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**Chromobacterium violaceum as a potential biosurfactant-producing microorganism**

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**Abstract**

*Chromobacterium violaceum* is a Gram-negative bacterium found in the soil and water in tropical and sub-tropical environments. Its complete genome sequence revealed wide varying alternative pathways for energy generation, complex and extensive systems for stress adaptation, motility and widespread utilization of quorum sensing for control of its inducible systems. Biosurfactants are amphiphilic compounds produced by microorganisms, both intra and extracellularly, that reduce surface and interfacial tensions.

In this work, *C. violaceum* UCP 1552 isolated from the contaminated area of Pernambuco, was used. Biosurfactant production was carried out in 500mL Erlenmeyer flasks containing 250mL of LB medium [tryptone – 10g/L, yeast extract – 5g/L, sodium chloride – 5g/L] plus 5g/L glucose and 1.6g/L soy oil, at 150 rpm and 30°C. Samples were collected at different fermentation times (from 0 to 188h) to evaluate cellular growth, glucose consumption and biosurfactant production (by reduction of surface tension and emulsification index determination).

Biomass growth was observed during the first 96h and afterwards the cells entered the stationary phase. Moreover, glucose was consumed in the first 30h. Surface tension of the fermentation broth free of *C. violaceum* cells recovered after 188h was found to be 32 mN/m. The highest emulsification index was observed for 12h experiment, being 56 and 59% for sunflower oil and n-hexadecane, respectively.

Results gathered in this study reveal the *C. violaceum* potential as a biosurfactant-producer opening novel perspectives for its application in the environmental area.

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