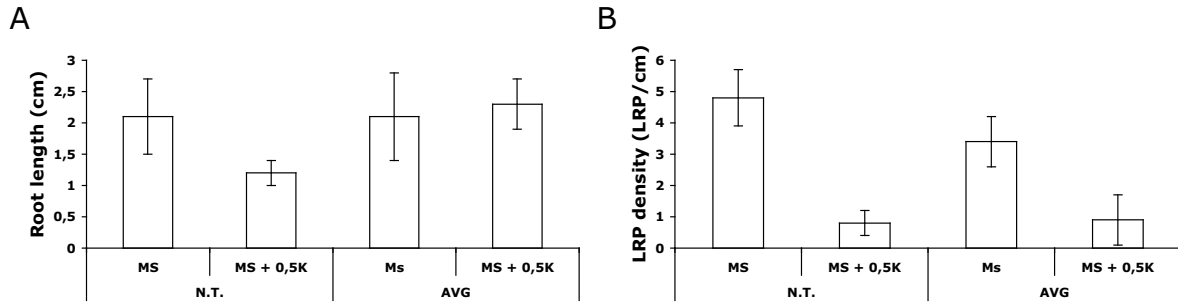
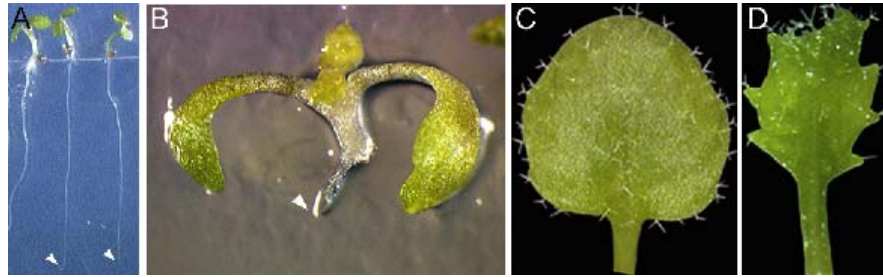


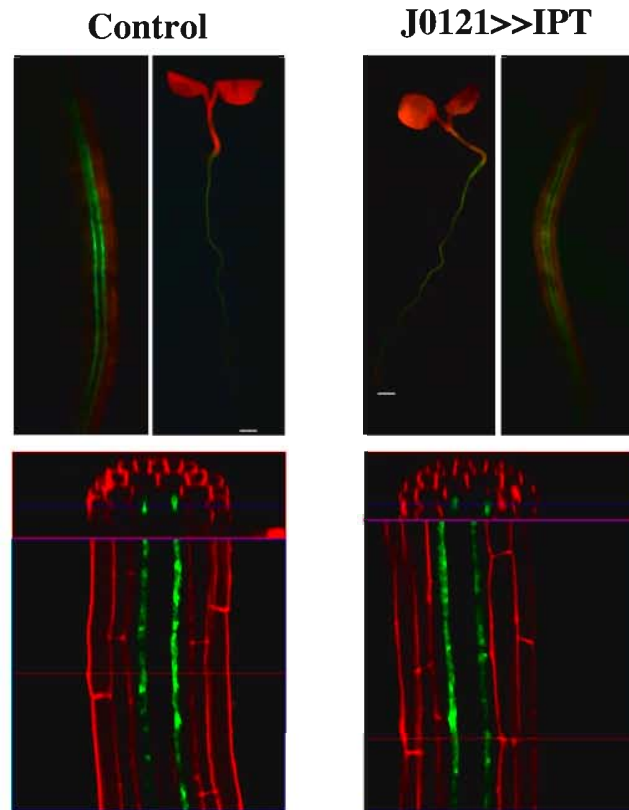
Supplemental Figure 1. BAP inhibits root growth and lateral root formation. **(A)** BAP reduce primary root growth. **(B)** BAP reduce lateral root density. Plants were grown on vertical agar plates (1/2 MS 1.2% phytigel) supplemented with 0 μ M (control, n=20), 0.1 μ M (n=23) and 1 μ M of BAP (n=23). Root length and the number of emerged lateral roots were measured 10 days after germination (DAG). The values shown are means \pm SD.



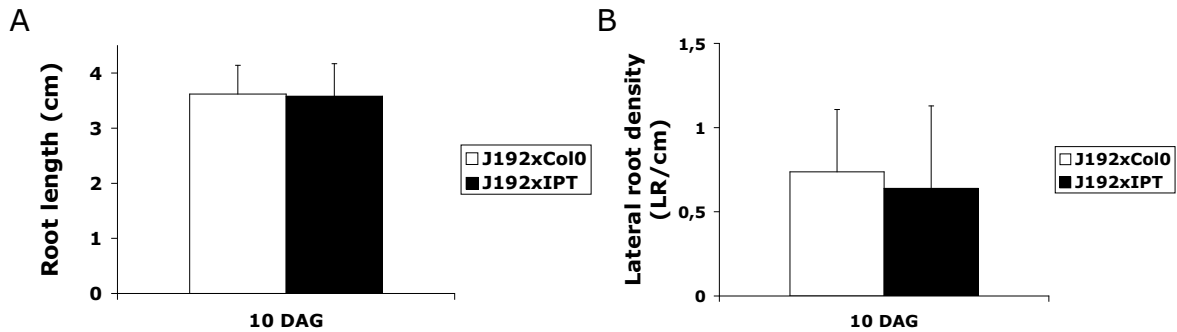
Supplemental Figure 2. The inhibitor of ethylene biosynthesis AVG prevents cytokinins inhibition of primary root growth but does not change cytokinins effect on lateral root density. **(A)** Avg treated plants are not sensitive to cytokinins inhibition of primary root growth. **(B)** AVG treated plants are still sensitive to cytokinins inhibition of lateral root formation. Plants (12 plants per treatment) were grown on vertical agar plates (1/2 MS 1.2% phytigel). Root length was measured and the number of lateral root primordia was recorded using a microscope. The values shown are means \pm SD.



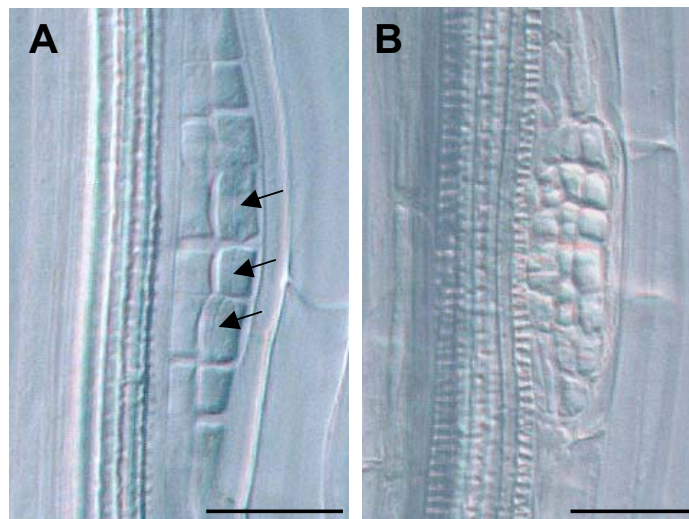
Supplemental Figure 3. L1-specific IPT expression recovers cytokinin phenotypes. **(A)** UAS-IPT seedlings. **(B)** 5 day-old LTP1>>IPT F1 seedling with short hypocotyl and root, and pale cotyledons. **(C)** UAS-IPT rosette leaf. **(D)** Rosette leaf of LTP1>>IPT F1 plant with serrated margins. The UAS::ipt line was crossed with an LTP1::GAL4 line (Weijers et al., 2003), and F1 seedlings and plants were observed.



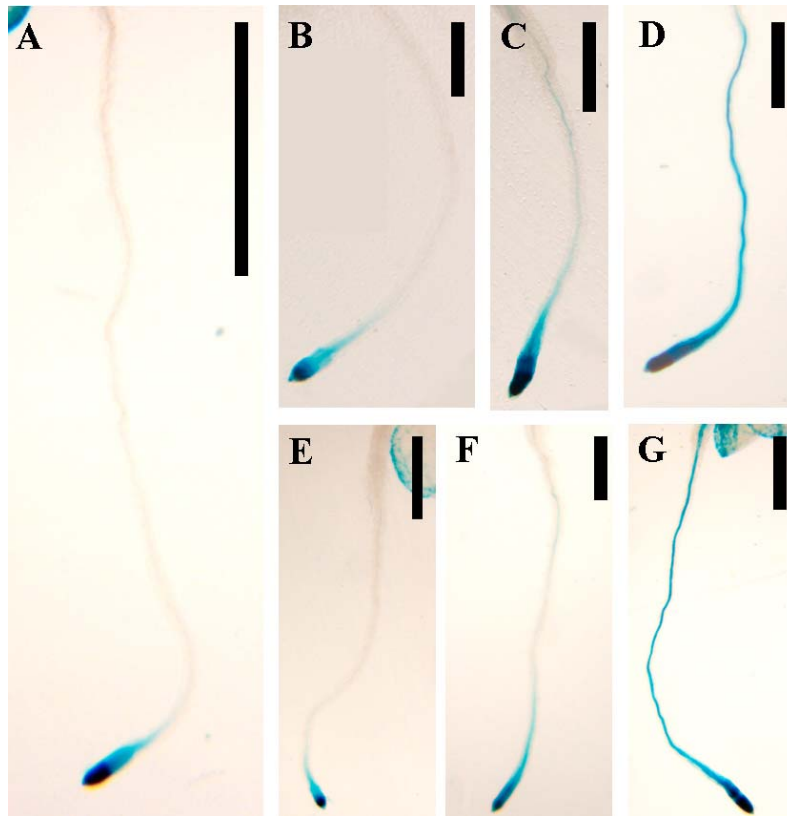
Supplemental Figure 4. IPT transactivation in xylem pole pericycle cells does not change cell specification. GFP expression in control (J0121xCol-0) and J0121>>IPT seedlings 6 days after germination. Binocular observation of whole seedlings and detailed enlargement of the primary root (upper panels). Confocal transversal and longitudinal sections of the primary root (lower panels). Plants cell walls were stained with propidium iodide (red dye). GFP expression appears in green. Imaging was performed with the same settings in control and J0121>>IPT plants. Bars indicate the root apex of the seedlings.



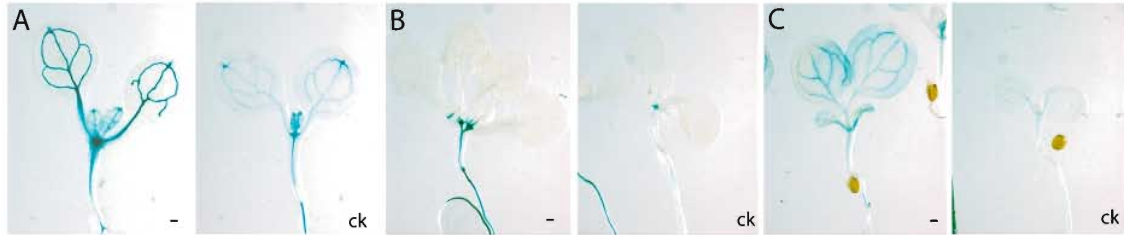
Supplemental Figure 5. *IPT* transactivation in young lateral root primordia does not change root growth or branching. **(A)** J0192>>IPT (n=32) plants have a similar root length compared to control (J0192xCol-0) plants (n=16). The values shown are means \pm SD. **(B)** J0192>>IPT plants (n=32) show a similar lateral root density compared to control (J0192xCol-0) plants (n=16). The values shown are means \pm SD. Plants were grown on vertical agar plates (1/2 MS 1.2% phytigel). Root length and the number of lateral roots were recorded using a stereomicroscope. The values shown are means \pm SD.



Supplemental Figure 6. *IPT* transactivation in xylem pole pericycle cells leads to the formation of disorganized primordia. **(A)** LRP in wild type at stage III, the dome shape is due to radial expansion of the central cells in the inner layer and rounds of periclinal divisions in the central cells of the outer layer (arrows). **(B)** Stage III primordium in J0121>>IPT plants showing a group of short cells due to ectopic anticlinal divisions. Cells at the base of the primordium do not expand radially, almost all of the cells in the outer layer have divided periclinaly causing the developing LRP to appear flattened. From 11 primary roots of J0121>>IPT plants the percentage of LRP with abnormal pattern of division was 55.8% (n=86).



Supplemental Figure 7: Cytokinin treatment does not change auxin sensitivity in root xylem-pole pericycle cells. (A) 4 days old *Pro_{DR5}:GUS* seedling root germinated in the presence of 10 μ M NPA. (B) GUS activity in *Pro_{DR5}:GUS* seedling 1h after transfer to NAA (10 μ M) containing medium. (C) GUS activity in *Pro_{DR5}:GUS* seedling 2h after transfer to NAA (10 μ M) containing medium. (D) GUS activity in *Pro_{DR5}:GUS* seedling 3h after transfer to NAA (10 μ M) containing medium. (E) GUS activity in *Pro_{DR5}:GUS* seedling 1h after transfer to NAA (10 μ M) + BAP (10 μ M) containing medium. (F) GUS activity in *Pro_{DR5}:GUS* seedling 2h after transfer to NAA (10 μ M) + BAP (10 μ M) containing medium. (G) GUS activity in *Pro_{DR5}:GUS* seedling 3h after transfer to NAA (10 μ M) + BAP (10 μ M) containing medium. In both NAA and NAA+BAP treated plants, GUS activity was detected 2 hours after transfer in the elongation zone and over the entire root length 3 hours after germination.



Supplemental Figure 8: *PIN* genes expression is strongly reduced in the shoot of cytokinin treated plants. (A) Expression of *ProPIN1:GUS* is downregulated in shoots of seedlings grown on cytokinin. (B) Expression of *ProPIN6:GUS* is downregulated in shoots of seedlings grown on cytokinin.