

Séminaire 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)

Philippe Nacry (nacry@supagro.inra.fr)

Christine Granier (granier@supagro.inra.fr)

Chantal Baracco (baracco@supagro.inra.fr)

**Jeudi 16 juin 2011
Amphi 206 (Cœur d'Ecole) à 14h00**

Laurent Nussaume

(Laboratoire de Développement des Plantes, SBVME/IBEB, CEA Cadarache, St Paul lez Durance)

Molecular dissection of local and systemic responses to phosphate starvation in *Arabidopsis thaliana*

Phosphate (Pi) is a crucial and often limiting nutrient for plant growth. It is also a very insoluble ion heterogeneously distributed in soil. To cope with such a situation, plants have evolved a complex network of morphological and biochemical processes controlled by various regulatory systems. These signalling pathways are triggered either by Pi concentration in the growth medium (external Pi), or by plant cells internal Pi. A split-root assay performed to mimic an heterogeneous environment combined with a transcriptomic analysis was used to identify clusters of genes locally or systemically regulated by Pi starvation. The combination of genetic tools and physiological analysis revealed distinct regulatory roles for the internal and the external Pi. They also pointed out a central role of the transcription factor *phr1* for genes systemically controlled by low Pi. In addition, results obtained with a set of tools including chemical genetics and manipulations of the entire family of the high affinity Pi transporters will be presented. These tools offer novel powerful approaches to dissect Pi perception pathways.

Contact :

Christophe MAUREL

Équipe Aquaporines

Institut de Biologie Intégrative des Plantes

Laboratoire de Biochimie et Physiologie Moléculaire des Plantes

Agro-M/INRA/CNRS/UM2 UMR 5004

2, Place Viala

F-34 060 Montpellier Cedex 1

FRANCE

maurel@supagro.inra.fr

Phone: + 33 (0)4 99 61 20 11

Fax : + 33 (0)4 67 52 57 37

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

Séminaires à venir :

Jeudi 23 juin : Roger A. Leigh (contact : cuin@supagro.inra.fr)

Jeudi 30 juin : Fabrice Roux (contact : gosti@supagro.inra.fr)