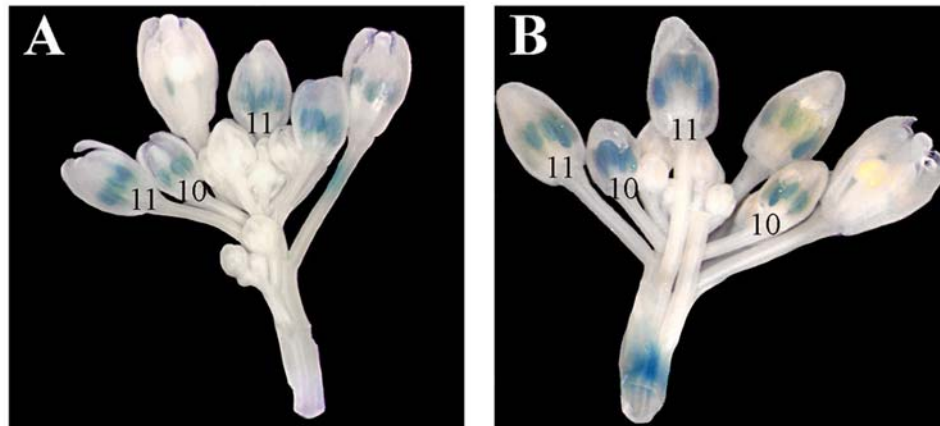


Supplemental Data. Cecchetti et al. (2008). Auxin regulates *Arabidopsis* anther dehiscence, pollen maturation and filament elongation.



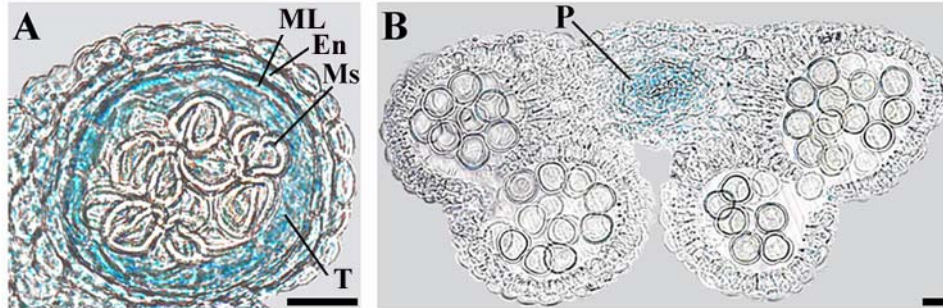
Supplemental Figure 1. Expression of the *DR5:GUS* reporter after water-treatment of *in planta* or excised inflorescences.

(A) Water-treated *in planta* inflorescence showing GUS staining in anthers at stages 10 and 11. Numbers indicate flower developmental stages; **(B)** Water-treated excised inflorescence showing GUS staining in anthers at stages 10 and 11. Numbers indicate flower developmental stages.



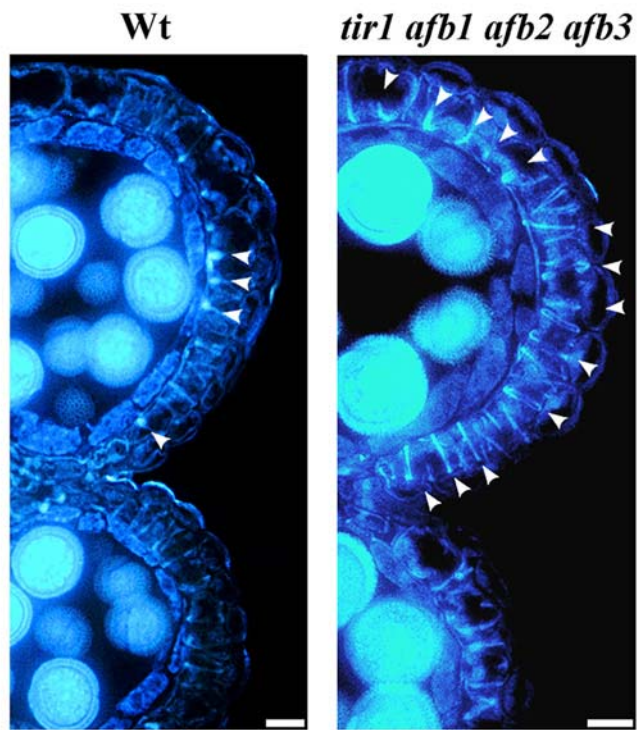
Supplemental Figure 2. RNA *in situ* hybridizations using sense probes of *YUC* genes.

(A) Transverse section of an anther at early stage 9: no specific signal with *YUC2* sense probe; (B) Transverse section of a stamen filament at late stage 9: no specific signal with *YUC2* sense probe; (C) Longitudinal section of an anther at stage 10: no specific signal with *YUC6* sense probe. Bars = 20 μ m. Ms, microspores; Th, theca.



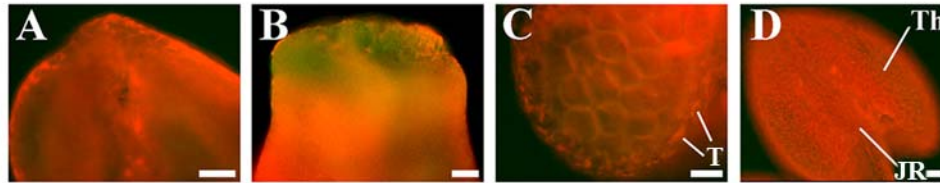
Supplemental Figure 3. Histochemical analysis of transverse sections of *AFB3:GUS* anthers at stages 10 and 12 of development.

(A) Transverse section of an anther at stage 10: detail of the theca showing GUS staining in the tapetum, middle layer, endothecium and in microspores; **(B)** Transverse section of an anther at stage 12 showing GUS staining in the procambium. Bars = 20 μ m. En, endothecium; ML, middle layer; Ms, microspores; P, procambium; T, tapetum.



Supplemental Figure 4. Transverse sections of wild-type and *tir1afb1afb2afb3* anthers at stage 11 of development, visualized by fluorescence microscopy.

Initial endothecium lignification is observed in wild-type anthers, whereas lignification is advanced in *tir1afb1afb2afb3* anthers (arrowheads). Bars = 10 μ m.



Supplemental Figure 5. Fluorescence images of anthers and pistils at different developmental stages from *tir1afb2afb3* expressing the *DR5:GFP* auxin responsive reporter.

(A) Anther at stage 10: detail of the apical region showing no fluorescence. Bar = 30 μm ;

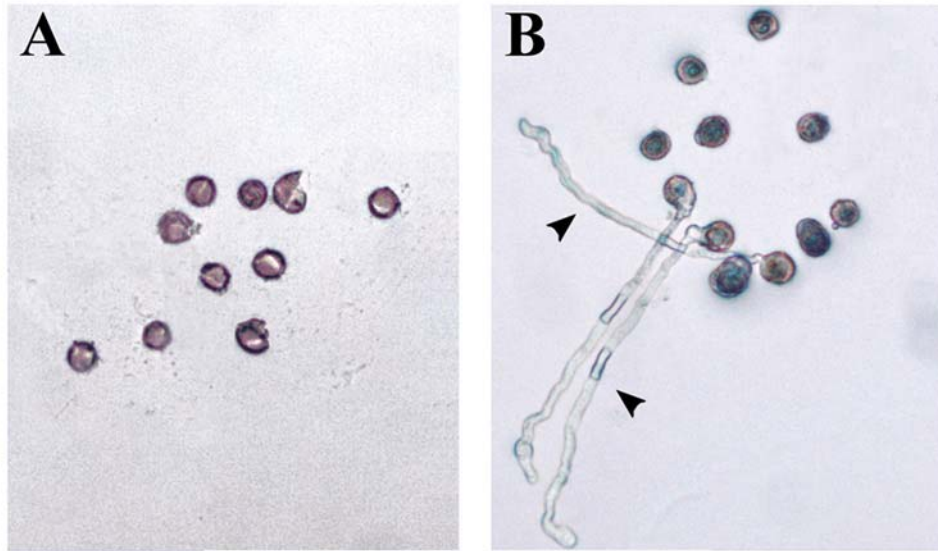
(B) Pistil at stage 10: detail of the apical region showing weak GFP-fluorescence.

Bar = 30 μm ; **(C)** Anther theca at stage 11: hand-cut transverse section showing no

GFP-fluorescence in the remnants of the tapetum. Bar = 30 μm ; **(D)** Anther at stage 11

showing no GFP-fluorescence in the theca and in the junction region between anther and

filament. Bar = 30 μm . JR, junction region; T, tapetum; Th, theca.



Supplemental Figure 6. *In vitro* germination assay of pollen grains from *mdr1 pgp1* indehiscent and early-dehiscing anthers.

(A) Pollen grains from *mdr1 pgp1* non dehiscant anthers at stage 12: no pollen tube formation is observed after 24 h of culture; **(B)** Pollen grains from early-dehiscing anthers of *mdr1 pgp1* flower at stage 12. Pollen tube formation is observed in many pollen grains after 24 h of culture (arrowheads).