

Screening, Characteristics and Production of Biosurfactant-Isolates in Taiwan

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ABSTRACT

Biosurfactants are amphiphilic compound produced by microorganism. Most of the biosurfactants that produced by bacteria or fungi, can make low surface or interface tension. *Bacillus subtilis* produces lipopeptide biosurfactants which has excellent interfacial activities, is called surfactin. Cell immobilization facilitates the separation of cell from extracellular products. This search is screening and identifying new bacteria species from wild environment and to understand the behavior of new species in the bioreactor. Resulted showed that we have succeeded find out new species from wild environment. We use mineral salt media (M. S. M.) to culture new species. Then we had low surface tension which is below 30 dyne/cm. The results of the Gram 's test are negative. The growth behavior of species 110, 111 is similar *Bacillus subtilis*. Either different kinds of hydrocarbons or different volumes of petroleum, the new species can use it for growth. Using bioreactor to culture the bacteria, we got 0.1713g/L of surfactin with *Bacillus subtilis* ATCC 21332 and 0.567g/L of crude biosurfactant with new species 110. The surfactin tension which using sodium alginate immobilized new species is 51.0, 62.6, 61.7 dyne/cm.

Keywords : biosurfactant ; surfactin ; bioreactor ; screening ; immobilization

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