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Screening, Identification and Characterization of Biosurfactant producing strains from oil contaminated soil- A viable source for degradation of crude oil fraction.

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Abstract : In this study, biosurfactant producing bacteria were isolated from soil samples collected from oil spills at Chennai petroleum corporation limited (CPCL). Micro-organism was screened for biosurfactant production using oil spreading technique, emulsification stability and rapid drop collapse activity. Homology analyses of 16S rRNA sequences with BLAST showed that isolates correspondedto four different genera under same species with genetic similarity values close to 100 % belongs to bacillus species.The emulsification activity was quite stable at temperature125^0 C, pH 13. The Structural characterization of the extracted biosurfactant was determined with FT-IR spectroscopy which revealed the chemical structure of the crude biosurfactant as lipopeptide. The oil recovery in soil column studies revealed that biosurfactanthave better oil recovery efficiency, thus being more attractive to be applied in Microbial Enhanced Oil Recovery.

Key words: CPCL,16S rRNA,BLAST,FT-IR,lipopeptide, MEOR.

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