Poster
Wirt-Parasit-Beziehungen

133 - Approaches to identify the *Salmonella-Arabidopsis* interactome

Methoden zur Identifizierung des Salmonella-Arabidopsis Interaktoms

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Salmonella bacteria are one of the main causes of foodborne diseases in humans and animals worldwide being transmitted through contaminated vegetables, fruits, plant- and animal-based products. It has been shown that *Salmonella* does not only attach to plant tissue surfaces but is capable of invading and proliferating inside plant cells. This raises the question on how *Salmonella* communicates with and manipulates its plant hosts. During infection of mammalian hosts, *Salmonella* delivers a variety of effector proteins into the host cell which interfere with host cellular processes through protein-protein interactions (PPIs), thereby enabling the pathogen to invade and propagate inside the host cell. We carried out an extensive literature and database survey for the known *Salmonella*-host protein-protein interactome. This resulted in a list of 64 PPIs between *Salmonella* TTSS-1 and -2 effectors and mammalian proteins, but no experimentally identified PPI between *Salmonella* effectors and plant proteins could be retrieved (Schleker et al. 2012b). Thus, we utilized interolog and machine learning computational modeling approaches to predict *Salmonella-Arabidopsis* PPIs based on available knowledge (García-García et al., Schleker et al. 2012a). Pathway mapping of putatively targeted *Arabidopsis* proteins revealed that *Salmonella* may interfere, for instance, with plant defense response signaling pathways, protein catabolic processes and plant metabolism. Comparison with transcriptomic data revealed that genes of the same *Arabidopsis* pathways predicted to be targeted by *Salmonella* effectors are differentially regulated upon infection.

References

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134 - Untersuchungen zur Rolle der transkriptionellen Umprogrammierung der Gerste in der Interaktion mit dem Echten Mehltaupilz

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RACB ist eine kleine GTPase in Gerste, die zur Familie "Rho of Plants" (ROPs) gehört und als molekularer Schalter zwischen einem inaktiven und aktiven Status agiert (Berken *et al.* 2006). Dabei werden verschiedenste Prozesse innerhalb der Zelle angesprochen wie z.B. Zytoskelettveränderungen, Zellpolarität und Pathogenabwehr. Fehlendes oder vorhandenes RACB beeinflusst stark die Anfälligkeit von Gerste gegenüber seinem Mehltaupilz *Blumeria graminis f. sp. hordei* (*Bgh*)(Schultheiss *et al.* 2003, Hoefle *et al.* 2011). Wir fokussieren auf die Unter-