白點症病毒結構性蛋白質VP11(ORF394)之特性分析

熊慧叡、張雲祥

E-mail: 321850@mail.dyu.edu.tw

摘 要

白點症病毒(White spot syndrome virus, WSSV)是一個具有套膜的病毒，白點症病毒顆粒由三個結構層：外套膜、中間層和核鞘蛋白，圍繞它的核心DNA所構成。本研究針對白點症病毒結構性蛋白質VP11 (WSSV-T1 ORF394, GenBank accession no. AF440570)從事其特性分析。純化病毒顆粒以不同鹽濃度之Triton X-100溶液剝離其結構後以西方墨點法(Western blot)以及免疫電顯分析，得知VP11為一外套膜蛋白；膜拓璞學預測分析中顯示，VP11蛋白質在N端有高疏水性的穿膜區，而其C端則完全暴露於膜外，而以Sf9昆蟲細胞表現重組VP11並利用免疫螢光分析也得到與上述預測相同的結果，然而直接於病毒顆粒作用則得到相反的結果。本實驗室先前的研究解析出白點症病毒幾個主要結構性蛋白質間的交互作用，因此本研究也將VP11與這些已知關係的結構性蛋白質兩兩進行免疫沉澱(Co-immunoprecipitation)分析，結果發現VP11與外套膜蛋白質VP51A (WSSV-T1 ORF294)以及與其自身皆有交互作用。在酵母菌雙雜交分析結果證實VP11具有自體激活之特性，推測VP11可能為一轉錄因子，因此VP11可能在白點症病毒的生活週期，如病毒顆粒組裝和調控病毒基因表現扮演重要的角色。

關鍵詞 : 白點症病毒、VP11、結構性蛋白質、蛋白質交互作用、自體激活

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