抗矮南瓜黃化嵌紋病毒及木瓜輪點病毒之轉基因西瓜株之後代抗病分析

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摘 要

台灣全年氣候適合瓜類栽植，栽培面積廣大且種類繁多，其中以西瓜和甜瓜為大宗。病毒危害目前仍無任何化學藥劑可以防治，因此造成瓜類嚴重的經濟損失，其中以矮南瓜黃化嵌紋病毒(Zucchini yellow mosaic virus ; ZYMV)及木瓜輪點病毒西瓜系統(Papaya ringspot virus Type-W ; PRSV-W)為危害西瓜最嚴重之病毒種類。本研究之前已構築出11個具有ZYMV-PRSV-W複合鞘蛋白之轉基因株系。由結果發現ZW10在接種後，利用ELISA、western blotting及northern blotting分析中，均偵測不到ZYMV及PRSV-W兩病毒的存在。因此，將ZW10歸類為免疫性(immunity)，且ZW10在Southern blotting分析後，發現為單一個copy併入西瓜之染色體中。ZW10接種前，可偵測出Small interfering RNA (siRNA)累積，顯示對病毒抗性機制為RNA媒介的後轉錄基因沉寂(post-transcriptional gene silencing)。ZW10 自交子代利用康黴素篩選顯示符合孟德爾遺傳分離律。

關鍵詞 : 轉基因西瓜、病毒鞘蛋白、後轉錄基因沉寂

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