

# Séminaire de Biologie des Plantes

Les séminaires ont lieu sur le Campus Agro-M/INRA de La Gaillarde (2, place P. Viala Montpellier)

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Jeudi 03 avril 2008  
Amphi 206 (Cœur d'Ecole) à 14h00

Niko Geldner

(Département de Biologie Moléculaire Végétale - Université de Lausanne)

## The *Arabidopsis* root endodermis as a polar epithelium in plants

The endodermis of a plant root represents a central diffusion barrier and is an invariant feature of vascular plants. The endodermis secretes precisely aligned bands of hydrophobic material, which effectively block diffusion of water and ions through the extracellular space. It is therefore crucially important for tolerance of plants to environmental stresses. In animals, similar barriers are set-up by epithelial cell layers. An epithelium allows directional transport processes across cells and model systems in animals have been studied for decades. Not much is known, however, about analogous cell layers in higher plants. The endodermis arguably displays all central features of an epithelium. The plasma membrane adjacent to the casparian strip divides the endodermal plasma membrane into separate subdomains and transporters localise to one or the other membrane region. However, their targeting mechanisms are not understood. *Arabidopsis*, as a continued focus of developmental studies, is perfectly suited to undertake a mechanistic dissection of this process. Currently, we are (1) describing the developmental sequence and time frame of events that lead from an undifferentiated root meristem cell to a fully differentiated endodermal cell; (2) Establishing a set of molecular markers to highlight the various plasma membrane subdomains. In the future we will identify the factors that are necessary for the establishment and maintenance of the different sub-domain, by forward and reverse genetic screens. In addition, we will work on obtaining a comprehensive view of the factors that constitute the different endodermal sub-domains by purification and identification of proteins associated with the different membrane sub-domains.

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SEMINAIRES A VENIR :

Jeudi 10 avril : Tou-Cheu Xiong (INRA Montpellier), contact [xiong@supagro.inra.fr](mailto:xiong@supagro.inra.fr)

Jeudi 29 avril : Enric Zelazny, contact Catherine Curie ([curie@supagro.inra.fr](mailto:curie@supagro.inra.fr))

Mardi 6 mai : Hannetz Roschztardt, contact Catherine Curie ([curie@supagro.inra.fr](mailto:curie@supagro.inra.fr))