

Effector-triggered Stomatal Immunity Prevents Leaf Invasion by Bacterial Pathogens



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Speaker Prof. Darrell Desveaux

- Department of Cell & Systems Biology

- University of Toronto, Canada

Abstract

The phytopathogen *Pseudomonas syringae* must enter the leaf interior through natural openings such as stomata to cause disease. Plants restrict pathogen entry into the leaf through non-self recognition-driven stomatal closure. *Pseudomonas syringae* counters this stomatal immunity by deploying a range of toxins and effectors. I will present evidence that stomatal immunity in *Arabidopsis thaliana* is reinforced upon recognition of the ubiquitous *P. syringae* type III effector AvrE1 by the resistance protein CAR1. CAR1 expression is enriched in guard cells, and its activation prolongs the effective duration of stomatal immunity. CAR1 also prevents the invasion of leaf tissue by natural isolates of *P. syringae*, demonstrating that stomatal immunity provides a broadly significant barrier to host accessibility by *P. syringae* that carry the conserved effector AvrE1.