

Supplemental Figures for Article

Dopamine Inhibits Arabidopsis Growth through Increased Oxidative Stress and Auxin Activity

Timothy E. Shull, Jasmina Kurepa and Jan A. Smalle *

Department of Plant and Soil Sciences, University of Kentucky, Lexington, KY 40546, USA

* Correspondence: jsmalle@uky.edu

Figure S1: Plants grown on DA have increased lateral root length and adventitious root number;

Figure S2: DA increases auxin activity;

Figure S3: Differential expression of genes associated with auxin transport in response to DA exposure;

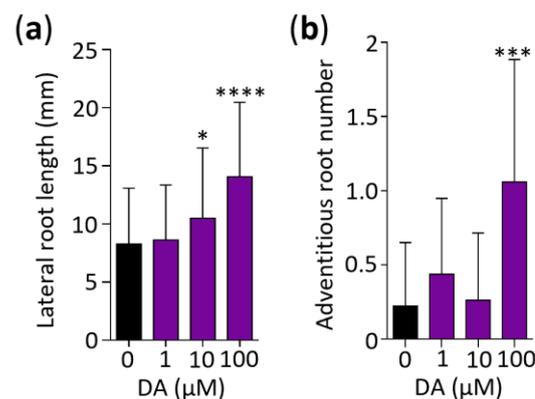


Figure S1. Plants grown on DA have increased lateral root length and adventitious root number. **(a)** Col-0 seedlings were grown on vertically positioned petri plates containing MS/2 supplemented with the denoted concentrations of DA for 11 days, photographed and lateral root lengths were measured using ImageJ. The length of lateral roots up to 30 mm from the hypocotyl root junction were measured and data are presented as mean \pm SD. ($n \geq 65$; *, $P < 0.001$ ****, $P < 0.0001$; one-way ANOVA with Dunnett's post-test comparing control to DA treatments.). **(b)** Col-0 seedlings were grown as described in **a)** and adventitious roots were counted using a microscope. Data are presented as mean \pm SD ($n \geq 16$; ***, $P < 0.001$; one-way ANOVA with Dunnett's post-test comparing control to DA treatments.).

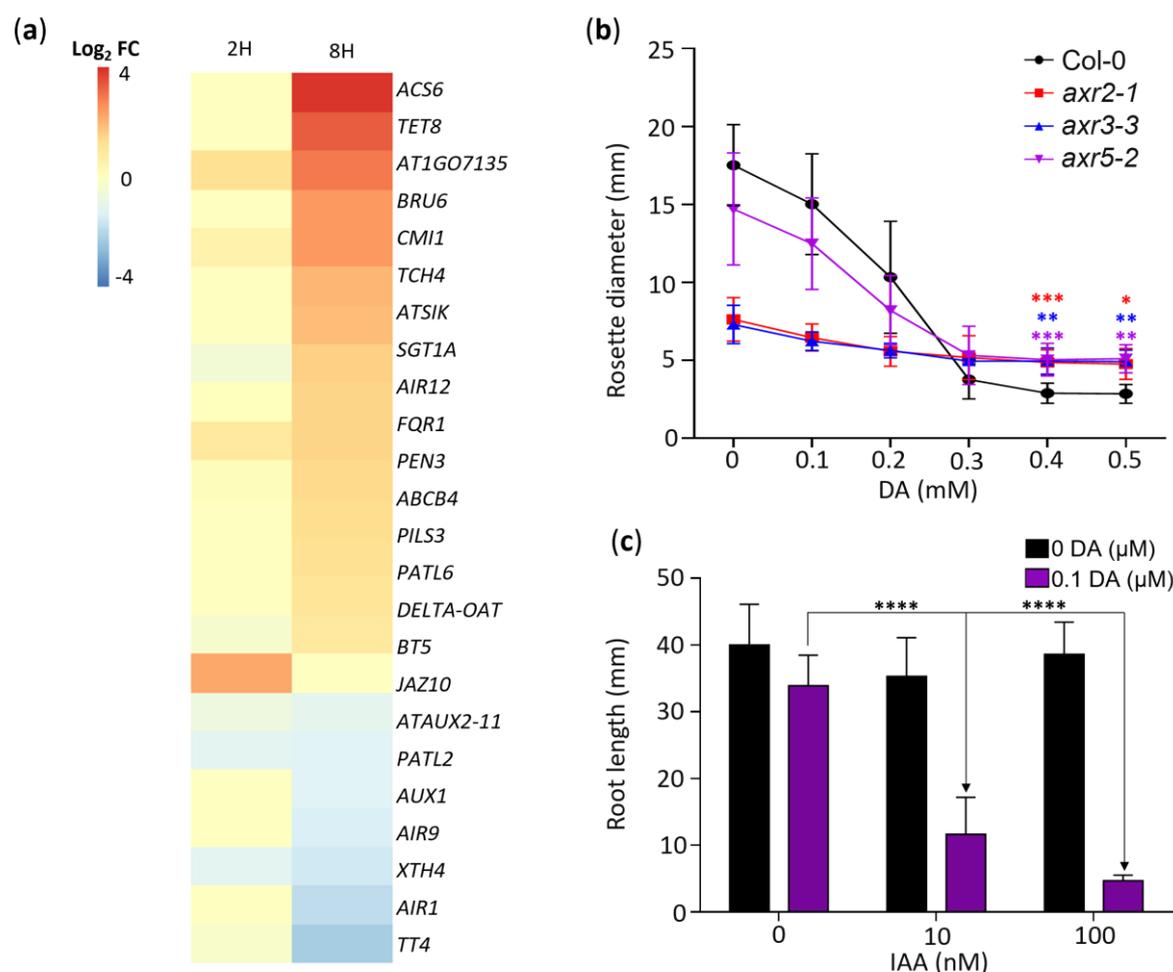


Figure S2. DA increases auxin activity. **(a)** Differential expression of auxin-regulated genes in response to DA exposure. Gene-level expression data were generated as described in the materials and methods. Auxin regulated genes were extracted and are presented as a heatmap of log_2 fold changes ($\text{Log}_2 \text{FC}$) at 2 (2H) and 8 (8H) hours. **(b)** Col-0 and auxin resistant mutants were grown on MS/2 media supplemented with the denoted concentrations of DA for 14 days. Seedlings were photographed and rosette diameter was measured using ImageJ. Data are presented as mean \pm SD. ($n \geq 8$; *, $P < 0.05$; **, $P < 0.01$; ***, $P < 0.001$; Tukey's post-test; comparisons are between Col-0 and auxin resistant mutants). **(c)** Col-0 seedlings were grown on MS/2 media supplemented with 0 or 100 μM DA and 0, 10 or 100 nM IAA for 11 days and root length was measured using ImageJ. Data are presented as mean \pm SD ($n \geq 10$; ****, $P < 0.0001$; one-way ANOVA with Tukey's post-test; comparisons are labeled by one-way arrows).

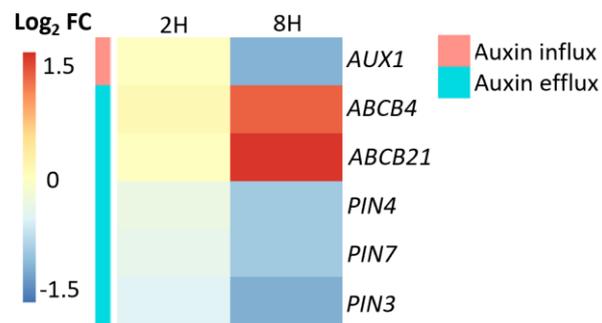


Figure S3. Differential expression of genes associated with auxin transport in response to DA exposure. Gene-level expression data were generated as described in the materials and methods. Auxin transport associated genes were extracted and are presented as a heatmap of log₂ fold changes (Log₂ FC) at 2 (2H) and 8 (8H) hours.