

STRESS RESPONSE NETWORKS

Little and large pathogen effectors in plant resistance and susceptibility.

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Plant pathogens use small molecules and also proteins to render their hosts susceptible. Several pathogens either make plant hormones, or perturb host hormone signalling networks by other means. To counteract pathogen activation of auxin signalling, plants induce microRNA miR393 that targets the TIR1 auxin receptor, to attenuate auxin sensitivity. Furthermore, gibberellin made by fungal necrotrophic pathogens leads to attenuation of the defence response to necrotrophs by interference with jasmonic acid signalling.

In addition, many bacteria and other pathogens use a specialized secretion system to deliver proteins into host cells that interfere with host defence. We have taken advantage of the bacterial T3SS secretion system to investigate effectors from filamentous pathogens such as oomycetes. It appears that oomycete effectors can confer enhanced virulence on phytopathogenic pseudomonads when delivered by T3SS. Recent data on oomycete effector functions will be reported.