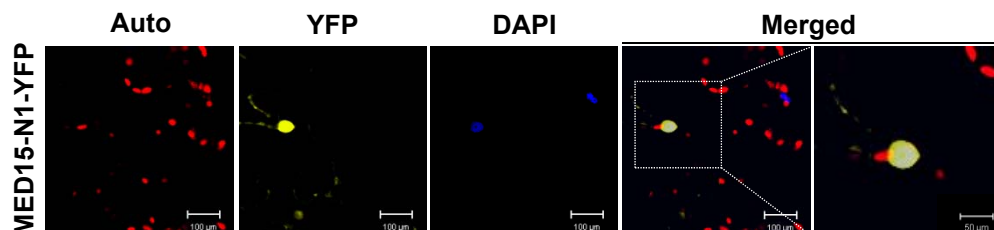


# Supplemental Figure S1



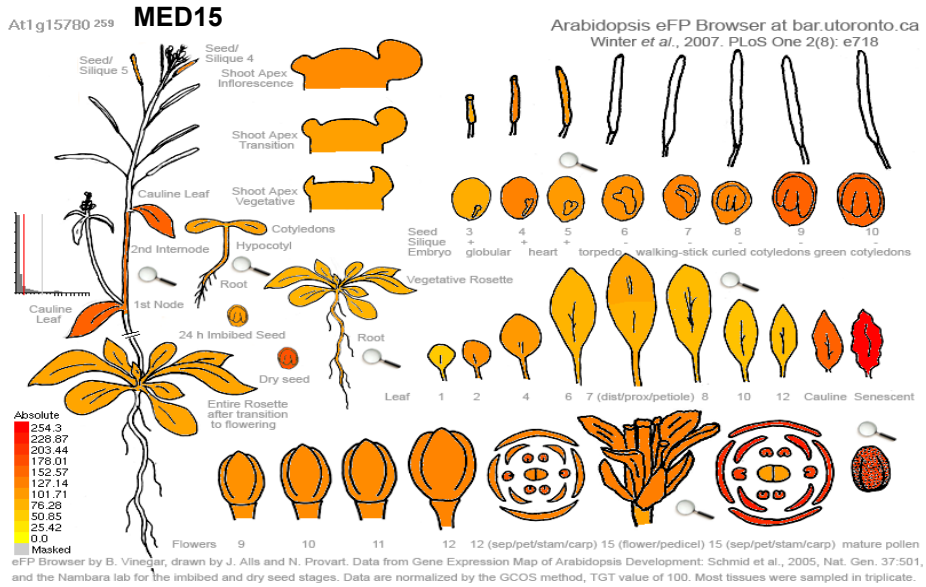
## Supplemental Figure S1. Subcellular localization of MED15-N1-YFP.

Fluorescent signals were captured using YFP channel of a confocal microscope. Nuclei were visualized by DAPI staining. The white dotted square area in the merged image was enlarged in the right panel.

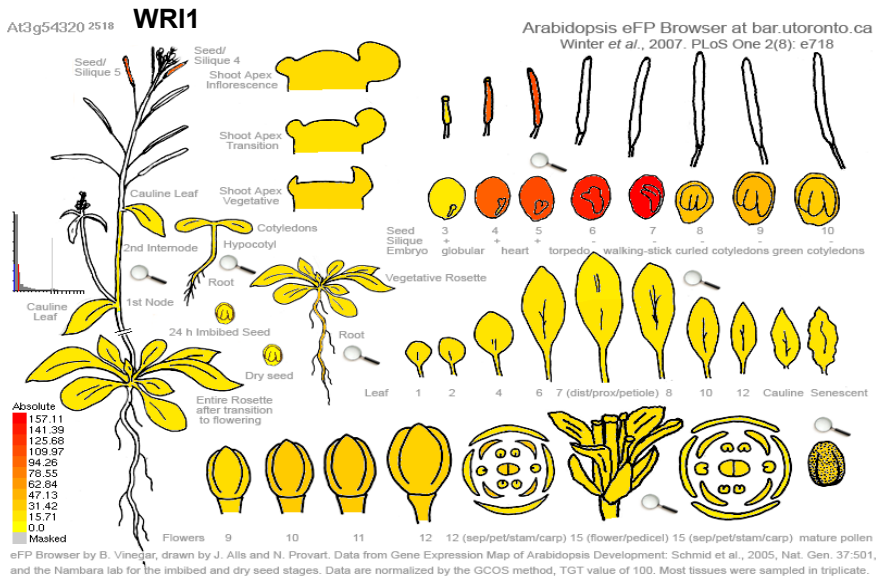
Scale bar=100 μm for all images except enlarged images (50 μm). Auto, auto-fluorescence of chloroplasts; YFP, YFP channel image; DAPI, DAPI channel image; Merged, merged image between YFP and DAPI.

# Supplemental Figure S2

**A**



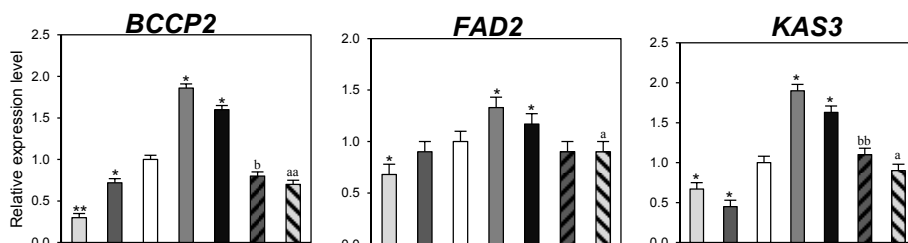
**B**



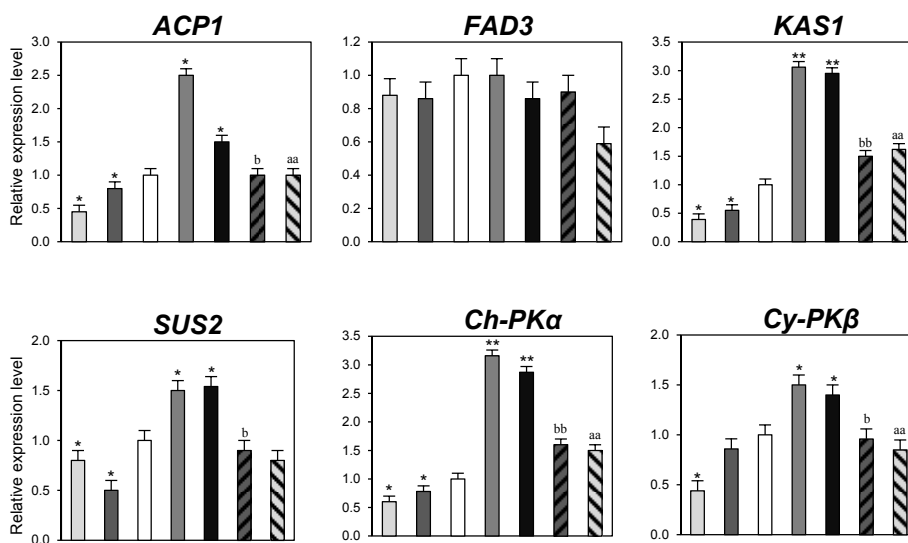
**Supplemental Figure S2.** Organ/tissue expression pattern of *MED15* (A) and *WR11* (B) derived from the Arabidopsis eFP Browser 2.0.

# Supplemental Figure S3

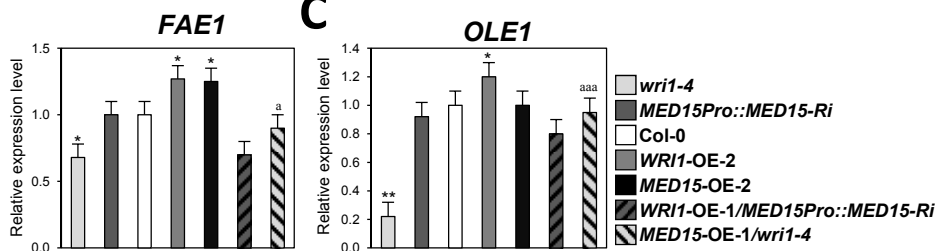
**A**



**B**



**C**



**Supplemental Figure S3.** Expression profiles of fatty acid biosynthetic genes in developing young seeds and siliques of transgenic Arabidopsis plants with different *MED15* and *WRI1* expression levels.

A, Expression levels of *Biotin carboxyl carrier protein 2* (*BCCP2*), *Fatty acid desaturase 2* (*FAD2*), and *Ketoacyl-ACP synthase 3* (*KAS3*) in WT (*Col-0*), *wri1-4*, *MED15Pro::MED15-Ri*, *WRI1-OE-2*, *MED15-OE-2*, *WRI1-OE-1/MED15Pro::MED15-Ri* and *MED15-OE-1/wri1-4* transgenic plants.

B, Expression levels of *Acyl carrier protein 1* (*ACP1*), *Fatty acid desaturase 3* (*FAD3*), *Ketoacyl-ACP synthase 1* (*KAS1*), *Sucrose synthase 2* (*SUS2*), *Chloroplast pyruvate kinase* (*Ch-PK $\alpha$* ), *Cytosol pyruvate kinase* (*Cy-PK $\beta$* ), and *Fatty acid elongase 1* (*FAE1*) in WT (*Col-0*), *wri1-4*, *MED15Pro::MED15-Ri*, *WRI1-OE-2*, *MED15-OE-2*, *WRI1-OE-1/MED15Pro::MED15-Ri* and *MED15-OE-1/wri1-4* transgenic plants.

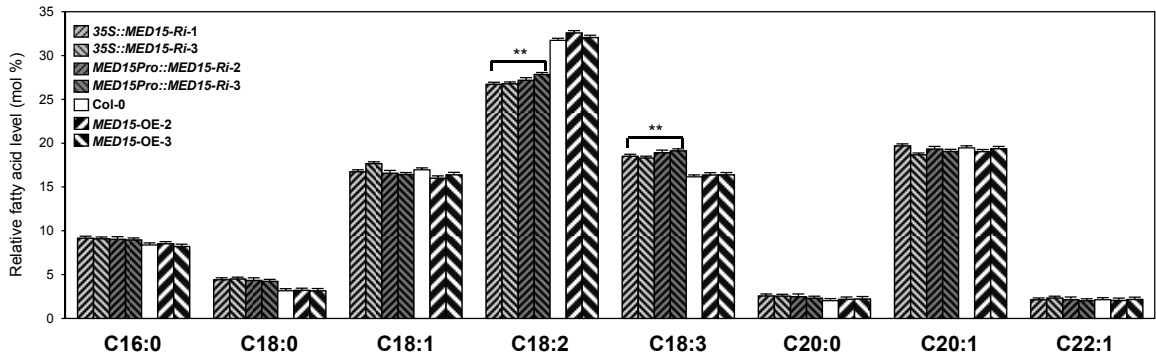
C, Expression level of *Oleosin 1* (*OLE1*) in WT, *wri1-4*, *MED15Pro::MED15-Ri*, *WRI1-OE-2*, *MED15-OE-2*, *WRI1-OE-1/MED15Pro::MED15-Ri* and *MED15-OE-1/wri1-4* transgenic plants.

The expression values were normalized using *ACTIN1* as an internal control.

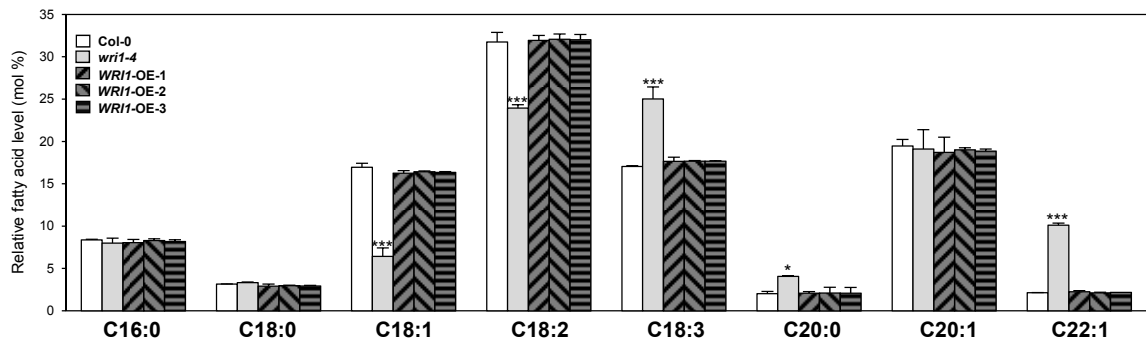
Each experiment was repeated with three biological replicates. Student's *t*-test; \**P* < 0.05, \*\**P* < 0.01, or \*\*\**P* < 0.001 versus WT (*Col-0*). <sup>a</sup>*P* < 0.05, <sup>aa</sup>*P* < 0.01, or <sup>aaa</sup>*P* < 0.001 versus *wri1-4*. <sup>b</sup>*P* < 0.05, <sup>bb</sup>*P* < 0.01, or <sup>bbb</sup>*P* < 0.001 versus *MED15Pro::MED15-Ri*. Error bars represent SD.

# Supplemental Figure S4

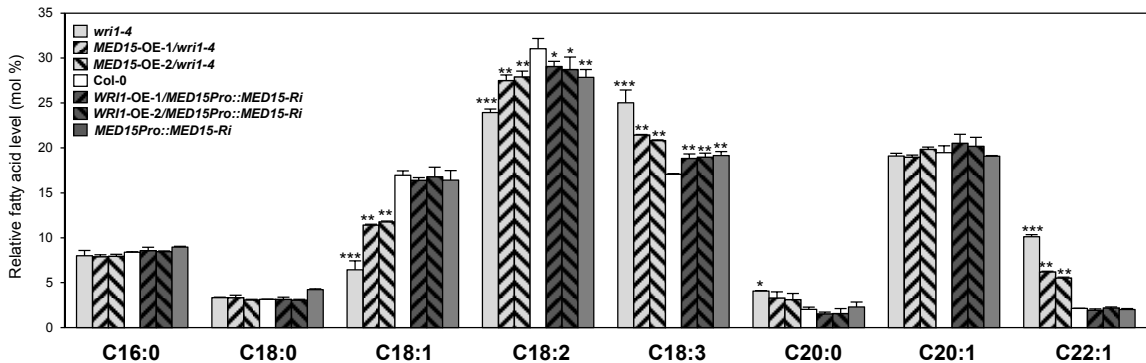
## A



## B



## C



**Supplemental Figure S4.** Fatty acid profiles in mature seeds of transgenic *Arabidopsis* plants with different *MED15* and *WR11* expression levels.

A, Fatty acid profiles in seeds of WT (Col-0), *35S::MED15-Ri* (#1 and 3), *MED15Pro::MED15-Ri* (#2 and 3), and *MED15-OE* (#2 and 3) lines.

B, Fatty acid profiles in seeds of WT (Col-0), *wri1-4*, *MED15-OE/wri1-4* (#1 and 2) lines.

C, Fatty acid profiles in seeds of WT (Col-0), *wri1-4*, *WR11-OE* (#1 and 2), *WR11-OE/MED15Pro::MED15-Ri* (#1 and 2) and *MED15Pro::MED15-Ri* lines. Experiment was performed with 100 seeds per line with 5 biological replicates.

Student's *t*-test; \**P* < 0.05, \*\**P* < 0.01, or \*\*\**P* < 0.001 versus WT (Col-0). *n*=500. Error bars represent SD.