What's new in Plant-Soil-Microbe Interactions

GRR VASI Végétal - Agronomie - Sols - Innovation

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Responsables scientifiques :

Pr A. Driouich
Glyco-MEV, EA 4358
Université de Rouen
76821 Mont-Saint-Aignan cedex
azeddine.driouich@univ-rouen.fr

Dr K. Laval
Directeur de la recherche
ESITPA
3, rue du Tronquet
76134 Mont-Saint-Aignan cedex
klaval@esitpa.org

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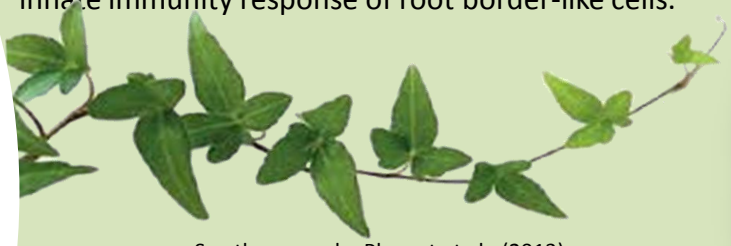
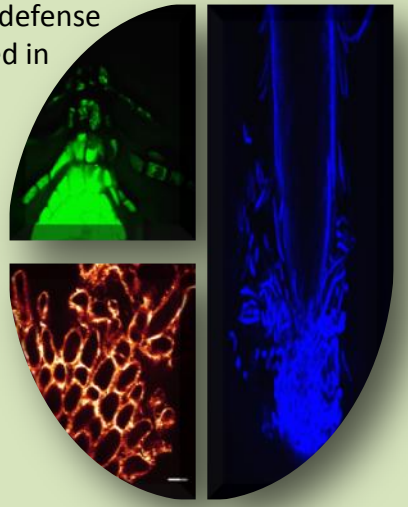
Do you know ...

... that root border-like cells of *Arabidopsis thaliana* and flax are required for plant protection.

Root *Arabidopsis thaliana* and flax root tips release cells known as "root border-like cells" in the rhizosphere. Due to their particular location at the interface between root and soil, one can speculate that these cells are crucial in root-microbe interaction. However the function of root-border-like cells has not been studied so far.

For the first time, we have investigated the responses of root border-like cells of Arabidopsis and flax to the Microbe Associated Molecular Pattern (MAMP) flagellin 22 and peptidoglycan. Both MAMPs triggered a rapid oxidative burst in root border-like cells and deposition of callose a well-known marker of plant defense against pathogens. Furthermore, modifications in the cell wall distribution of extensin epitopes also occurred. Extensins are hydroxyproline-rich glycoproteins that enhance the mechanical strength of the cell wall. In addition flagellin 22 induced over-expression of genes involved in the plant immune response in root border-like cells of Arabidopsis. Our findings demonstrate that root border-like cells of flax and *A. thaliana* are able to perceive an elicitation and activate defense responses. We also show that cell wall extensin is involved in innate immunity response of root border-like cells.





See the paper by Plancot et al., (2013)
"**Deciphering the responses of root border-like cells of *Arabidopsis thaliana* and *Linum usitatissimum* to pathogen-derived elicitors."**
In Plant Physiology.
http://www.plantphysiol.org/content/early/2013/10/11/pp.113.222356.full.pdf+html