

微生物分解能力傳遞之探討

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摘要

微生物在分解一些難分解或持久性有機物時，必須要有適當的分解機制；這些機制一般認為是由染色體外之plasmid所進行，plasmid帶有代謝途徑的訊息，可以提供原宿主分解能力，也可藉由細菌之接合作用(conjugation)進入其他細菌體內，因此而將plasmid之能力水平轉移至其他細菌。本研究利用具分解能力之活性污泥，從中篩選出具分解目標污染物2,4-D之單一純菌，並且送往鑑定中心進行DNA序列定序，確認其菌屬名稱後嘗試將其分解能力傳遞予Escherichia coli及Bacillus subtilis菌，探討分解能力接受者是否能夠得到來自傳遞者的分解能力，並且能夠持續獨立進行分解2,4-D。實驗結果顯示：1. 來自活性污泥篩選分析後，所得之純菌經鑑定確定為Bacillus cereus菌，此菌種對於2,4-D之分解情況良好。2. 不具分解能力之純菌混合Bacillus cereus菌其分解速度皆有比單獨Bacillus cereus菌獨立分解時來的快，所增加的速度應當為已接受分解能力之不具分解能力純菌所表現。

關鍵詞：plasmid；2,4-D；接合作用；分解能力；水平傳遞

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