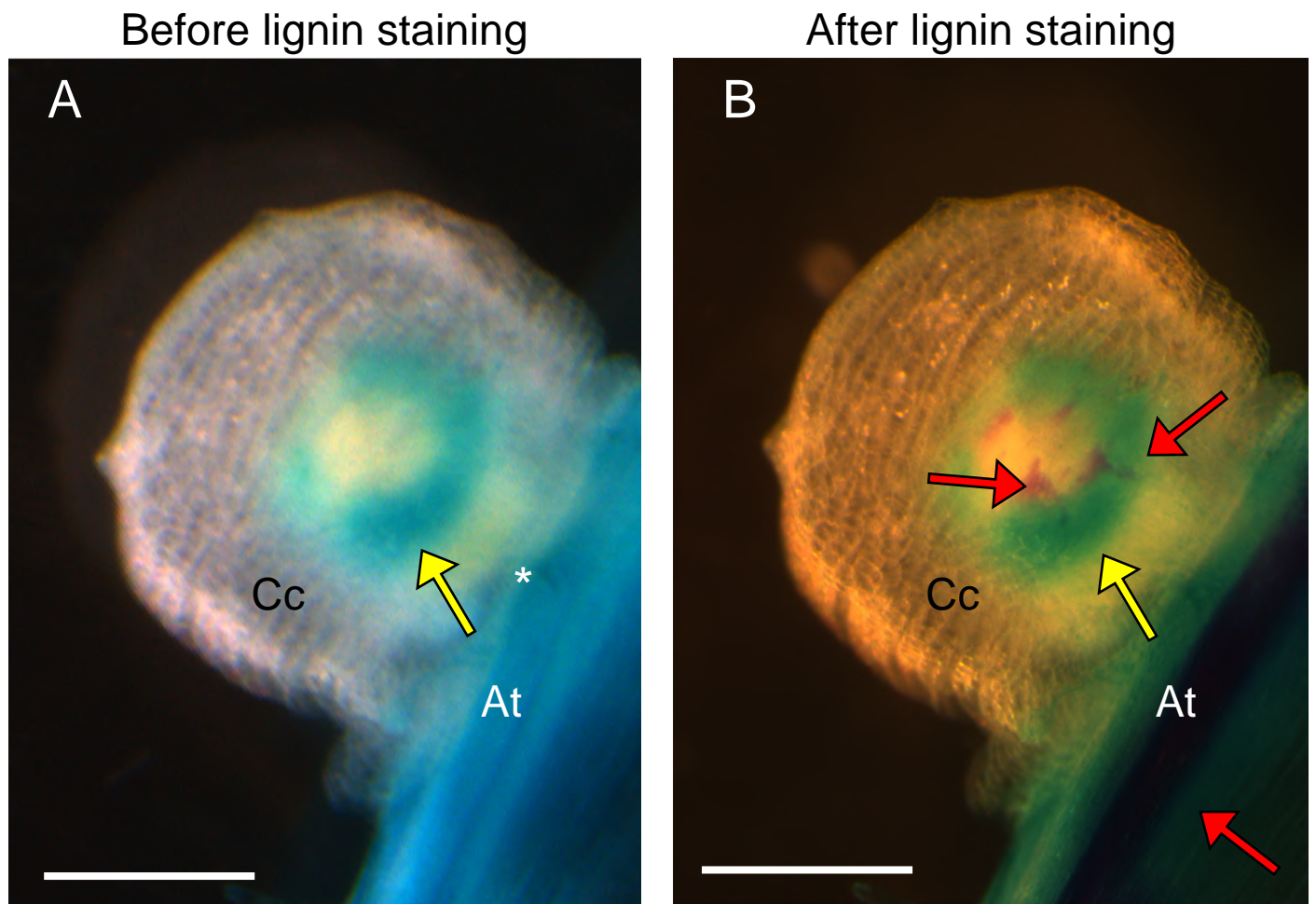
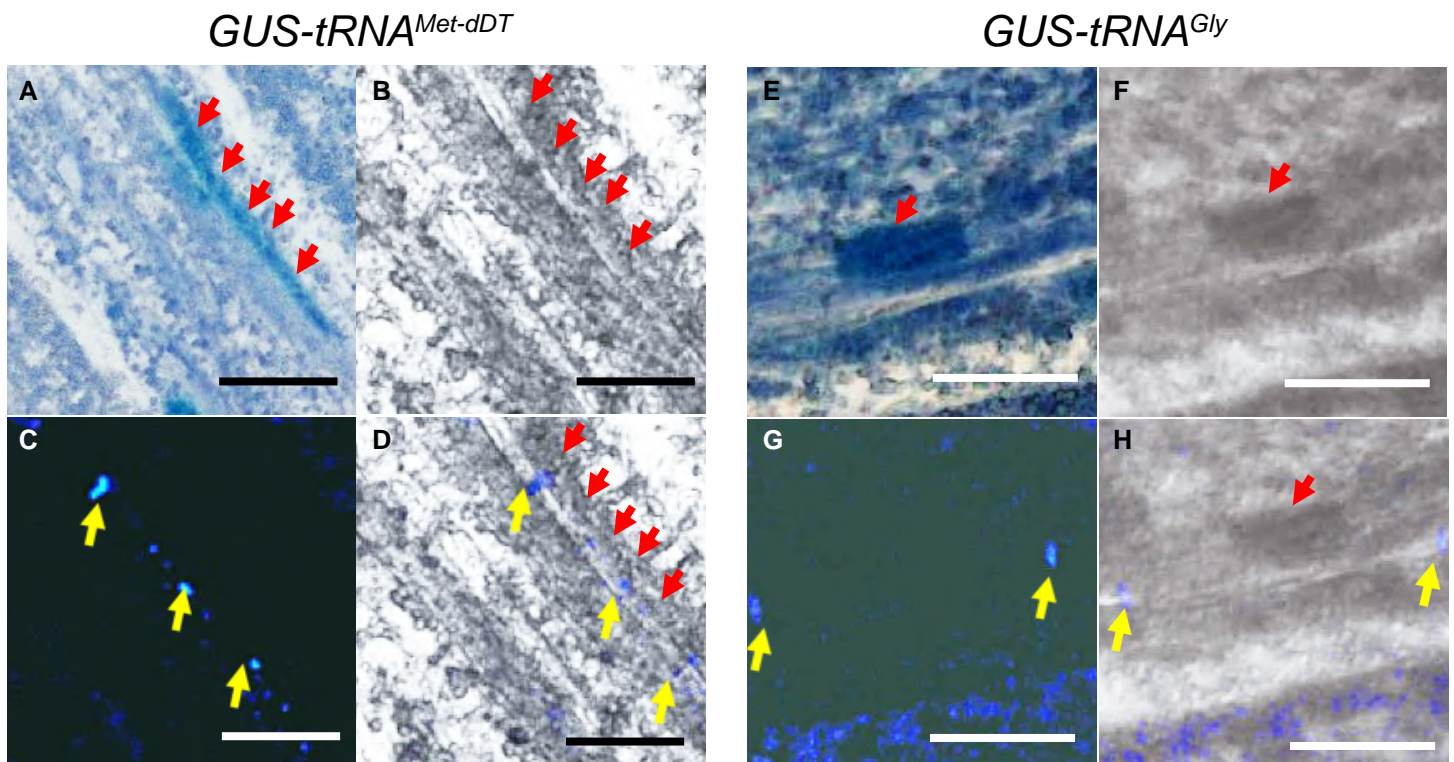


Supplementary Figure 1. GUS staining and quantification of *GUS* transcript levels using *Cuscuta* on 35S:*GUS-tRNA*^{Met} and 35S:*GUS-tRNA*^{Met-dDT} *Arabidopsis*. Tissues were separately harvested from different regions (A). GUS staining of *Cuscuta* on 35S:*GUS-tRNA*^{Met} *Arabidopsis* showed GUS in vascular bundles, several mm from the haustorium (B). *Cuscuta* and host plant tissue were longitudinally sectioned, stained and de-stained. High magnification images of B (C and D). Host stem (E), haustorium (F), 4-6 cm from junction (G), 8-10 cm from junction (H), and 10-12 cm from junction (I) were stained by X-gluc solution for 72 hours. Black arrows indicate GUS stained regions. White scale bars, 500 μ m. Quantification of *GUS* transcripts were performed by real-time RT-PCR (J and K). Vertical axes are copy numbers of *GUS* transcript per 100 ng total RNA. Values indicate means and SEs of 3 replicates. No significant differentiation was detected between each location by Tukey–Kramer honestly significant difference (HSD) test ($\alpha < 0.05$).



Supplementary Figure 2. Histochemical localization of β -glucuronidase and xylem. *Cuscuta* was inoculated on stems of 3 weeks old *Arabidopsis* ($35S:GUS-tRNA^{Met}$) for a week. Haustoria between *Arabidopsis* and *Cuscuta* were longitudinally cross-sectioned. For the GUS staining, sectioned samples were stained with X-gluc solution for 2 hours (A). Without de-staining, same tissue was stained by phloroglucinol-HCl for lignin staining assay, indicated by red arrows (B). The blue color of GUS activity in *Cuscuta* is indicated by yellow arrows. Asterisk indicates haustoria. Red arrows indicate the presence of lignin. Scale bar: 500 μ m.



Supplementary Figure 3. GUS activity detected in the cells adjacent to aniline-blue-stained sieve tube. A 20 μm-thickness paraffin section of *Cuscuta* stem growing on *Arabidopsis* 35S:*GUS-tRNA^{Met-dDT}* (A-D) and 35S:*GUS-tRNA^{Gly}* (E-H). (A and E) Bright field image by upright microscope. (B and F) Transmission image by confocal laser scanning microscopy. (C and G) Fluorescent image of aniline blue-stained sieve plates by confocal laser scanning microscopy. (D and H) (D) and (F) are overlay image of (B) and (C), (F) and (G) respectively. 20 μm paraffin section of *Cuscuta* stem was stained by X-gluc for 24 hours and aniline blue for 45 minutes. Red arrows indicate GUS stained cells. Yellow arrows indicate aniline-blue-stained sieve plates. Scale bar: 20 μm.