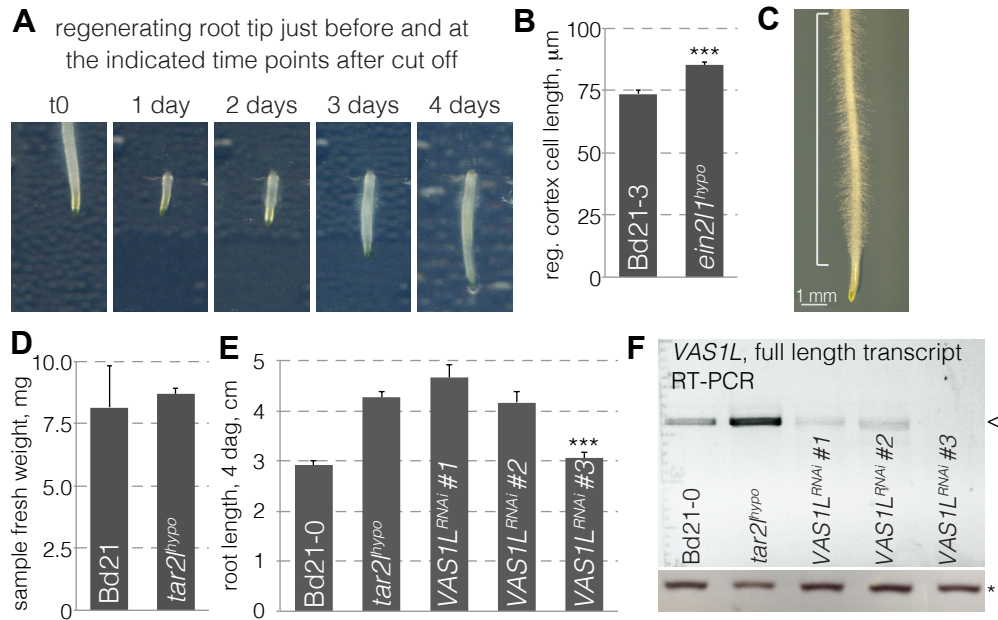


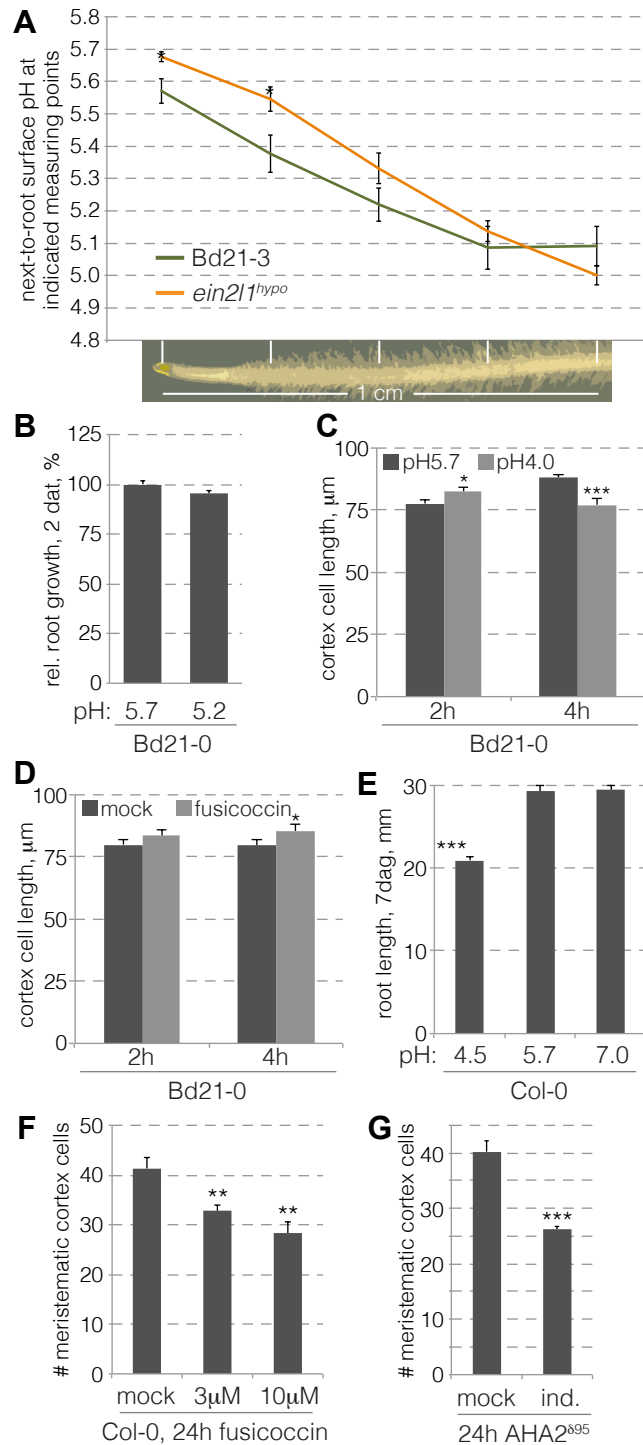
SUPPLEMENTAL FIGURE 1



**Supplemental Figure 1. Supplemental illustrations of Brachypodium phenotypes.**

(A) Illustration of gradual root regeneration from isolated root tips. (B) Mature cortex cell length in roots 4 days after regeneration from isolated Bd21-3 and *ein211hypo* root tips (40 cells per root, 10 roots). (C) Illustration of the root segments investigated in this study. (D) Fresh weight comparison for pooled root segments from Bd21-0 and *tar2hypo* seedlings used in metabolic analysis (6 biological replicates). (E) Root length of Bd21-0 and *tar2hypo* seedlings, and *tar2hypo* seedlings transformed with the anti-*VAS1L* RNAi construct, three independent transgenic lines (21-24 roots). (F) RT-PCR detection of full-length *VAS1L* transcript (arrowhead) corresponding to the lines in (E). Control transcript is *UBC18* (asterisk). Error bars indicate standard error of the mean. Differences were not statistically significant (Student's T-test) unless indicated as follows: \* =  $p < 0.05$ ; \*\* =  $p < 0.01$ ; \*\*\* =  $p < 0.001$ .

## SUPPLEMENTAL FIGURE 2



**Supplemental Figure 2. Supplemental illustrations of pH experiments.** (A) pH traces along the surface of root tips, measured with a fiber-optic pH microsensor at five equidistant points as indicated (6–8 roots). (B) Root length in Bd21-0 wild type 2 days after transfer of 2-day-old seedlings from standard pH (5.7) to standard pH or more acidic pH (5.2) (8–10 roots). (C) Average cortex cell length in 2-day-old Bd21-0 wild type root tips 2 and 4 hours after transfer from standard pH (5.7) to standard pH or more acidic pH (4.0) (95–138 cells from 6–7 roots). (D) Average cortex cell length in 2-day-old Bd21-0 wild type root tips 2 and 4 hours after transfer to mock or 10 µM fusicoccin medium (pH 5.7) (64–96 cells from 6 roots). (E) Root length in 7-day-old Arabidopsis Col-0 wild type seedlings grown on media with different pH (19–20 roots). (F) Root meristem size as represented by meristematic cortex cell number in roots of 4-day-old Arabidopsis Col-0 wild type seedlings, 24 hours after transfer from standard medium onto mock- or fusicoccin-supplemented medium (6 roots). (G) Root meristem size, as represented by meristematic cortex cell number in roots of 4-day-old transgenic Arabidopsis AHA2<sup>695</sup> seedlings, 24 hours after transfer on medium supplemented with 1 µM dexamethasone to induce expression of the hyperactive proton pump (5 roots). Error bars indicate standard error of the mean. Differences were not statistically significant (Student's T-test) unless indicated as follows: \* =  $p < 0.05$ ; \*\* =  $p < 0.01$ ; \*\*\* =  $p < 0.001$ .