

## Different Methods of Producing Bioemulsifier by *Bacillus licheniformis* Strains

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**Abstract :** Biosurfactants and bioemulsifiers are a structurally diverse group of surface-active molecules synthesized by microorganisms, they are amphipathic molecules which reduce surface and interfacial tensions and widely used in pharmaceutical, cosmetic, food and petroleum industries. In this paper, several methods of bioemulsifier synthesis and purification by *Bacillus licheniformis* strains (namely ACO1, PTCC 1595 and ACO4) were investigated. Strains were grown in nutrient broth with different conditions in order to get maximum production of bioemulsifier. The purification of bio emulsifier and the quality evaluation of the product was done by adding sulfuric acid (H<sub>2</sub>SO<sub>4</sub>) (98%), Ethanol or HCl to the solution followed by centrifuging. To determine the optimal conditions yielding the highest bioemulsifier production, the effect of various carbon and nitrogen sources, temperature, NaCl concentration, pH, O<sub>2</sub> levels, incubation time are indispensable and all of them were highly effective in bioemulsifiers production.

**Keywords :** biosurfactant, bioemulsifier, purification, surface tension, interfacial tension

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