Greenhouse Evaluation of Transgenic Melons Expressing Antifungal Protein (AFP3) Conferred Resistance against Fungal ...

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ABSTRACT

Melon (Cucumis melo L.) is one of the economically important crops on the tropics and subtropics. Fungi disease is often causing serious economy loss of melon and fungicides are use to protect against melon diseases. In consideration of the harmful and dangerous effects to the environment ecosystem, maybe the transgene approach has better to control the fungal diseases. The anti-fungal protein gene constructions, Bo-AFP3-HB-GFP and Cp-AFP3-HB-GFP, were kindly supplied by Dr. Xiao, Jei -Fu of Academia Sinica. Transgenic melon lines carrying Bo-AFP3-HB-GFP or Cp-AFP3-HB-GFP genes were previously generated in our laboratory. Therefore, this study evaluated resistance of independent transgenic lines against Rhizoctonia solani under greenhouse condition. The transgene was inserted into the genomic DNA of the regenerates confirmed by PCR and Southern blotting. Line B28 、line C14 and line C25 exhibited higher resistance 2days postinoculation R. solani and RT-PCR analysis indicated these lines relatively expressing high levels of afp3 mRNA. Photomicrographs under fluorescence microscopy showing GFP proteins was apparently expressing in the higher resistant transgenic leaves.

Keywords : anti-fungal protein, transgenic melon, Rhizoctonia solani

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