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Protective effect of an antimicrobial peptide from Mytilus edulis chilensis expressed in Nicotiana tabacum L.
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Abstract

A "defensin-like" antibacterial peptide from Mytilus edulis chilensis, was sub-cloned into a binary vector for expression in plant tissues. The resulting new clone was electroporated into A. tumefaciens to transform tobacco plants. The presence of the construct in transgenic tobacco lines was demonstrated through RT-PCR, Northern and Western blots. Transformed positive plants were selected and grown for challenging. Tobacco leaves were infiltrated with Pseudomonassyringae pv. syringae and visual lesions determined at different times post-exposure. Of seven plants exposed, four gave variable protection up to seven days post-infection while one of them appears to be fully protected. These results suggest that defensin-like antimicrobial peptides from molluscs are a good source to provide resistance of tobacco plants to Pseudomonassyringae pv. syringae.

Keywords

Antibacterial peptide, disease resistance, in vivo expression, Nicotiana tabacum L., Pseudomonassyringae pv. syringae, transgenic tobacco plants