

IRN-FJFPB

Webinar « Genome dynamics and epigenetics »

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Dr Daniel Bouyer, CR CNRS, RDP, ENS de Lyon

daniel.bouyer@ens-lyon.fr

<http://www.ens-lyon.fr/RDP/epigenetique-chromatine-et-developpement/>

Role of DNA methylation dynamics for reproductive success in plants

DNA cytosine methylation (5mC) is an epigenetic mark that plays critical roles in the silencing of transposable elements as well as the transcriptional regulation of genes in plants and mammals. Its active removal is an evolutionary conserved phenomenon and required for sexual reproduction in flowering plants but the molecular determinants underlying this epigenetic control are not known. Here, I will present that the DNA demethylases DEMETER (DME) and REPRESSOR OF SILENCING 1 (ROS1) act semi-redundantly in the vegetative cell of pollen to demethylate DNA and ensure proper pollen tube progression in the model plant *Arabidopsis thaliana*. Both demethylases target a set of pollen-specific genes, which are, at least partially, responsible for the sterility phenotype in *dme* and *dme ros1* mutant pollen. Based on these data I will discuss the role of epigenetic regulation of reproductive genes.

