



Elongation-related functions of LEAFY COTYLEDON1 during the development of *Arabidopsis thaliana*

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Résumé en anglais	<p>The transcription factor LEAFY COTYLEDON1 (LEC1) controls aspects of early embryogenesis and seed maturation in <i>Arabidopsis thaliana</i>. To identify components of the LEC1 regulon, transgenic plants were derived in which LEC1 expression was inducible by dexamethasone treatment. The cotyledon-like leaves and swollen root tips developed by these plants contained seed-storage compounds and resemble the phenotypes produced by increased auxin levels. In agreement with this, LEC1 was found to mediate up-regulation of the auxin synthesis gene YUCCA10. Auxin accumulated primarily in the elongation zone at the root-hypocotyl junction (collet). This accumulation correlates with hypocotyl growth, which is either inhibited in LEC1-induced embryonic seedlings or stimulated in the LEC1-induced long-hypocotyl phenotype, therefore resembling etiolated seedlings. Chromatin immunoprecipitation analysis revealed a number of phytohormone- and elongation-related genes among the putative LEC1 target genes. LEC1 appears to be an integrator of various regulatory events, involving the transcription factor itself as well as light and hormone signalling, especially during somatic and early zygotic embryogenesis. Furthermore, the data suggest non-embryonic functions for LEC1 during post-germinative etiolation.</p>
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