

GHI Floor Seminars

Special seminar by invited speaker

Prof. Cyril Zipfel

The Sainsbury Laboratory, University of East Anglia, UK

Plant receptor kinase-mediated innate immunity

As in animals, the first layer of plant innate immune recognition relies on the perception of pathogen-associated molecular patterns by pattern recognition receptors (PRRs). In plants, all known PRRs are cell surface ligand-binding receptor kinases or receptor-like proteins (which unlike receptor kinases lack an intracellular kinase domain; hence, requiring heteromeric complex formation with accessory receptor kinases). It is now becoming increasingly clear that plant PRRs are part of multimeric protein complexes at the plasma membrane, in a manner similar to the Myddosome for mammalian Toll-like receptors. In my presentation, I will present our recent work that shed light on the molecular mechanisms that control the activation of plant PRR complexes and of downstream cell-autonomous immune responses. In addition, I will illustrate how the use of plant PRRs represents a promising biotechnological tool to engineer disease resistance in crops.

Selected references:

- Holton et al., *PLoS Pathog.*, 1(1): e1004602.
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Macho & Zipfel C (2014) *Mol. Cell*, 54(2): 263-272.
Kadota et al. (2014) *Mol. Cell*, 54 (1): 43-55.
Macho et al. (2014) *Science*, 343 (6178): 1509-1512.
Sun et al. (2013) *Science*, 342 (6158): 624-628.
Lacombe et al. (2010) *Nature Biotech.*, 28(4): 365-369.

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