

**Supplemental figure S1. Effect of IAAlD on Arabidopsis lateral root development.**

Arabidopsis Col-0 seedlings were germinated and grown for 7 d on the surface of agar plates containing 0.2x MS medium supplied with the solvent (control) or with 0.25  $\mu$ M IAAlD. (A), Stage number of lateral root primordia per plant. (B), Total lateral root primordia per plant. (C), Total emerged LR. Values shown are the mean  $\pm$  SD, (n = 15). Different letters represent means statistically different at the 0.05 level. The experiment was repeated twice with similar results.

**Supplemental figure S2. Effect of indole-3-acetaldehyde on Arabidopsis biomass production.**

Wild type Col-0 seedlings were grown for 16 d under increasing IAAlD concentrations on vertically oriented agar plates. Data are given for the mean root fresh weight (A), shoot fresh weight (B), and total fresh weight (C). Plants were excised at the root/shoot junction and fresh weights determined on an analytical scale for 4 groups of 25 plants. Different letters represent means statistically different at the 0.05 level. The experiment was repeated twice with similar results.

**Supplemental figure S3. Effect of IAAlD on primary root growth in WT (Col-0) and auxin-related Arabidopsis mutants.**

The seedlings were germinated and grown for 8 d on vertically oriented agar plates supplied with the solvent or with 8  $\mu$ M IAAlD. Data are given for the length of the primary root (A). Photographs show representative plates with WT plants grown side by side with *aux1-7* (B and C) or *axr1-3* (D and E) mutants. Values shown in A represent the mean  $\pm$  SD, (n = 30). Different letters represent means statistically different at the 0.05 level. The experiment was repeated twice with similar results.