Project: Anisotropic growth is achieved through the additive mechanical effect of material anisotropy and elastic asymmetry

Contact Information: Siobhan A Braybrook, UCLA, [siobhanb@ucla.edu](mailto:siobhanb@ucla.edu)

Data: raw data files for entire manuscript, grouped by figure

Description of Data

All experiments performed on dark-grown hypocotyls grown on 1/2MS media plus B-vitamins and 1.5% sucrose. Ages of plants are expressed in HOURS POST GERMINATION (HPG) where germination was defined as endosperm rupture.

Fig1\_S1: folders containing CONFOCAL data acquired on a Leica SP8. Separate folder for CONFOCAL CELL GROWTH data and GL2-GFP data. All images acquired from Arabidopsis thaliana Columbia ecotype. CELL GROWTH images acquired from transgenic plants expressing myristoylated-YFP as a membrane marker.

Fig2\_S2: folder containing confocal data acquired on a Leica SP8. Images acquired from transgenic Arabidopsis thaliana plants expressing various microtubule markers (MAP4, TUA6, EB1) and CESA3.

Fig3\_S3: folders containing IMMUNOLOCALIZATION, CRYO SEM, and AFM data. For IMMUNOS, confocal images acquired on a Leica SP8 with antibody name and hypocotyl age in file names. For CRYO SEM, images acquired on a Zeiss EVO-HD SEM with hypocotyl age in file names. For AFM, folders containing AFM indentation map files acquired on a JPK NanoWizard 3 AFM, grouped by hypocotyl age; .force files contain unadjusted height, adhesion, and stiffness (150nm fit length) data for each map, .jpk-force-map files contain unprocessed force-piezo height curves by position in the map area. AFM files can be opened using JPK Data Processing software. AFM folders also contain .tif images showing the location of each AFM map region, by sample.

Fig5\_S5: folders containing TRANSGENIC VERIFICATION, IR TIME COURSES, DISSECTING SCOPE images, CONFOCAL images, AFM data, and IMMUNOS. TG Verification data acquired using a fluorescent dissecting scope for GFP imaging, and a regular dissecting scope after GUS staining for GUS imaging. IR TIME COURSES contain folders with images acquired using a custom built IR-imaging set-up; images were acquired at 10minute intervals over 4 days post-germination, ascending file number indicates ascending time; all plants were treated with ethanol vapour in these experiments; Col indicates non-transgenic controls. DISSECTING SCOPE folder contains images acquired on a dissecting scope for measurement of hypocotyl diameter at 24HPG. CONFOCAL folder contains a folder of images acquired with a Leica SP8 used to measure hypocotyl diameter at 48HPG and a folder of images used to measure cell width and length in PME/PMEI/NT ethanol treated seedlings at 24HPG and 48HPG (controls included). AFM data contains AFM files as described in Fig3-S3 for ethanol treated PME/PMEI/NT hypocotyls; included are .tif images taken for map positioning by sample. IMMUNO contains confocal images acquired on a Leica SP8 from transverse sections of ethanol treated 48HPG hypocotyls from PME/PME/NT plants at the base and top of the hypocotyl with specified anti-bodies in file names.

Fig6: folders containing CONFOCAL data for IMMUNOS and CELL SHAPE with images acquired on a Leica SP8. CELL SHAPE contains images of 48HPG PME/PMEI transgenics with the myristoylated-YFP marker for visualization of cell membranes; M-YFP alone are included as controls; images are presented for 5uM oryzalin treated plants and plants treated with oryzalin PLUS ethanol as indicated in each file name. IMMUNOS contains images of transverse sections taken from hypocotyls reacted with the anti-bodies specified in each file name.

sadtha