

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)

Marc Lepetit (lepetit@supagro.inra.fr)

Christine Granier (granier@supagro.inra.fr)

Corinne Dasen (dasen@supagro.inra.fr)

Chantal Baracco (baracco@supagro.inra.fr)

**Jeudi 1^{er} juillet 2010
Amphi 206 (Cœur d'Ecole) à 14h00**

Dirk Becker

(Plant Molecular Biology & Biophysics, University of Wuerzburg, Germany)

Beyond nutrition – Potassium channel regulation in the context of calcium dependent plant signaling networks.

Potassium channels represent pivotal elements for cellular function and can be found in all living cells from bacteria to humans. They have established roles in nutrition and excitability and control cell proliferation as well as potassium homeostasis. Structurally they can be grouped into three distinct classes namely the Shaker-like K⁺ channels (composed of six transmembrane domains and one pore region (6TM1P)), K2P channels (composed of four transmembrane domains and 2 pore regions in tandem; 4TM2P), and the K_{ir} channels (composed of two transmembrane domains and one pore region; 2TM1P). While the former are mainly gated by membrane voltage the latter two represent voltage independent channels, primarily regulated by the cellular signaling machinery including phosphorylation, calcium ions, nucleotides, reactive oxygen species or lipid-derived molecules.

Increasing evidences suggests that potassium channels not only exert their physiological function potassium nutrition and homeostasis. Moreover, they represent targets of signaling pathways related to plant responses towards biotic and abiotic factors. Since these factors often trigger membrane potential fluctuations and thus electrical signaling in plant cells, potassium channels could represent key components of electrical signaling pathways regulating transcriptional re-programming and adaptation by yet unknown mechanisms.

CONTACT :

Tou-Cheu XIONG

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

<http://www1.montpellier.inra.fr/ibip/bpmp/equipes/signalisation.htm>

corratge@supagro.inra.fr

Phone: + 33 (0)4 99 61 27 11

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