

## EFFECTS OF SILENCING AND OVEREXPRESSION OF *NIK1* , IN GEMINIVIRUS INFECTION

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*Geminiviridae* is a large family of plant virus that is divided in four genera based on genome structure, insect vectors, and host range. Bipartite geminiviruses (*Begomovirus*) possess two genomic components of  $\pm$  2600kb, DNA-A and DNA-B. The trans-acting factors involved in viral replication and transcription are encoded by the A-component, whereas the B component encodes two movement proteins: movement protein (MP) and nuclear shuttle protein (NSP) both required for systemic infection. NSP is a ssDNA binding protein that shuttles newly replicated viral genomic DNA between the nucleus and the cytoplasm. We have previously demonstrated that the NSP from the geminiviruses, CaLCuV, TGMV and TCrLYV, interact with a leucine-rich repeat-receptor like kinase, designated NIK (NSP-Interacting Kinase), from tomato, soybean and Arabidopsis. To examine the role of the NIK protein in the viral infection course we have used overexpression strategies to manipulate the level of the protein in tomato plants.. Likewise, cDNA fragment encoding the C-terminal domain of the Nik1 protein from tomato was cloned into the vector pK7GW1WG2 that induces gene silencing. Infections assays were performed with both transgenic lines using ToRMV and ToYSV to get insights into the biological relevance of such interactions.

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