

Characterization of BTEX degrading bacteria

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Introduction: Benzene, toluene, ethylbenzene and xylene (BTEX), are compounds presents in the environment due to their ubiquitous presence in fuel and petroleum products, which represent an important class of environmental contaminants because of their recognized toxicity to different organisms. The biological processes (bioremediation) to remove the contaminants from the environment are regarded as a clean technology, because of their simplicity, low cost and efficacy when compared to other alternatives. The objective of this study is obtain a collection of bacteria that might be suitable for bioremediation purposes to remove BTEX and others polycyclic aromatic hydrocarbons (PAHs) compounds. **Material and Methods:** A total of 600 bacterial strains isolated from soil samples (1,0 m depth) of the campus Leste of University of São Paulo (USP Leste) were tested to determine their growth in BTEX as an increase in the optical density at 600 nm in carbon-free medium minimal salts (MMS) supplemented with 10 mM benzene, 10 mM ethylbenzene, 5 mM toluene, 15 mM xylene or 1% glucose, and incubated at 30°C, for 16 h, with constant shaking in Infinite M200 pro Tecan microplate reader. Assays were performed in triplicate. **Results and Discussion:** Six strains (EACHS02-F1; EACHS03-G1; EACHS04-D11; EACHS05-D11; EACHS05-G12; EACHS06-D5) were able to utilize single BTEX or mix BTEX as a carbon source. The strains isolated will be classified on the basis of 16S rRNA gene. **Conclusions:** Bioremediation use the natural capacity of soil-microorganism to degrade BTEX. This work identified and selected BTEX-biodegrading bacteria's present in soil from USP Leste and evaluated the efficiency of microorganism in the biodegradation process of BTEX

Key words: Bacteria; BTEX; Bioremediation; Soil; USP Leste.

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