

P011 Cauliflower mosaic virus -infection and auxin signalling
in *Arabidopsis*
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Plants often respond to virus infections by developing symptoms that are reminiscent of hormonal disturbances. However, although a role for hormonal signalling in responses to virus infection has been long suspected, there is little direct evidence to support this conjecture. Analysis of the *Arabidopsis* transcriptome reveals several auxin-responsive genes to be amongst the most highly up-regulated in CaMV-infected *Arabidopsis*. Expression levels of several genes, e.g. *GH3-LIKE* and *SAG21* increase rapidly concomitantly with virus spread; others e.g. *LAX2* are negatively regulated during CaMV-infection. To further dissect the potential role of auxin, we carried out infection studies on several auxin-response mutants. *aux1* and *tir1* accumulated significantly more, and *tir3* significantly less virus than did wild type. *tir3* also showed a delay in the onset of symptoms. Transgene-mediated expression of CaMV protein P6, the main virus-encoded determinant of symptom character, gives a symptom-like phenotype in the absence of infection. We show that compared to wild-type, P6-transgenic *Arabidopsis* are significantly less sensitive to the auxin efflux inhibitor TIBA. Two (allelic) mutations *cse-1* and *cse2* act *in trans* to suppress the symptom-like phenotype in P6 transgenic lines. We show that these mutations also suppress the TIBA-resistance phenotype of P6-transgenics. Our results demonstrate an involvement for auxin-signalling in responses to infection by CaMV, and suggest a role for P6 in this interaction.