***eLife’s* transparent reporting form**

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* You should state whether an appropriate sample size was computed when the study was being designed
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We indicated sample size number within each figure legend. Sample size numbers for meristems were not computed, but we took guidance from prior publications by other authors within this field and aimed at similar sample sizes for each condition or genotype.

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Original microscopy and image analysis data represented in the manuscript will be available via Dryad upon publication, all other experimental replicates will be submitted to BioArchive Image.