

Séminaire de Biologie des Plantes

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

Contact IBIP :

Sabine Zimmermann (zimmerma@supagro.inra.fr)

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Jeudi 03 février 2011
Amphi 208 (Cœur d'Ecole) à 14h00

Dr. Tony Schäffner

(Institute of Biochemical Plant Pathology / Helmholtz Center München – Germany)

***Arabidopsis* PIP aquaporins – whole plant physiological studies and plant-environment interactions.**

PIP (plasma membrane intrinsic proteins, aquaporins) are abundant proteins and facilitate membrane water permeation. They are thought to impact on whole-plant and cell water relations. However, a direct effect *in planta* has been only demonstrated for a few PIP isoforms using *e.g.* root and cell pressure probes. We established a new tool to analyze water relocation from root to shoot in intact plants using ^2H -tracing. After raising the ^2H content of the medium of hydroponically grown *Arabidopsis* plants the ^2H increase in the aerial parts was recorded until a new equilibrium of ^2H content was reached. The fitting parameters of an equation modeling the kinetics allowed to estimate the relative water flux q_{leaf} from roots into rosettes. *pip2;1* and *pip2;2* aquaporin knockout plants showed a significantly reduced q_{leaf} . Expression patterns of both genes imply that changes in root hydraulics and in leaf water uptake/ distribution were contributing in an integrated fashion.

To assess genome-environment relations we grow plants in environmental simulation chambers allowing to control irradiance (spectrum and intensity), temperature, humidity and chamber atmosphere. *pip* mutants will be analyzed under conditions of reduced water availability and enhanced temperature assessing physiological and molecular parameters.

If time allows the talk will also include a few aspects from a different project on a plant glycosyltransferase which affects plant defense responses.

Contact :

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Équipe Aquaporines

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<http://www.montpellier.inra.fr/ibip/bpmp/equipes/aquaporines.htm>

Séminaires à venir :

Jeudi 10 février : séminaire interne

Jeudi 17 février : séminaire interne

Jeudi 24 février : Sandrine Ruffel (contact ruffel@supagro.inra.fr)