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“The plant hormone auxin promotes pathogenesis of Pseudomonas syringae”

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Pseudomonas syringae manipulates plant hormone signaling to promote infection and disease development. Recent observations suggest that *P. syringae* utilizes several strategies to manipulate auxin physiology in Arabidopsis to promote pathogenesis, including synthesis of the auxin indole-3-acetic acid (IAA) and production of virulence factors that alter auxin responses in the host. Further, application of exogenous auxin or elevated endogenous auxin within the plant enhances pathogen growth and disease caused by *P. syringae* strain DC3000. Previous studies demonstrated that auxin inhibits host defenses mediated by salicylic acid (SA). Recent data from our lab indicates that auxin promotes *Pst*DC3000 growth within the plant via a mechanism independent of suppression of SA-mediated defenses. Thus, auxin plays multiple roles during infection. Arabidopsis mutants in which multiple TIR1/AFB F-box auxin co-receptors are mutated exhibit wild-type susceptibility to *Pst*DC3000, suggesting that host auxin signaling may not be required for disease development. This raises the question of whether modulation of plant physiology is the main role for IAA during pathogenesis, and leads us to speculate that a primary mechanism by which auxin promotes pathogenesis is through a direct effect on the pathogen. We will report on our progress towards understanding the roles auxin plays during *P. syringae* pathogenesis.