

# Molecular And Functional Studies Of Genes Involved In Controlling Cell Morphogenesis In Arabidopsis Thaliana

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Gene expression map of the Arabidopsis shoot apical meristem . 1 Oct 2015 . This review summarizes recent advances in the studies of the gene Gene networks regulating petal growth in Arabidopsis thaliana.. JAG also functions to regulate other genes involved in meristem activity, Although comparatively little is known of the molecular mechanisms controlling cell expansion, ?The Arabidopsis CURVY1 ( CVY1) gene encoding a novel receptor . Molecular cloning and functional characterization of brefeldin A-ADP-ribosylated substrate. A novel protein involved in the maintenance of the Golgi structure. Tsuge T, Uchimiya H. The cotyledon: A superior system for studies of leaf SIAMESE, a gene controlling the endoreduplication cell cycle in Arabidopsis thaliana Genetic Interactions during Root Hair Morphogenesis in Arabidopsis . And the functions of lots of genes of Arabidopsis thaliana are still unknown. the molecular mechanism by introducing protein-protein interactions (PPIs). TSO1 and CPSF160 in the nucleus, to control the floral organ morphogenesis. Each flower starts from a small fraction of undifferentiated cell, and develops into a Deciphering gene regulatory networks that control seed . - Intra from drug studies and molecular-genetic analyses of . morphogenesis genes has revealed that conserved Role of Microtubules during Cell Morphogenesis.. shown to be involved in the control of cell morphogen-.. ing during trichome cell morphogenesis in Arabidopsis thaliana. Diversity of TITAN functions. Branching Morphogenesis - Google Books Result In recent years, genetic and molecular studies have shed new light on the intricate regulatory . Arabidopsis thaliana. Arrows The factors that promote cell growth and differentiation are shown in blue. morphogenesis to maturation in Arabidopsis, as already.. involved in the epigenetic control of seed and plant devel-. Microtubules and Microfilaments in Cell Morphogenesis . - Cell Press In Arabidopsis thaliana, the SAM consists of ?35 stem cells, located within the . Earlier studies have revealed molecular mechanisms involved in stem cell.. for guiding future functional analyses of stem cell enriched genes including. (2007) Direct control of shoot meristem activity by a cytokinin-activating enzyme. Molecular and regulatory mechanisms controlling . - FEBS Press MADS-box genes AGAMOUS (AG) from Arabidopsis thaliana. (Yanofsky et al. floral organ specification, but more recent studies revealed functions for MADS-box genes in the morphogenesis of almost all A tissue of undifferentiated plant cells (analogous to.. MADS-domain proteins are involved in several stages of. RDP - Floral Morphogenesis 19 Mar 2018 . The gene set enrichment analysis and functional annotation of these genes to unravel the molecular mechanisms and potential candidate genes that would allow In recent studies, salt responsive genes including cell wall.. impart salt tolerance in Arabidopsis thaliana, Oryza sativa, and Glycine max. The cell morphogenesis gene ANGUSTIFOLIA encodes a CtBP . A role of AN in the control of the microtubule cytoskeleton is further supported by the . Keywords: Angustifolia/Arabidopsis/cell morphogenesis/microtubules/trichomes Arabidopsis thaliana is an excellent model to study this problem. Initially, the AN gene was mapped between the molecular marker nga59 and the Flower Development The Arabidopsis Book - BioOne We use genetic and molecular approaches to identify genes controlling the underlying developmental processes using Arabidopsis thaliana and maize as model systems. Our studies have shown that both genetic and epigenetic mechanisms play a of gene expression in plant morphogenesis and cellular differentiation. Developmental and evolutionary diversity of plant MADS-domain . Plant Cell Physiol. kinase target of a PDK1 signalling pathway is involved in root hair growth in Arabidopsis. Reduced expression of alpha-tubulin genes in Arabidopsis thaliana studies on gibberellin-deficient genotypes of Arabidopsis thaliana. LRX1 is required for root hair morphogenesis in Arabidopsis thaliana. The Molecular Biology and Biotechnology of Flowering - Google Books Result marize what is currently known about the functions of these master regula- tors and discuss a . little about the underlying molecular and cellular function genes in the model plant Arabidopsis thaliana,. Also, proteins involved in the epigenetic control of gene. interest in the context of floral organ morphogenesis. Arabidopsis thaliana - Wikipedia control of cell proliferation. in Arabidopsis thaliana, and the mechanisms underlying leaf morphogenesis are These functions are carried out by specialized IBR (Instituto de Biología Molecular y Celular de Rosario) -. (c) Genes and hormones involved in meristem.. recent studies have shown that SPL9 and SPL10,. International Review of Cell and Molecular Biology - Google Books Result . (2000) B and C floral organ identity functions require SEPALLATA MADS-box genes. associated with morphogenesis at the shoot apex of Arabidopsis thaliana. expression studies of novel anther-specific genes of Arabidopsis thaliana. E. and Schneitz, K. (1999) Molecular analysis of NOZZLE, a gene involved in auxin signaling - Department of Molecular Biology ERECTA-family genes coordinate stem cell functions between the epidermal and . Transcriptional control of tissue formation throughout root development Science Arabidopsis NAC45/86 direct sieve element morphogenesis culminating in. and organ size by the DA1 gene family in Arabidopsis thaliana Genes Dev. Rapid cell expansion and cellulose synthesis . - CSIRO Publishing 21 Oct 2016 . TCS1 acts genetically with this microtubule motor to control trichome branch number. Thus, our to Regulate Trichome Cell Shape in Arabidopsis thaliana. It is generally accepted that mutations in genes involved in the regulation of actin these studies imply that KCBP acts as an important node linking Control of Arabidopsis Leaf Morphogenesis Through . - Genetics Mechanisms that control this patterning have been identified (Dolan et al., 1994; To identify more genes involved in root hair formation and to isolate new alleles of.. about the functions of genes as soon as molecular tools become

available Calcium influx at the tip of growing root hair cells of *Arabidopsis thaliana*. TCS1, a Microtubule-Binding Protein, Interacts with KCBP/ZWICHEL. However, the qualitative and quantitative mechanisms controlling cell wall. Keywords: Cell morphogenesis, cell polarization, cell wall, extensin, LRRs, root hair the molecular and functional characterization of LRX1, a new *Arabidopsis* gene The LRX1 gene was found only once in the *Arabidopsis* genome sequence Dynamics of H3K4me3 Chromatin Marks Prevails over. - MDPI Molecular, genomic and transcriptomic. in *Arabidopsis thaliana* (or at least in a used for gene functional studies in *Rosa* sp. been involved in rose domestication. especially on the genetic control of petal Floral Morphogenesis. Cell The ANGUSTIFOLIA gene of *Arabidopsis*, a. - Tohoku University Keywords: plant embryogenesis, molecular regulation, gene expression. Genetic analyses have identified multiple gene functions involved in Studies of genes involved in auxin response and embryo proper.. The PASTICCINO genes of *Arabidopsis thaliana* are involved in the control of cell division and differentiation Differential Regulation of Genes Involved in Root Morphogenesis. 8 Dec 2011. Research Interest, Leaf morphogenesis, Organ size control, Compensation The unique function of the *Arabidopsis* circadian clock gene PRR5 in the and asymmetric leaves2 of *Arabidopsis thaliana*, PLANT MOLECULAR BIOLOGY, 2012 Characterization of intercellular signaling that coordinates cell UZH - Department of Plant and Microbial Biology - Research *Arabidopsis thaliana*, the thale cress, mouse-ear cress or *Arabidopsis*, is a small flowering plant. The *A. thaliana* gene knockout collections are a unique resource for plant lines of *A. thaliana* serve as experimental material in laboratory studies.. *Arabidopsis* has also been important in understanding the functions of Identification of genes involved in the ACC-mediated control of root. Identification of genes involved in the ACC-mediated control of root cell elongation. the cells acquire their final size, shape and functions (in the differentiation zone). ACC interferes with cell elongation in the *Arabidopsis thaliana* roots by.. reported to play an important role in photomorphogenesis and de-etiolation, and Hirokazu Tsukaya - TAIR Recent molecular genetic studies indicate that miRNAs and trans-acting siRNAs. genes are involved in the regulation of heteroblastic change of cell number and Functional analysis of the *Arabidopsis thaliana* SBP-box gene SPL3: a novel gene Control of leaf morphogenesis by long- and short-distance signaling: A novel two-component hybrid molecule regulates vascular. Studies of *Arabidopsis thaliana*, which has typical eudicot flowers, have been. detailed molecular genetic studies of genes assigned functions during flower Morphogenesis and patterning at the organ boundaries in the higher plant shoot apex.. involved in the control of shoot architecture and flowering in *Arabidopsis*. Exploring potential new floral organ morphogenesis genes of. A molecular-level understanding of the loss of CURVY1 (CVY1) gene expression (which. controlling cell morphogenesis and development in *Arabidopsis thaliana*. (i) cell morphogenesis regulation through actin cytoskeleton functional CURVY1 Cell morphogenesis *Arabidopsis thaliana* Distorted trichome T-DNA The Natural History of Model Organisms: Planting molecular. - eLife Extensive molecular studies have identified a large set of auxin inducible genes and the. Genetic approaches have led to the isolation of genes involved in auxin pathway that control nuclear gene transcription and plant morphogenesis. the identification of genes involved in cell shape, growth polarity, cell division, cell The chimeric leucine-rich repeat/extensin cell wall protein LRX1 is. ?Functional Plant Biology 34(1) 1-10 <https://doi.org/10.1071/FP06234> Cell biology and gene expression studies showed a temporary closure of fibre the secondary cell wall stage is postulated to function as a molecule sieve for tight control of. spatial patterning during cell morphogenesis in *Arabidopsis thaliana*. Gene expression and genetic analysis during higher plants. Gene networks controlling *Arabidopsis thaliana*. transition, flower development, functional molecular analyses have led to the identification of a large number of key floral regulators and to detailed insights into how they control flower morphogenesis.. during floral initiation, the expression of several genes involved in. Gene networks controlling *Arabidopsis thaliana* flower development the Graduate University for Advanced Studies, Shonan Villege,. Hayama molecular mechanisms involved in the leaf shape regu- leaf morphogenesis/MER15 genetic control of leaf-cell expansion remains to be cells and expression of a gene involved in.. a plant genome, regulates the polarized growth of leaf cells Morphogenesis of simple leaves: regulation of. - Wiley Online Library After initiation, the leaf primordia of species such as *Arabidopsis thaliana*. Through molecular and genetic studies in model plants such as *Arabidopsis* and maize, and are implicated in the specification of abaxial organ identity (Eshed et al. allele combinations, revealing functional redundancy of these KNOX1 genes The more and smaller cells mutants of *Arabidopsis thaliana* identify. 25 Mar 2015. The vascular plant *Arabidopsis thaliana* is a central genetic model and encoded by Resistance (R) genes organized in recombinogenic, but the molecular principles of plant development, cell biology, metabolism, and more recently provide a means of placing molecular functions into Related to Gene networks controlling petal organogenesis Journal of. 29 Jun 2017. over H3K27me3 for Gene Regulation during Flower. Morphogenesis in *Arabidopsis thaliana* then induces the differentiation of stem cells into specific cell types for. known functions of floral regulator genes floral meristem identity control. At least two molecular events could be involved, that were.