

具有分解纖維素與木聚醣能力之環境菌(Bacillus sp.) MGM7 特性分析

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摘要

在能源危機的二十一世紀，替代能源的尋找已經是一個不可避免的問題。而以生質柴油與生質酒精最為世界所期待。生質酒精主要是利用微生物分解澱粉或纖維素產生葡萄糖，再將其發酵產生酒精得到。澱粉的分解主要是分解穀物澱粉而來，造成與人爭食以致糧食短缺、糧食價格飛漲的現象。而纖維素乃是地球上最大的碳資源，主要以葡萄糖之結晶組合而成，雖然有極大的碳量卻不容易分解。為此，纖維素的利用乃是亟待突破的重要課題。本研究目的即在於自採集之土壤中分離出分解纖維素之Bacillus菌種，利用其孢子耐高溫特性，以菌落檢測法分離出具有纖維素?活性之菌株，經由Zymogram分析活性蛋白，再將由Sau3A1限制?隨機切割後的細菌染色體DNA與經Bam H1限制?切割後的載體(pBCKS+)黏合，並將基因選殖出來至大腸桿菌中表現與分析。在實驗後可以得知，此MGM7菌種分析後纖維素?蛋白質大小為100~110 KDa，並經由限制?Sau3 A1水解染色體DNA後，與載體(pBCKS +)接合且轉型至DH5⁺，再使用菌落檢測法作為篩選。

關鍵詞：纖維素?、菌落檢測法、生質酒精

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