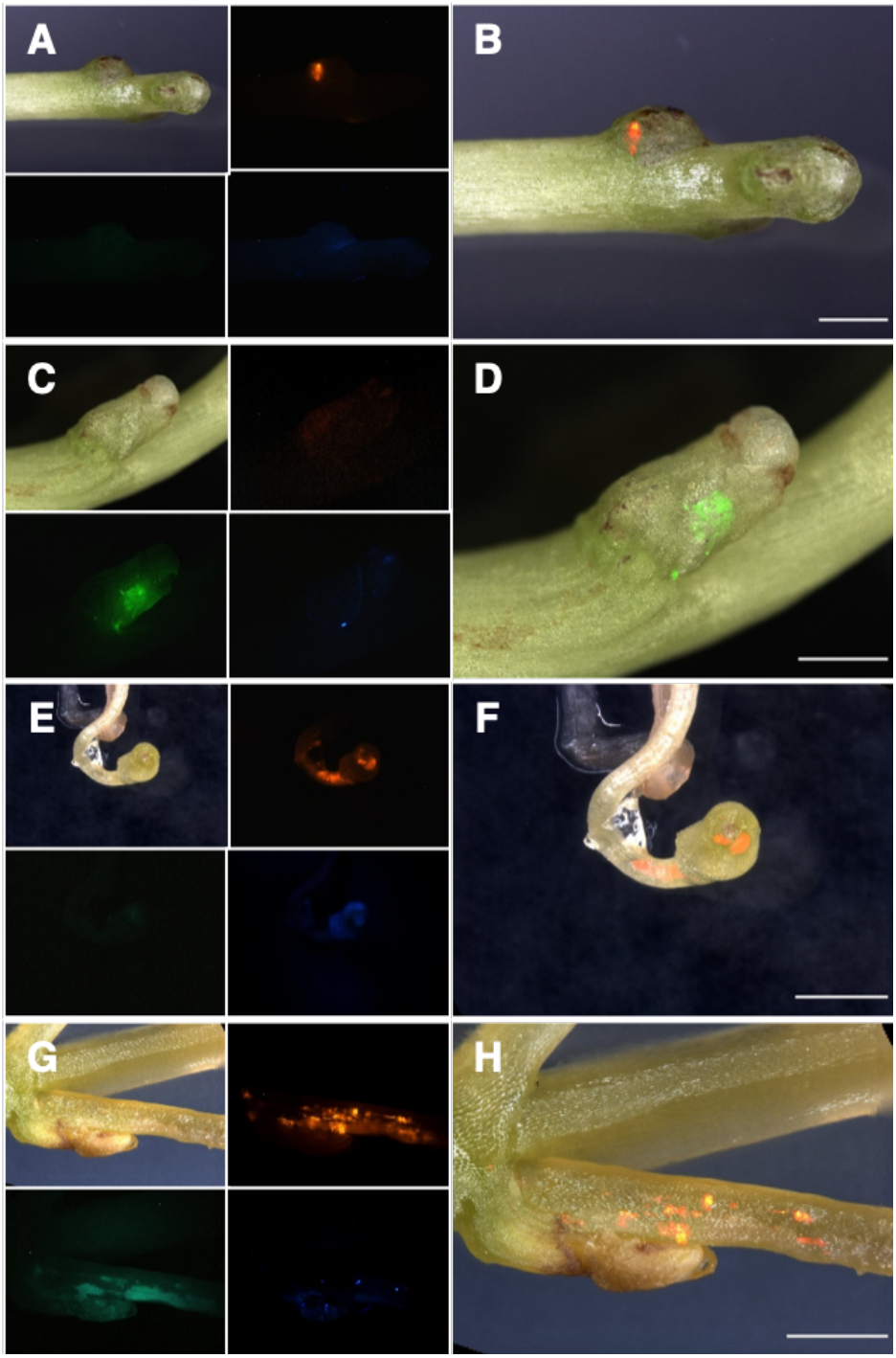
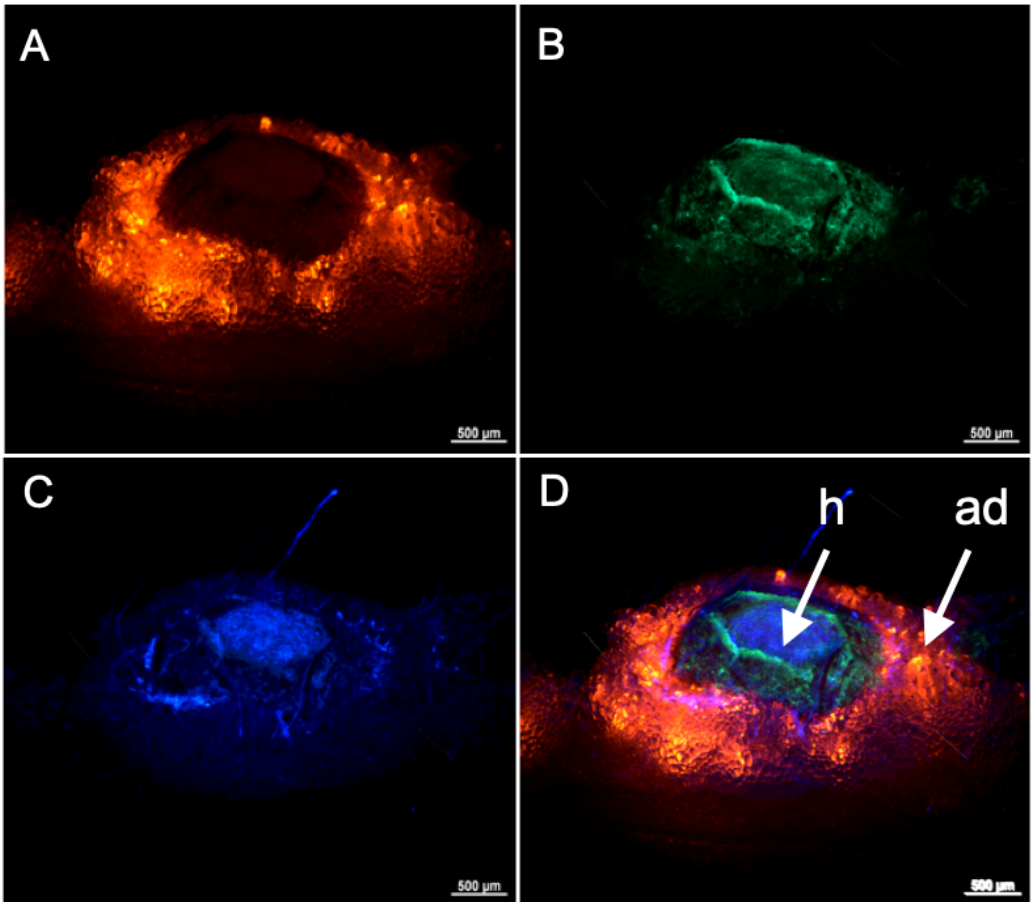
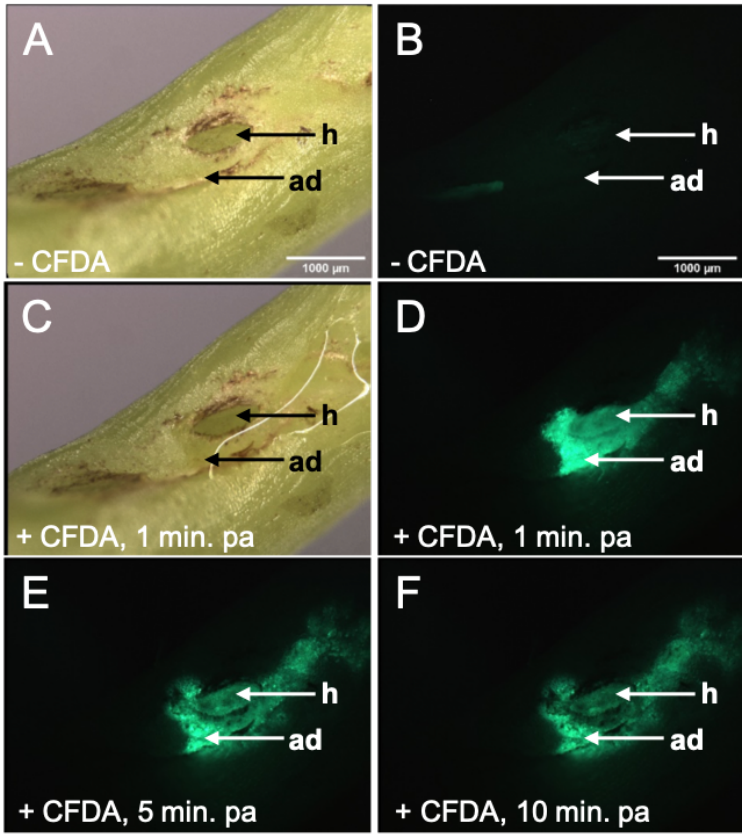


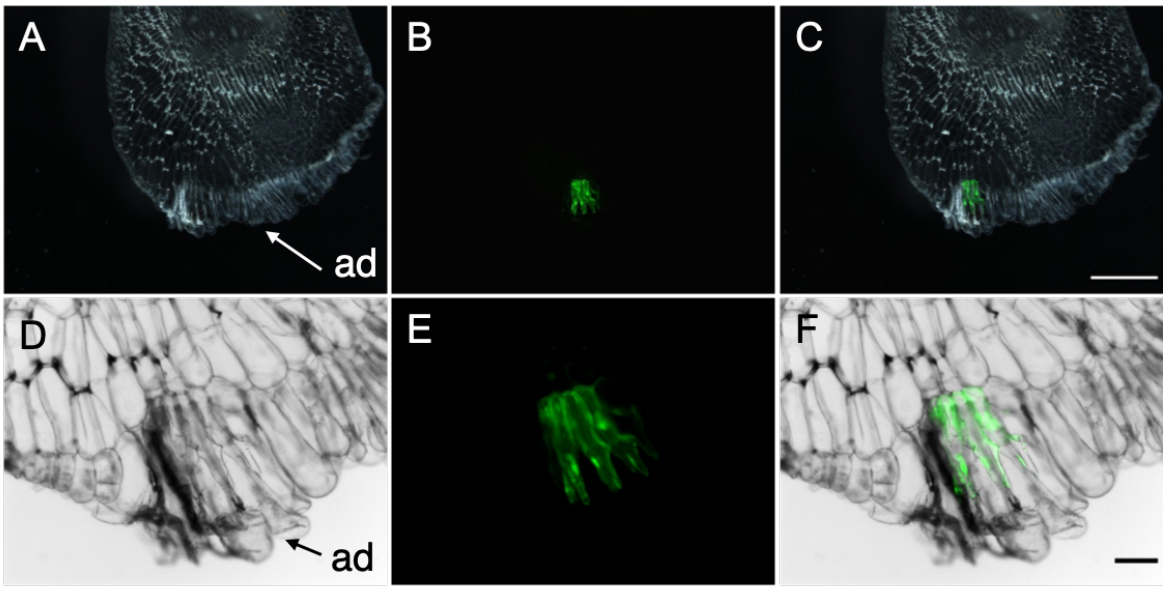
Supplemental Figure S1: Examples for infrequent events of transformation in shoot tips (A and B for *C. reflexa*, E and F for *C. campestris*) and stems (G and H for *C. campestris*) and uptake of CFDA into side shoots in *C. reflexa* (C and D). Clockwise order of small pictures in A, C, E and G starting on top left is bright- or darkfield image, red channel showing the DsRed fluorescence of the binary pRedRoot plasmid, blue channel (autofluorescence) and green channel showing the CFDA fluorescence. Big pictures (B, D, F and H) show overlays of the specific fluorescence and the bright- or darkfield image. Scalebars are 1000 μm.



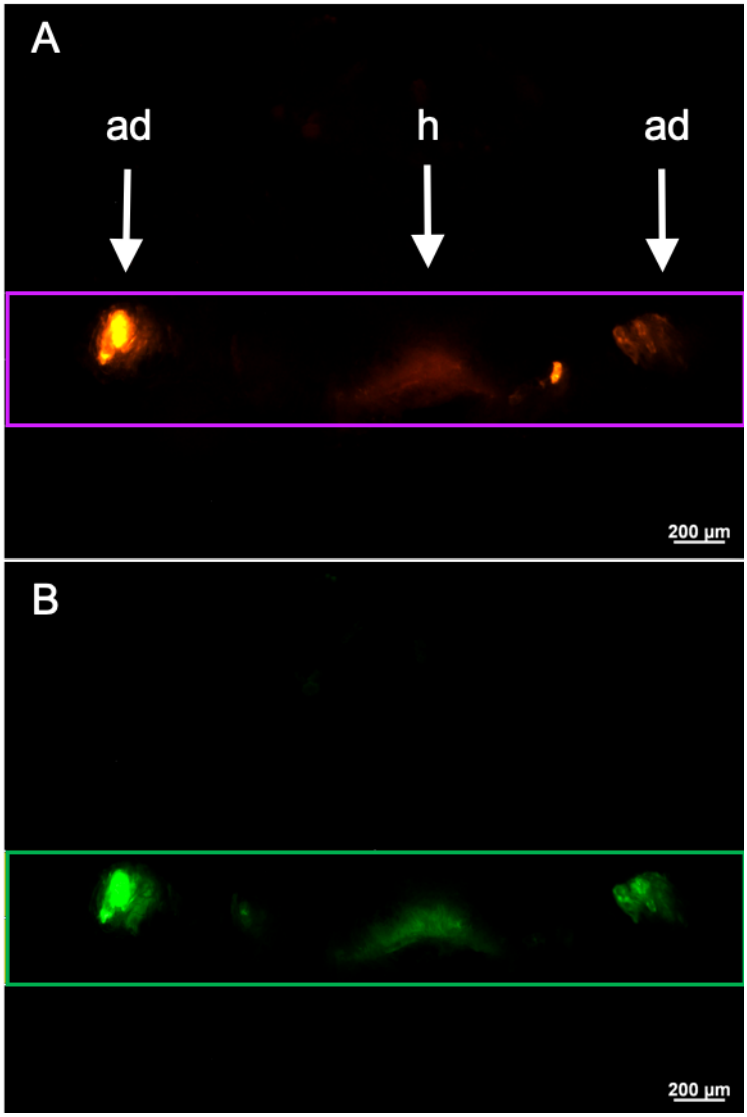
Supplemental Figure S2: Specific fluorescence and autofluorescence of an adhesive disk around a protruding haustorium transformed with *A. rhizogenes* carrying the binary plasmid pRedRoot. The fluorescence in the red (Zeiss filter set 43) (A), green (Zeiss filter set 38) (B) and blue (Zeiss filter set 01) (C) channels are shown in addition to an overlay of the three channels (D). Exposure times were 285 ms for the red channel showing the pRedRoot fluorescence and 400 ms for the green and blue channels, so the autofluorescence revealed by the latter was overexposed relative to the dsRed fluorescence to make the different patterns visible. The adhesive disks (ad) and haustorium (h) are indicated. The scale bar represents 1000 μm.



Supplemental Figure S3: Uptake kinetics of CFDA into the adhesive disk and emerging haustorium. One infection site was monitored by fluorescence microscopy before (A, B) and after (C-F) application of a droplet of CFDA solution to the surface. The brightfield in C shows the reflection of the applied droplet. Fluorescence images were taken in the first minute post application (pa) of the CFDA (D), and after 5 (E) and 10 minutes (F), respectively, using Zeiss filter set 38. Adhesive disks (ad) and haustoria (h) are indicated. The scale bar represents 1 mm.



Supplemental Figure S4. Localization of GFP expressing cells in semi-thin adhesive disk sections of *C. reflexa* upon transformation with *A. tumefaciens*. Darkfield (A) and brightfield (D) images with corresponding fluorescence images (B, E) and overlays (C, F). Adhesive disc cells (ad) are indicated. Scalebars represent 500 μm (A-C) and 100 μm (D-F), respectively.



Supplemental Figure S5: Area used for intensity-scanning of the images taken of the co-transformed adhesive disk on either side of an emerging haustorium (related to Fig. 5I). Adhesive disk tissue and (ad) and haustorial tissue (h) are indicated. Images of the dsRed (A) and GFP (B) fluorescence were scanned with the same scanning mask (indicated in purple for the red channel and in green for the green channel) using Fiji/ImageJ V2.0.0. in order to extract the relative fluorescence intensity along the picture from left to right (see Fig. 5I). The sectioning plane was off-centre with respect to the mid-point of the haustorium as depicted in Fig. 2.