抗真菌蛋白轉基因洋桔梗之構築

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摘 要

洋桔梗(Eustoma grandiflorum)，屬龍膽科(Gentianaceae)一年生或多年生草本花卉，原產美國中南部內布拉斯加至德州一帶，台灣地區農作物多元而複雜，病蟲害的發生率也相對提高，其中微生物引起的病害中80%以上是經由真菌所引起，一般藉由噴灑大量的農藥或抑菌劑來克服病害，因考慮到農藥對環境的危害及殘留的疑慮，希望能藉由遺傳工程的方式，將抗真菌蛋白基因導入植物體內，期望可達到防治效果。利用扣除雜交法由木瓜成熟果實所得到之抗真菌蛋白基因之構築體Cp-AFP3，由中央研究院蕭介夫博士提供，經胺基酸序列比對，發現其結構類似於植物防禦素(plant defensins)中的AFP3蛋白的基因。本研究主要將Cp-AFP3基因以農桿菌轉殖的方式，將此抗真菌蛋白基因送入植物體內，並進行相關的抗菌分析，期望抗真菌蛋白基因在洋桔梗中大量表現，減低真菌所帶來的危害，目前已轉殖出8個具有Cp-AFP3基因之轉基因洋桔梗株系，本試驗將進一步做相關之分子分析與病原真菌接種試驗。在瓶內以紋枯病原菌接種，結果發現接種4-10天後，非轉基因植物均已產生病徵或相繼罹病死亡，而轉基因洋桔梗line 3-2、line 8、line 17則展現了相當不錯的抗性，轉基因植株與非轉基因植物相較之下，有較佳的抗性。於RT-PCR分析與GFP蛋白質觀察後，發現抗性較高之轉基因植株，產生之轉基因蛋白質量也相對較高。

關鍵詞 : 抗真菌蛋白、轉基因洋桔梗、紋枯病

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