

Biodegradation Mechanism of Phenanthrene by Halophilic *Hortaea* sp. B15

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ABSTRACT

This aim of the study is to investigate a halophilic bacterium *Hortaea* sp. B15, isolated from petroleum-contaminated soil for biodegradation of phenanthrene. *Hortaea* sp. B15 has the ability to completely degrade phenanthrene (100 mg/L) under salinity 10% within 1-week incubation. The metabolic product of phenanthrene was identified and assayed by using ultraviolet-visible spectrophotometer and mass spectral analysis. Result revealed that *Hortaeasp.* B15 metabolized phenanthrene to form 9,10-phenanthrene quinone, salicylic acid, and gentisic acid. *Hortaea* sp. B15 has an efficient utilization of phenanthrene in high-saline liquid medium. All the results indicated that the fungus has a promising application for the study of high-molecular-weight PAH biodegradation and contaminated saline-alkali soil bioremediation.

KEYWORDS:

Hortaea sp. B15; Phenanthrene; Biotransformation; Metabolites