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The transcriptional regulator JAZ8 interacts with the C2 protein from geminiviruses and limits the geminiviral infection in *Arabidopsis*

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Jasmonates (JAs) are phytohormones that finely regulate critical biological processes, including plant development and defense. JASMONATE ZIM-DOMAIN (JAZ) proteins are crucial transcriptional regulators that keep JA-responsive genes in a repressed state. In the presence of JA-Ile, JAZ repressors are ubiquitinated and targeted for degradation by the ubiquitin/proteasome system, allowing the activation of downstream transcription factors and, consequently, the induction of JA-responsive genes. A growing body of evidence has shown that JA signalling is crucial in defending against plant viruses and their insect vectors. Here, we describe the interaction of C2 proteins from two tomato-infecting geminiviruses from the genus Begomovirus, tomato yellow leaf curl virus (TYLCV) and tomato yellow curl Sardinia virus (TYLCSaV), with the transcriptional repressor JAZ8 from Arabidopsis thaliana and its closest orthologue in tomato, SIJAZ9. Both JAZ and C2 proteins colocalize in the nucleus, forming discrete nuclear speckles. Overexpression of JAZ8 did not lead to altered responses to TYLCV infection in Arabidopsis; however, knock-down of JAZ8 favours geminiviral infection. Low levels of JAZ8 likely affect the viral infection specifically, since JAZ8-silenced plants do not display obvious developmental phenotypes nor present differences in their interaction with the viral insect vector. In summary, our results show that the geminivirusencoded C2 interacts with JAZ8 in the nucleus, and suggest that this plant protein exerts an antigeminiviral effect.

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