
Biosurfactant production by isolated bacteria oil contaminated coastal regions of Caspian sea

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Introduction: Microbial surfactants (biosurfactants) are unique amphipathic molecules with extensive application in removing organic and metal contaminants.

Biosurfactants produced in living spaces or excreted hydrophobic and hydrophilic moieties that confer on the organism the ability to accumulate between fluid phases thus reducing surface and interfacial tension. Biosurfactants are produced by several microorganisms. Biosurfactants have several applications in agriculture, industry, medicine and petroleum sectors. The purpose of this study was to isolate the biosurfactant-producing bacteria and characterize the surface-active properties of the metabolites produced, Caspian lake beach. **Material and Methods:** This study was conducted in Caspian sea coastal regions. 27 oil-contaminated soil sample was collected and ten surfactant producing bacteria were isolated from oil-contaminated sites in Caspian sea. In primary screening, hemolytic and emulsifying activities were performed on culture medium and in blood agar plates, respectively then reduction in the surface tension, as a biosurfactant-producing index, was determined quantitatively. **Results:** The commercial and identification tests showed that the best surfactant producer belonged to *Bacillus* genus that could reduce the surface tension to 67/5 mN/m. **Conclusion:** The best surfactant producer strain is recommended for commercial application.

Keywords : Biosurfactants, *Bacillus*, Oil-contaminated, Surface tension

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