

Publication

Overexpression of a pectin methylesterase inhibitor in *Arabidopsis thaliana* leads to altered growth morphology of the stem and defective organ separation

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The methylesterification status of cell wall pectins, mediated through the interplay of pectin methylesterases (PMEs) and pectin methylesterase inhibitors (PMEIs), influences the biophysical properties of plant cell walls. We found that the overexpression of a *PMEI* gene in *Arabidopsis thaliana* plants caused the stems to develop twists and loops, most strongly around points on the stem where leaves or inflorescences failed to separate from the main stem. Altered elasticity of the stem, underdevelopment of the leaf cuticle, and changes in the sugar composition of the cell walls of stems were evident in the *PMEI* overexpression lines. We discuss the mechanisms that potentially underlie the aberrant growth phenotypes.

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