Multiple strategies for pathogen perception by plant immune receptors
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To cite this version:
Stella Cesari. Multiple strategies for pathogen perception by plant immune receptors. 41. New Phytologist Symposium. Plant science for the future, Apr 2018, Nancy, France. hal-02734164

HAL Id: hal-02734164
https://hal.inrae.fr/hal-02734164
Submitted on 2 Jun 2020

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Plants have evolved a complex immune system to protect themselves against phytopathogens. A major class of plant immune receptors called nucleotide-binding domain and leucine-rich repeat-containing proteins (NLRs) is ubiquitous in plants and is widely used for crop disease protection, making these proteins critical contributors to global food security. Until recently, NLRs were thought to be conserved in their modular architecture and functional features. Investigation of their biochemical, functional and structural properties has revealed fascinating mechanisms that enable these proteins to perceive a wide range of pathogens. Here, I review recent insights demonstrating that NLRs are more mechanistically and structurally diverse than previously thought. I also discuss how these findings provide exciting future prospects to improve plant disease resistance.