UNESCO
United Nations Educational, Scientific and Cultural Organization

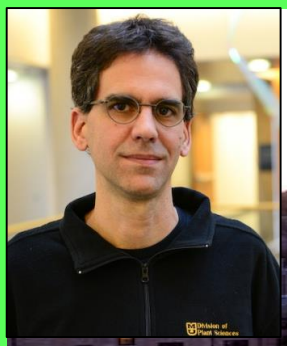
REGIONAL CENTRE FOR BIOTECHNOLOGY

an institution of education, training and research

Established by the Dept. of Biotechnology, Govt. of India
Under the Auspices of UNESCO

RCB Distinguished Seminar Series

Staying in Touch: Functions of the Arabidopsis Immune Adaptor Protein SRFR1



Prof. Walter Gassmann

Division of Plant Sciences, University of Missouri, Columbia, USA.

Biotic stresses such as insect pests and pathogenic microbes have a major negative impact on agricultural productivity. Harnessing innate capacities of plants to resist biotic stresses in order to provide sustainable solutions requires a detailed understanding of molecular mechanisms of plant resistance. Our work focuses on the molecular mechanisms of plant immunity to bacterial pathogens in the reference plant *Arabidopsis thaliana*. Plant immunity needs to be tightly controlled to enable normal plant growth, because constitutively activated defense responses are detrimental to the host. How plants achieve this balance is not fully understood. Using a genetic approach we identified the adaptor protein SRFR1 that negatively regulates immune signaling triggered by bacterial pathogens. Surprisingly, we found that *srfr1* mutants are also more resistant to chewing insects. SRFR1 encodes a pioneer tetratricopeptide repeat (TPR) protein conserved between plants and animals. A functional sub-pool of SRFR1 localizes to the nucleus, where it interacts with members of the TCP transcription factor family and transcriptional co-repressors. TCP transcription factors have been described as mainly regulating developmental processes. We therefore propose that nuclear SRFR1 functions in a transcriptional repressor complex that balances plant biotic stress resistance and development. We are currently studying how SRFR1 shapes the composition of stress response protein complexes and how this leads to integration with transcriptional responses to multiple stresses.

6th February, 2017. RCB Seminar Hall, at 3:00 pm