

Potential for Biodegradation of Hydrocarbons by Microorganisms Isolated from Antarctic Soils

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Seventeen pure aerobic microbial isolates were obtained from soil samples of three regions of Antarctica: Casey Station, Dewart Island and Terra Nova Bay. Most of them were gram positive coryneform bacteria. Isolates were tested for their ability to grow on mineral salt agar plates supplemented with one of the following model *n*-alkanes or aromatic hydrocarbons: hexane, heptane, paraffin, benzene, toluene, naphthalene and kerosene. Cell hydrophobicity, the ability to produce anionic glycolipids and extracellular emulsifying activity were also determined and assessed on the basis of growth of soil isolates on hydrocarbons. This study revealed degraders with broader abilities to grow on both types of hydrocarbons, good production of glycolipids and emulsifying activity. On this basis, a mixed culture of strains is proposed, which may find application for bioremediation at temperate temperature of soil environments polluted with different hydrocarbons.

Key words: Hydrocarbons, Hydrophobicity, Emulsifying Activity