

The Effect of Bacteria on Mercury's Biological Removal

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Abstract : Heavy metals such as Mercury are toxic elements that enter the environment through different ways and endanger the environment, plants, animals, and humans' health. Microbial activities reduce the amount of heavy metals. Therefore, an effective mechanism to eliminate heavy metals in the nature and factory slops, is using bacteria living in polluted areas. Karun River in Khuzestan Province in Iran has been always polluted by heavy metals as it is located among different industries in the region. This study was performed based on the data from sampling water and sediments of four stations across the river during the four seasons of a year. The isolation of resistant bacteria was performed through enrichment and direct cultivation in a solid medium containing mercury. Various bacteria such as *Pseudomonas* sp., *Serratia Marcescens*, and *E.coli* were identified as mercury-resistant bacteria. The power of these bacteria to remove mercury varied from 28% to 86%, with strongest power belonging to *Pseudomonas* sp. isolated in spring making a good candidate to be used for mercury biological removal from factory slops.

Keywords : bacteria, Karun River, mercury, biological removal, mercury-resistant

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