N-乙醯幾丁寡醣生產菌之篩選與幾丁質分解?」妖S性分析=Isolation of an N-acetylchitooligosaccharides producing bacterium ...

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摘 要

本實驗自彰化新寶地區採樣，篩選具分解幾丁質分解酵素之菌株，初步命名為DYU-Too12，經檢驗後得知此菌株為革蘭氏陰性桿菌。 在培養過程中調控起始溶氧量（100%與40%飽和溶氧），以探討其對幾丁質分解?活性與N-乙醯幾丁寡醣生成之影響。結果顯示，當起始溶氧量為100%與40%飽和溶氧，分別於培養第48與60 h，幾丁質分解?具最高活性為 833與933 U/L。兩者（100%與40%飽和溶氧）生成之水解產物皆以一~四醣為主，其中N-乙醯葡萄醣胺，最高分別為3.06與0.1 g/L；N-乙醯幾丁二醣，最高分別為1.0 與0.41 g/L；N-乙醯幾丁三醣，最高分別為0.22 與0.40 g/L；N-乙醯幾丁四醣，最高分別為0.19與1.03 g/L。由此結果顯示，於起始溶氧量40%下培養菌株Too12，可生成之N-乙醯幾丁寡醣的聚合度較高。 以不同體積（100與200 mL）培養菌株Too12，探討其對酵素生成之影響。菌株Too12以培養體積（100與200 mL）分別培養72與96 h後所得粗酵素液，經硫酸銨沉澱、透析、DEAE-Sepharose CL-6B及Sephacryl S-100純化步驟後，收集具活性之波峰，酵素之比活性分別為4.70與4.02 U/mg protein，回收率為21.8%與7.23%，純化倍率為3.80與2.77。最適反應溫度為40℃與最適反應pH值為6.0，金屬離子Hg2+、Zn2+、Ag+及Mn2+對於幾丁質分解?活性皆有抑制作用，而EDTA對幾丁質分解?之活性則促進作用。

關鍵詞 : N-乙醯幾丁寡醣、幾丁質分解?、酵素分離純化

目錄

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