

عنوان مقاله:

Isolation and characterization of phenol degrading bacteria from Midok copper mine at Shahrabak provenance in Iran

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خلاصه مقاله:

Phenol is one of the major aromatic pollutants among variety of toxic compounds. Phenol is a man-made as well as a naturally occurring aromatic compound and an important intermediate in the biodegradation of natural and industrial aromatic compounds. To clean up the aromatic contaminated sites a bioremediation method is considered as an economical and safe approach for the environment. In this study, 10 phenol-degrading bacterial strains were isolated from three sites at Midok copper mine in Shahrabak. These sites include: Magnetit site (WG), Hematit site (WH) and Near Hematit site (NH). Total heterotrophic and phenol degrading bacteria were quantified with most probable number (MPN) and colony forming unit (CFU) methods. The results of this study show that the (WG) site of the mine have the highest phenol degrading bacteria. Totally 10 phenol degrading bacteria were isolated from three sites in Midok copper mine. Then, five bacterial strains were selected according to high growth rate and phenol degradation. Finally two strains named isolates P62 and 69P were selected for analysis of 16S rRNA sequences. Strain P62 belongs to *Pseudomonas putida*AHBP62 and strain P69 is related to *Arthrobacter scleromae*AHB69P that has capability degradation of 600 (ppm) phenols in 7 days. By using these degradative bacteria in contaminated mine sites the environmental pollution can be managed.

کلمات کلیدی:

Degrading bacteria, Phenol, Midok copper mine, *Pseudomonas putida*

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