

# 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 20 mars 2008  
**Amphi 208 (Cœur d'Ecole) à 14h00**

**Christophe Brugidou**  
(UMR UP-IRD-CNRS/5096 - Montpellier)

## **RNA silencing, viral suppressors of RNA silencing and Rice yellow mottle virus (RYMV)**

Post-transcriptional gene silencing (PTGS), based on the viral induction of interfering RNAs (siRNAs) targeting viral RNA for degradation, is the major mechanism of defence in plants against RNA viruses. To counteract the plant antiviral response, many viruses produce suppressor proteins that block the host RNA silencing by targeting different steps of the silencing pathway. These proteins suppressors of PTGS, which are structurally and functionally very different, act by different mechanisms. At present, known PTGS suppressor proteins have been characterised in *A. thaliana* and *N. benthamiana* species, but have never been studied in cereals. We have focused on the study of rice response to *Rice yellow mottle virus* (RYMV), a major viral pathogen in Africa which encodes for two suppressors of RNA silencing: the P1 protein and the coat protein. For the P1 protein, we reported an important diversity in their ability to suppress silencing which was not linked to RYMV phylogeny, or pathogenicity. We identified a strong P1 suppressor from a tanzanianTz3 strain and a weak P1 suppressor from a Madagascar strain Mg1. Then, we proposed to elucidate the silencing suppressor strategy of these P1 proteins in *N. benthamiana*. As a first approach, we used silencing reporter systems expressing a GUS or GFP silencing to characterize the P1 function in comparison to other viral silencing suppressors already characterized. First results, and strategies to study this suppressor mechanism at the rice / RYMV level will be presented. In addition, we will present potential interesting application for the expression of recombinant proteins in plant.

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Séminaires à venir

Jeudi 27 mars : Wendy Silk, contact Christine Granier (granier@supagro.inra.fr)  
Jeudi 3 avril : Niko Geldner, Université Lausanne, contact Grégory Vert  
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