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Symptom Analysis Induced by Quantitative Changes of Geminivirus L4 Gene

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Objectives

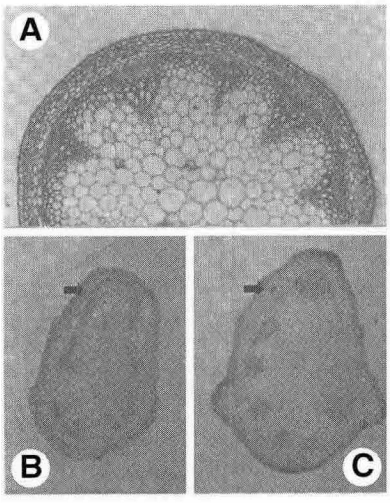
We have further defined the factors important for symptom development caused by BCTV using a molecular genetic approach based on expressing BCTV encoded proteins in transgenic plants. We analyzed the L4 gene expression by Northern hybridization in transgenic *Arabidopsis* results in a range of phenotypes that include typical BCTV inducible symptoms.

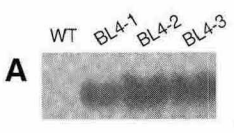
Materials and Methods

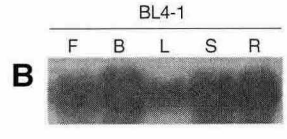
1. Materials: BCTV L4 transgenic *Arabidopsis* (ecotype Sei-O)
2. Methods: Toluidine blue Staining Method of LR White-Embedded transgenic *Arabidopsis* stem; Northern hybridization(probe; RTS radprime DNA labeling system, Gibco-BRL); Genomic southern hybridization

Results and Discussion

The factors for symptom development caused by beet curly top virus (BCTV) have been analyzed by using a molecular genetic approach based on expressing BCTV encoded proteins in transgenic plants. BCTV ORF L4 expression in transgenic *Arabidopsis* resulted in abnormal plant development and the production of callus on inflorescence stems and bumpy trichomes, confirming that this gene alone is enough to initiate cell divisions in permissive cells. Results of these studies indicate that the BCTV ORF L4 is a primary symptom determinant. The L4 gene expression by Northern hybridization in transgenic plants and a range of phenotypes were analyzed.







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