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Identification of biosurfactant producing *Bacillus sp*. isolated from Sirri Island petroleum contaminated soils

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Biosurfactant are amphiphilic compounds produced by microorganisms which either adhere to cell surfaces or are excreted extracellularly in the growth medium. The aim of this study was to isolate biosurfactant producing bacteria and optimize the conditions like temperature, pH and using crude oil, glucose and diesel as source for maximum biosurfactant production. Samples were collected from 8 selected points of oil contaminated soils in Sirri Island-Iran. Primary screening tests including hemolytic activity, drop collapse technique and oil spreading method were performed and species with the best results were picked for complementary screening tests like emulsification activity, foaming and surface tension measurement. The isolated biosurfactant were identified using TLC method. Totally, 81 bacteria species were isolated. During primary and complementary screening tests, 29 species showed hemolytic activity, 23 had drop collapsing ability and 18 species showed positive results in emulsification, foaming and surface tension reduction. Finally, two *Bacillus sp*. were found to be able to reduce surface tension less than 40mNm-1. Two strains with a high amount of biosurfactant production and emulsification ability were resulted from the present study. According to the high potential of *Bacillus sp*. especially for microbial enhanced oil recovery (MEOR) and bioremediation of oil contamination we can hope that further study of the isolates characteristics and looking for new local strains can play an important role in their application in oil industry.

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