

On the basis of morphological, biochemical, 16S rRNA gene sequencing and phylogeny analysis, the isolates were authentically identified as *Shewanella oneidensis* in addition to *Bacillus thuringiensis* and *Deinococcus radiodurans*. This can be clarified from an elevated percentage of Pb through absorbed (51.06%) in 2h and the absorption of Cd (63.46%) in concentration 50 mg/L. These bacteria were isolated from soil collected from Al-Zubair district in Basra governorate southern Iraq. The minimal inhibitory concentration (MIC) of isolates against cadmium (Cd) and lead (Pb) was determined on solid medium.