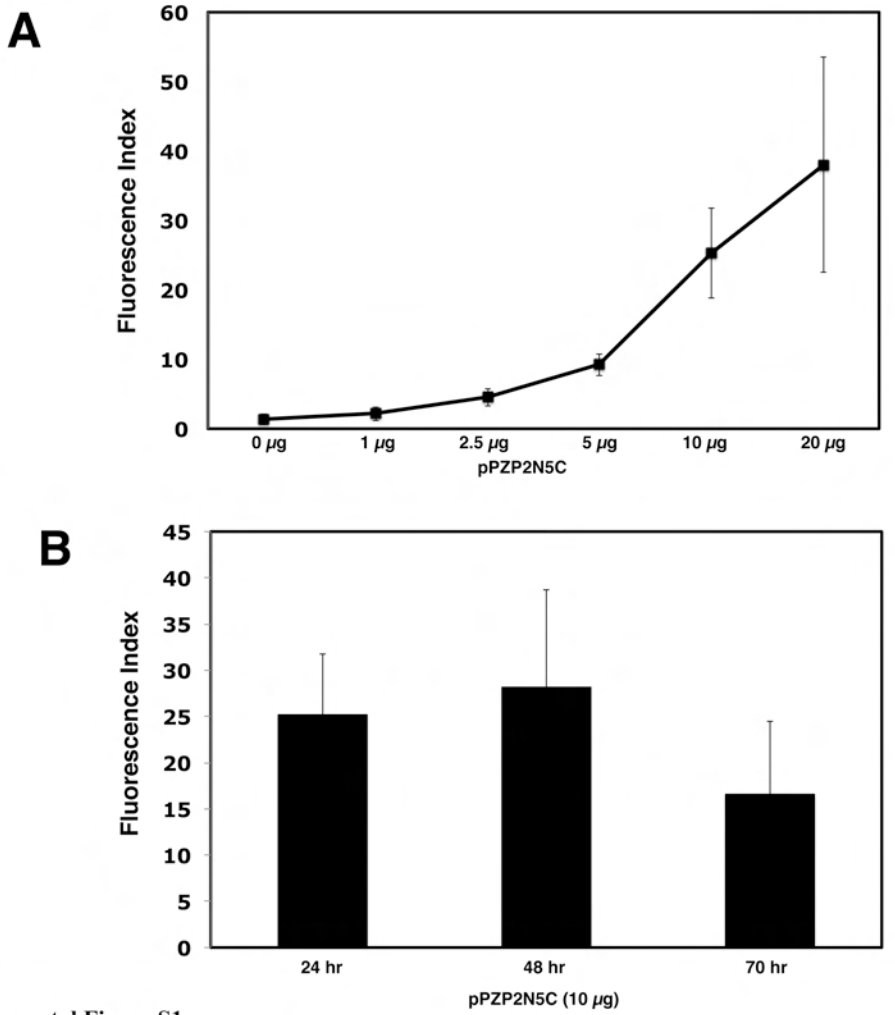
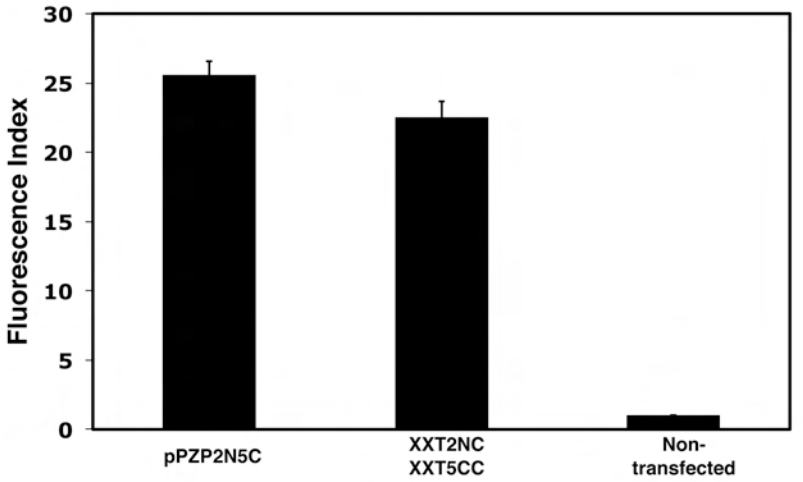


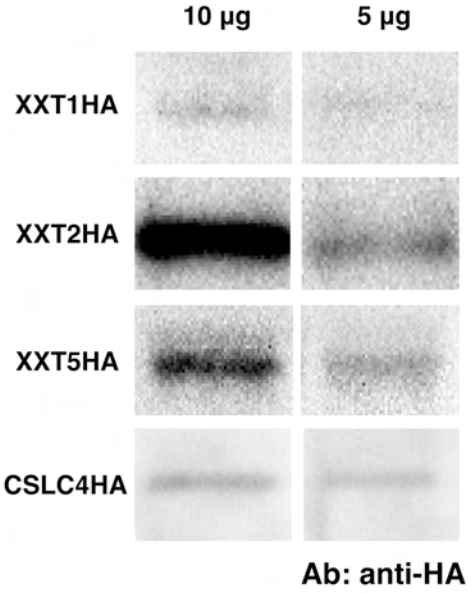
Supplemental Figure S1.

BiFC signal intensity dependence on the amount of plasmid DNA and time of incubation. (A) Co-expression construct pPZP2N5C, containing XXT2NC and XXT5CC, was transfected into protoplasts with different amounts of plasmid DNA. (B) Arabidopsis protoplasts were transfected with 10 μg pPZP2N5C plasmid DNA. The BiFC signal was detected at 24 hr, 48 hr and 70 hr time points.



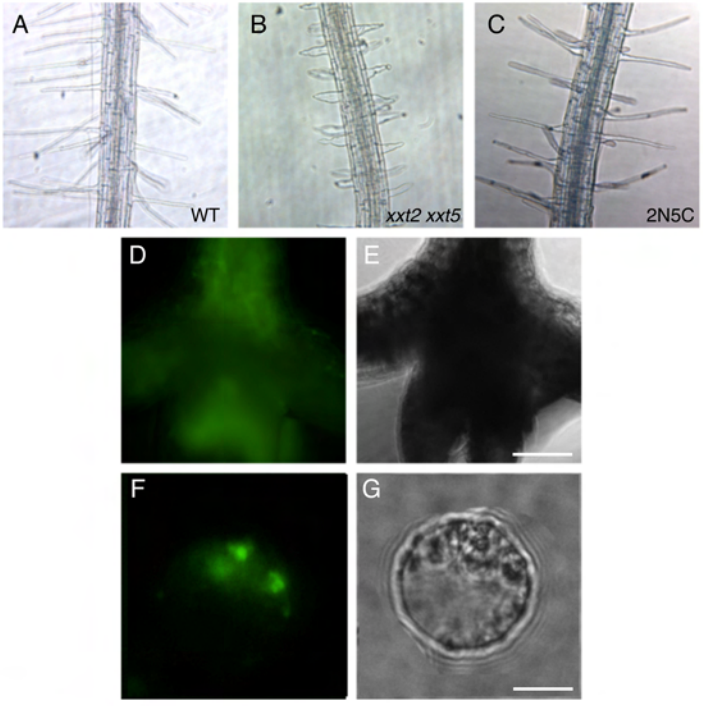
Supplemental Figure S2.

BiFC signal intensities for XXT2NC and XXT5CC co-expressed in Arabidopsis protoplasts using two approaches. Co-expression plasmid pPZP2N5C (10 μg) or via co-expression of XXT2NC and XXT5CC as separate constructs (10 μg each) produce similar levels of BiFC signal intensity when quantified by flow cytometry.



Supplemental Figure S3.

Expression level of HA-tagged XXTs and CSLC4. Proteins from protoplasts transfected with 10 µg and 5 µg of each corresponding plasmid were separated by SDS-PAGE and detected by polyclonal anti-HA antibodies.

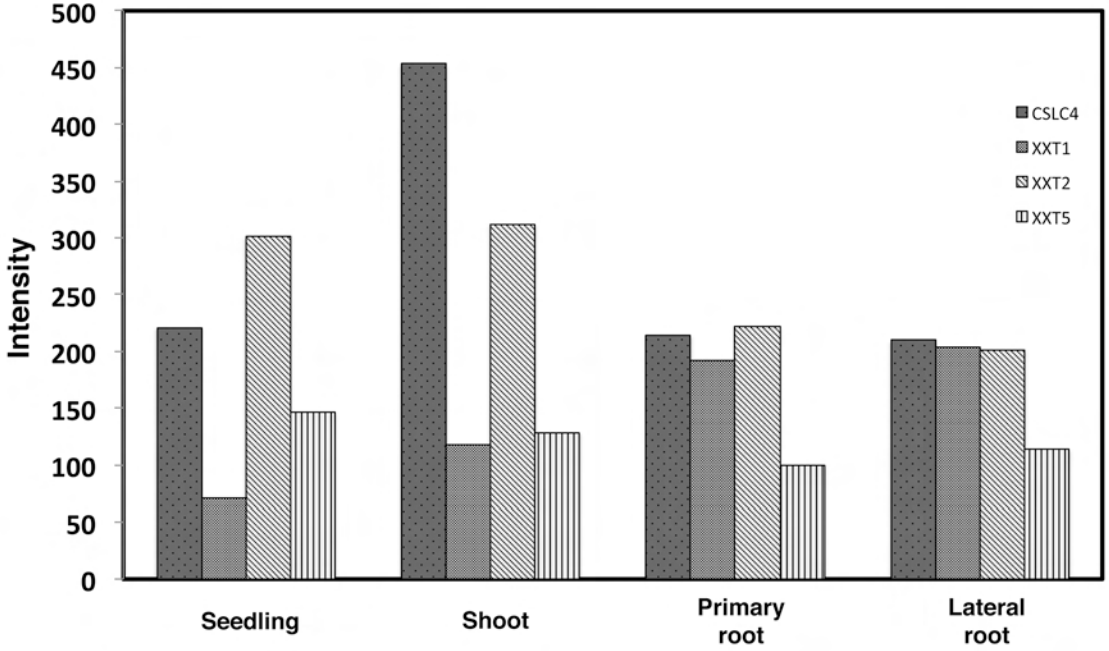


Supplemental Figure S4.

Transgenic Arabidopsis plants expressing XXT2NC and XXT5CC proteins.

The co-expression binary plasmid, pPZP2N5C, was transformed into *Agrobacterium tumefaciens* GV3101 cells by electroporation and the *xxt2 xxt5* double mutant plants were transformed using the floral-dip method (Clough and Bent, 1998). Transfected plant seedlings were selected by spraying herbicide Rely 2000 (Glufosinate ammonium, 250 mg L^{-1}) four times in two weeks. The herbicide resistant plants (T1) were confirmed by PCR with gene and YFP fragment specific primers. The next generation (T2) seedlings were screened for complementation of the *xxt2 xxt5* root hair phenotype (A)-(C) and YFP fluorescence of the seedlings (D). Seedlings (T2) were germinated and grown for 5 days on half MS medium containing 10 mg L^{-1} glufosinate ammonium. [(E) bright field image of the same seedling; Scale bar = 200 µm for images (D)-(E)]. Protoplasts were also isolated from the seedlings as described in Materials and Methods. (F) BiFC signal observed by fluorescence microscopy; (G) bright field image of the same protoplast. Scale bar = 20 µm for image (F) and (G).

Clough SJ, Bent AF (1998) Floral dip: a simplified method for Agrobacterium-mediated transformation of Arabidopsis thaliana. Plant J **16:** 735-743



Supplemental Figure S5.

Expression of *CSLC4*, *XXT1*, *XXT2*, and *XXT5* in Arabidopsis organs. *CSLC4* (AT3G28180), *XXT1* (AT3G62720), *XXT2* (AT4G02500) and *XXT5* (AT1G74380) expression data of seedlings, shoots and roots were obtained from NASCArray website (http://affymetrix.arabidopsis.info/narrays//experimentbrowse.pl) and AMPL website (http://wardlab.cbs.umn.edu/arabidopsis/). All data were produced using the Affymetrix ATH1 Arabidopsis Genome Array.