Screening of Philippine Actinomycetes for Biosurfactant Production

Alvin P. Jimenez[1] and Virgie A. Alcantara[1*]

[1]Biotechnology for Industry, Environment and Energy Program (BIEEP), National Institute of Molecular Biology and Biotechnology (BIOTECH) - University of the Philippines Los Baños, Laguna, 4031, Philippines

apjimenez@up.edu.ph; vaalcantara@up.edu.ph*

Key words: Actinomycetes, biosurfactant, emulsification index, *Streptomyces* sp.

Abstract

Biosurfactant are non-toxic and biodegradable surface active agents that can replace petroleum-based surfactants used as emulsifier, dispersants and foaming agents. In this study, twenty-eight (28) actinomycetes isolated from volcanic soil samples and distillery effluent, sludge, mud press and coco dust were screened for the production of extracellular biosurfactant. Preliminary screening was done by lipase assay and drop collapse test and showed that 21 isolates are potential biosurfactant producers. Emulsification activity (E_{24}) of the isolates positive for the preliminary tests were determined wherein several isolates exhibited high emulsification activities ranging from 43.58% -- 47.14%. This study implies that actinomycetes have a potential in biosurfactant production and can be further studied for optimization and industrial scale production.