

產聚麩胺酸Bacillus菌種之分離與特性分析

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摘要

本研究從土壤中分離具有產聚麩胺酸(γ -polyglutamic acid, γ -PGA)的菌株TPX 110A 及 TPX 108，兩者之16s Rdna定序後發現都與枯草芽孢桿菌(*Bacillus subtilis*)菌種基因最為相似。在對於 γ -PGA產量進行評估時發現，TPX110A γ -PGA於粗萃時產量高於TPX 108，產量達35 g/L，故本研究挑選以TPX110A 菌株作為後續實驗分析。TPX110A 產物以酒精沉澱後經過透析，冷凍乾燥後可得較精純的 γ -PGA。為確定其產物是否為 γ -PGA，我們將樣本以鹽酸水解後與標準品(L-glutamic acid)分別以液相層析質譜儀(LC/MS)、氣相層析質譜儀(GC/MS)及薄膜色層分析(TLC)進行分析對照。TLC實驗結果證明TPX110A之 γ -PGA與標準品是相同的物質，而經LC/MS圖譜分析後雖然不易辨識，不過由GC/MS圖譜分析結果顯示其成份證明為L-glutamic acid。為證明PGA是由 γ -peptide bond鏈結，我們在產物中加入Protease K水解後，與對照蛋白bovine serum albumin (BSA)相比，TPX 110A之 γ -PGA並不會被水解，故經TPX 110A所能量產的物質確定為 γ -PGA。

關鍵詞：聚麩胺酸、枯草桿菌、液相層析質譜、氣相層析質譜、薄膜色層分析

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