Production of Transgenic Eustoma grandiflorum Expressing Antifungal Protein (Cp-AFP3)

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ABSTRACT

Eustoma grandiflorum is one of the economically important crops in Taiwan. Fungal diseases cause serious economical loss of Eustoma grandiflorum and fungicides are used to protect against Eustoma grandiflorum diseases. In consideration of the harmful effects to the environmental ecosystem, the transgene approach is considered as a good althnare to control the fungal diseases. A transformation vector carrying anti-fungal protein gene Cp-AFP3 from Carica papaya L. was kindly provided by Dr. Xiao. Transgenic Eustoma grandiflorum lines carrying Cp-AFP3 genes were generated in this investigation and the resistance of independent transgenic lines against Rhizoctonia solani was evaluated under in vitro condition. The transgene was present in the regenerants as confirmed by PCR . Lines 3-2、8 and 17 exhibited higher levels of resistance to R. solani in vitro infection and RT-PCR analysis indicated these lines expressing relatively higher as assorted by levels of transgene transcript. Photomicrographs under fluorescence microscopy showing GFP proteins was apparently expressing in the higher resistant transgenic leaves.

Keywords : anti-fungal protein、transgenic Eustoma grandiflorum、Rhizoctonia solani

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