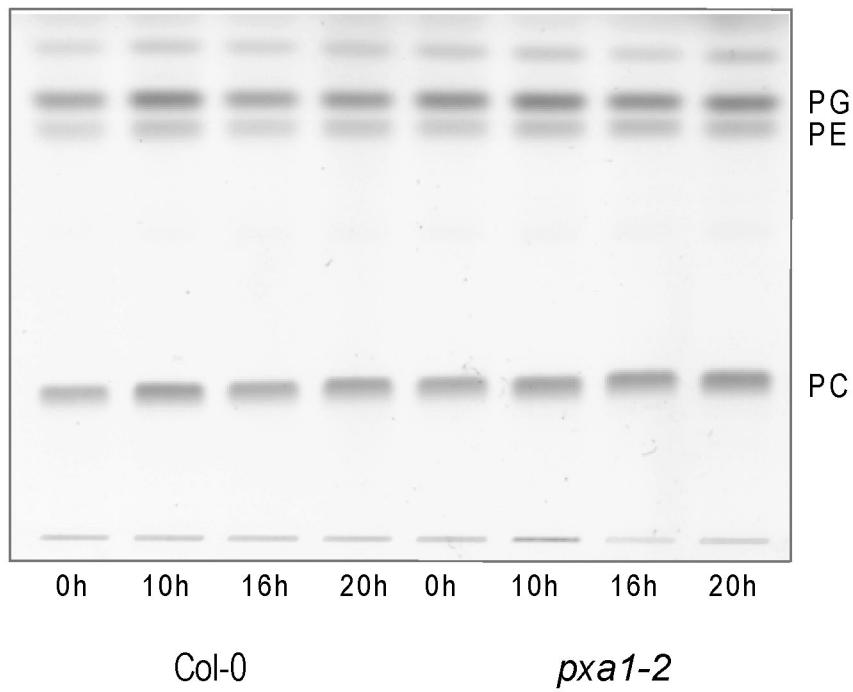


Supplemental Figure 2: Imaging PAM measurements of plants exposed to periods of darkness as indicated, displaying photosynthetic efficiency of PSII ( $\Phi_{PSII}$ ) and variable over maximal fluorescence ratio ( $F_v/F_m$ ). Measurements were performed on plants that had not been exposed to light after dark treatment. Images were taken at the same time point of induction.

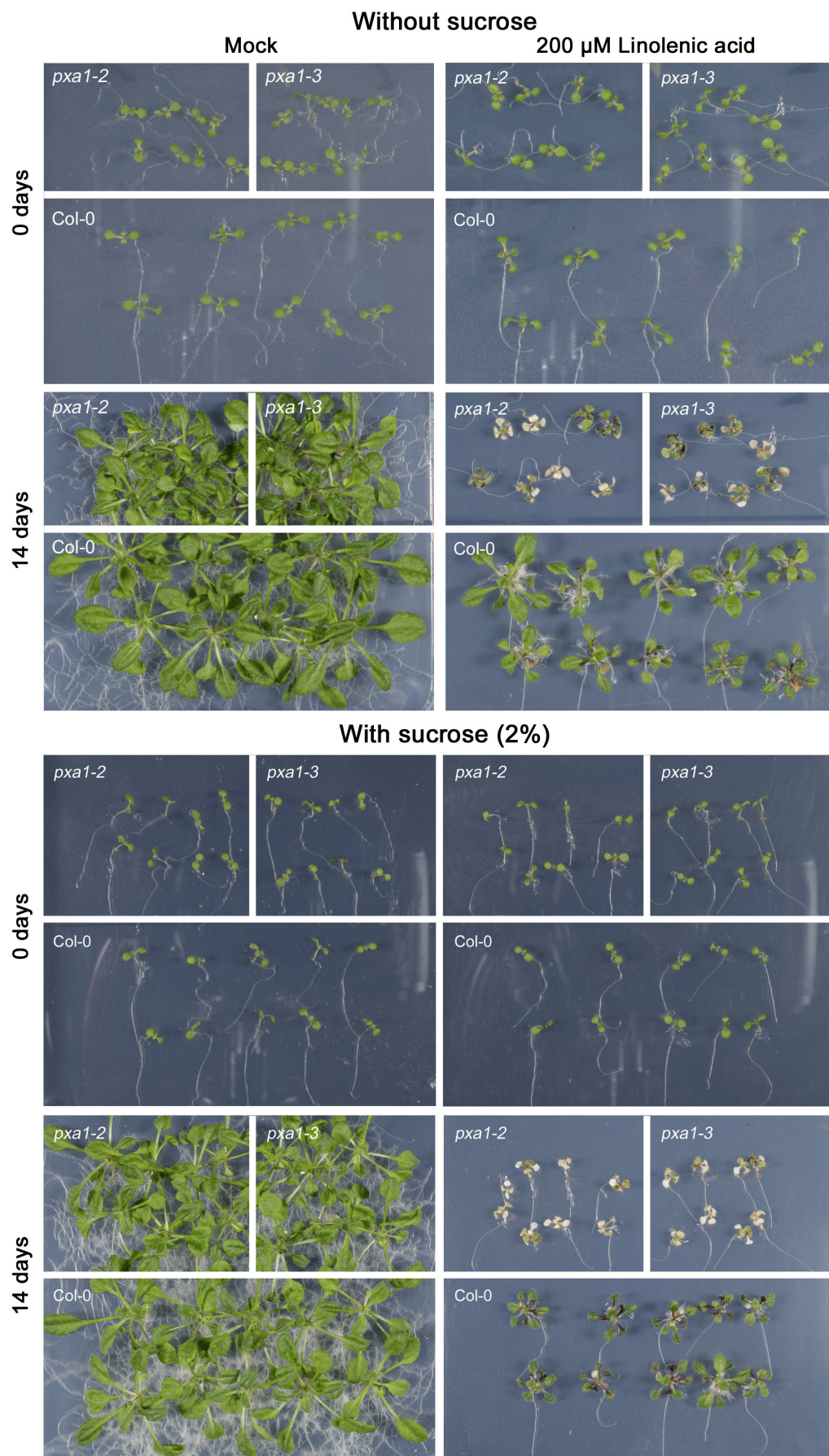
A



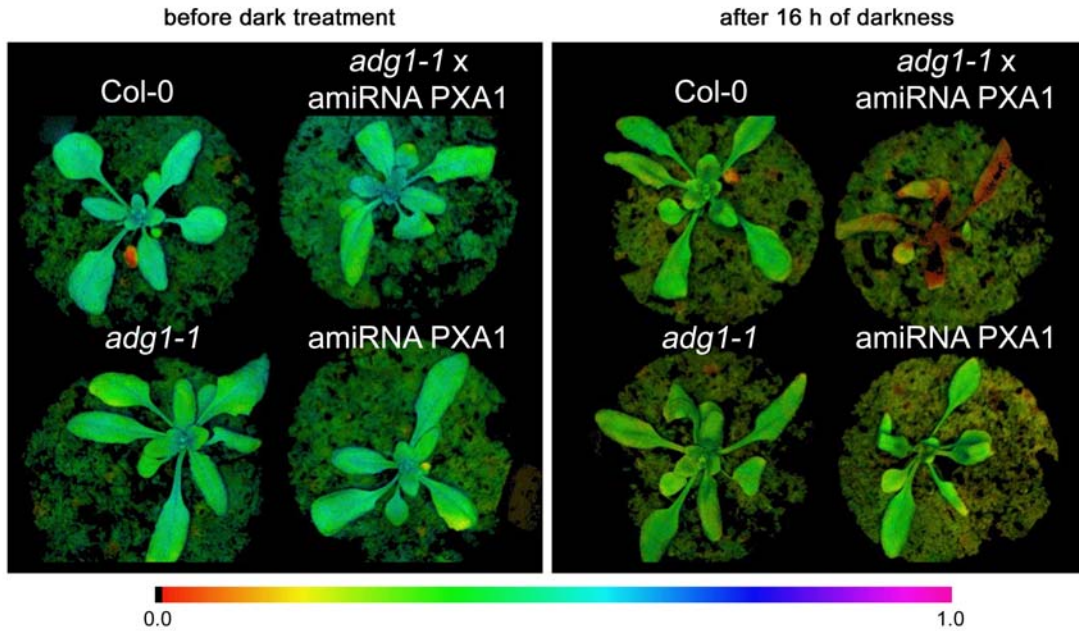
B



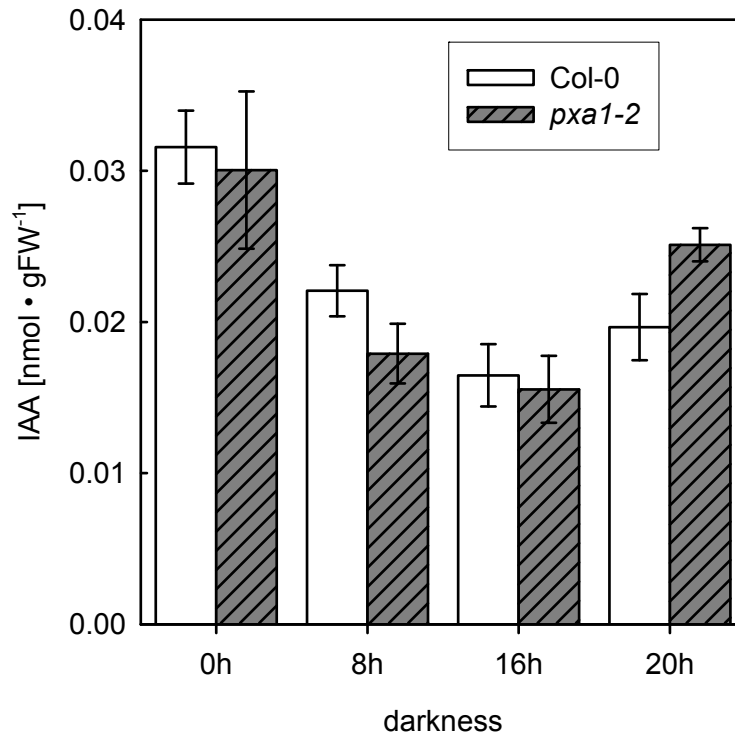
Supplemental Figure 3: TLC of glycolipids (A) and phospholipids (B) of dark-treated *pxa1-2* and *Col-0* plants. MGD: Monogalactosyldiacylglycerol, DGD: Digalactosyldiacylglycerol, SQD: Sulfoquinovosyldiacylglycerol, SG: Sterylglucoside, PC: Phosphatidylcholine, PE: Phosphatidylethanolamine, PG: Phosphatidylglycerol



Supplemental Figure 4: Impact of  $\alpha$ -linolenic acid on plant growth. Plants were transferred from regular  $\frac{1}{2}$  strength MS plates supplemented with 2 % sucrose 10 d after germination on plates as indicated. Pictures were taken on the day of transfer and after 14 days of additional cultivation. Mock: contains 1 % EtOH.



Supplemental Figure 5:  $\Phi$ PSII indicating photosystem II integrity in Col-0, *adg1-1* x amiRNA PXA1, *adg1-1* single mutant and amiRNA PXA1 plants before and after dark treatment.  $\Phi$ PSII is strongly decreased in *adg1-1* x amiRNA PXA1 plants after 16 h of darkness, while *adg1-1* and amiRNA PXA1 single mutants appear like wild type at this time point.



Supplemental Figure 6: Indole acetic acid (IAA) concentrations in leaves of wild-type and *pxa1-2* plants exposed to different periods of darkness. No differences in IAA concentrations could be detected between wild type and *pxa1-2*. Average  $\pm$  SE, (n=4).