

## ISOLATION AND IDENTIFICATION OF CADMIUM -RESISTANT BACTERIA FROM CEMENT PLANT SOIL IN ALGERIA

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### ABSTRACT

The bioremediation of metallic pollutants using heavy metal-resistant bacteria is a very important aspect of environmental biotechnology. This biological process leads to the removal of heavy metals from contaminated areas. The first step in bioremediation is the screening of metal-resistant bacteria. In this study, we assessed the soil contamination level of the cement plant by carrying out measurements of certain heavy metals. A total of twelve cadmium-resistant strains were selected and studied among twenty three isolated from the soil of cement plant. The strains showed great resistance to cadmium, minimal inhibitory concentrations (MIC) oscillate between 400 and 1800  $\mu\text{g.mL}^{-1}$ . The most resistant strain, designated YL-QS1, was selected and the sequencing of the 16S rRNA gene and the phylogenetic analysis revealed that the isolate is identified as *Raoultella ornithinolytica*, with a MIC of 1800  $\mu\text{g.mL}^{-1}$ . The objective of this study was to isolate and identify cadmium-resistant bacteria from contaminated soil, for use in bioremediation.

**KEYWORDS:** Pollution; Soil; Bacteria; Bioremediation.