

S007 Patterning the male germline in flowering plants
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There have been significant recent advances in our understanding of landmark events in pollen development based on progress achieved using genetic and genomic approaches. Genome-wide analysis has revealed complex developmental patterns of gene expression in *Arabidopsis*, there is compelling evidence for germline-specific gene expression programmes in several species and some key male germline regulatory proteins have recently been characterised. Significant progress has been achieved through the analysis of a suite of *Arabidopsis* mutants that block male germ cell division. These include mutations in an F-box protein that forms an SCF^{FBL17} complex that targets the CDK inhibitor proteins for degradation. Such proteins function as male germ cell proliferation factors, but are not involved in germ cell differentiation. On the contrary two recently discovered key germline transcriptional regulatory proteins, DUO1 and DUO3, have dual overlapping roles in germline-specific gene expression and commitment of germ cells to mitosis. Further characterization of these male germline regulators is expected to accelerate progress in understanding the essential switch between germ and non germ cell lineages. These advances also provide fresh opportunities to uncover the regulatory networks that pattern pollen development and control the production of functional 'twin' sperm cells in flowering plants.