幾丁質分解酵素之轉基因洋桔梗抗真菌之評估

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摘 要

洋桔梗(Eustoma grandiflorum)，屬於龍膽科(Gentianaceae)一年生或多年生草本花卉，為目前十分流行的觀賞花卉，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體內，期望可以達到防治效果。本研究將從木瓜果實所找到幾丁質分解??CP-CHI)轉殖到到洋桔梗中，來觀察轉基因洋桔梗表現外來幾丁質分解?★鵠颽v桔梗真菌病害之抗性。在本研究已成功轉殖出8個轉基因洋桔梗株系，在聚合?￣嚍磥狻酗尷R試驗中，偵測到基因確實存在genomic DNA中。瓶內接種真菌的實驗中發現：在接種Rhizoctonia solani之後，未轉基因的植物四天時會開始呈現萎凋、莖爛並且在8天內會完全罹病死亡，而轉基因的洋桔梗有2個株系抗性較好，在8天時Line 1、Line 3最嚴重的狀態只有葉片萎凋或些微黃化的情況，在接種Sclerotium rolfsii之後，未轉基因的植物葉子四天時會開始呈現褐腐、莖爛並且在5天內會完全罹病死亡，而轉基因的洋桔梗有1個株系抗性較好，在4天時Line 3最嚴重的狀態只有葉片些微褐化的情況，可以證明比非轉基因的植物有抗性，於是再進行Rhizoctonia solani溫室接種，發現在第12天時，非轉基因洋桔梗植株發病死亡時，轉基因的2個植株僅有些微的病徵，尤其以Line 1的抗性為最佳，可存活20天以上。所以針對此2個轉基因植株再進行西方點漬法的分析，發現蛋白質表現量的增加。

關鍵詞 : 抗真菌蛋白、洋桔梗、真菌

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