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IN BRIEF

PLANT CELL BIOLOGY

The epidermis both drives and restricts plant shoot growth.

Savaldi-Goldstein, S. *et al. Nature* **446**, 199–202 (2007)

Brassinosteroids are growth-promoting plant hormones, and their absence, or that of brassinosteroid receptors, results in dwarf phenotypes. Using dwarf mutants in conjunction with the tissue-specific expression of a brassinosteroid receptor or biosynthesis enzyme, the authors show that expression in the epidermis is sufficient to rescue dwarf growth in the *Arabidopsis thaliana* shoot. The contribution of the inner tissues to controlling shoot growth is minimal, which suggests that the epidermal layer controls growth by signalling to these tissues.

CELL DIVISION

Propagation of centromeric chromatin requires exit from mitosis.

Jansen, L. E. T. *et al. J. Cell Biol.* 5 Mar 2007 (doi:10.1083/jcb.200701066)

Functional genomics identifies a Myb domain-containing protein family required for assembly of CENP-A chromatin.

Maddox, P. S. *et al. J. Cell Biol.* 5 Mar 2007 (doi:10.1083/jcb.200701065)

Centromeres, which are characterized by the histone H3 variant CENP-A, provide a platform for kinetochore assembly. Jansen *et al.* monitored the timing of assembly and turnover of CENP-A at human centromeres. Surprisingly, CENP-A is stably associated with centromeres throughout the cell cycle, and loading of newly synthesized CENP-A occurs exclusively during the G1 phase. Passage through mitosis is a prerequisite for CENP-A assembly, which suggests a direct coupling between cell division and centromere assembly. To understand how CENP-A is targeted to centromeres, Maddox *et al.* took a functional genomics approach in *Caenorhabditis elegans* and identified KNL-2. Without KNL-2, CENP-A does not incorporate into centromeric chromatin, and kinetochore assembly and chromosome segregation fail. KNL-2 is a conserved Myb-domain-containing protein with a human homologue that appears to have similar functions, but is only transiently present at centromeres.

DEVELOPMENT

Apelin and its receptor control heart field formation during zebrafish gastrulation.

Zeng, X. -X. *et al. Dev. Cell* **12**, 391–402 (2007)

The G protein-coupled receptor Agtrl1b regulates early development of myocardial progenitors.

Scott, I. C. *et al. Dev. Cell* **12**, 403–413 (2007)

The vertebrate heart arises during gastrulation as myocardial progenitors, which originate from the lateral plate mesoderm, converge towards the embryonic midline and extend to form bilateral heart fields, which eventually fuse into a single heart tube. Both groups show that the G-protein-coupled receptor angiotensin receptor-like-1b (Agtrl1b) and its ligand, Apelin, control heart field formation during zebrafish gastrulation. The level of Apelin is crucial for myocardial progenitors to migrate to the correct position, and defective migration leads to failure of myocardial progenitors to differentiate, a loss in the number of cardiomyocytes and an early defect in heart formation.