

Copper removal using *Ochrobactrum* species isolated from contaminated wastewater

Mohammed Umar Mustapha*, Normala Halimoon and Wan Lutfi Wan Johari

Faculty of Environmental Studies, Universiti Putra Malaysia,
43400 UPM Serdang, Selangor Darul Ehsan.

Abstract

Bacterial metal removal has received considerable attention recently, due to the potential use of microorganisms for treatment of contaminated wastewater. Removal and recovery of heavy metal ions from polluted wastewaters has appeared to be the potential alternative method for conventional treatment of contaminated wastewater. The purpose of the present work was to study the removal capacity of toxic metal from contaminated wastewater by using *Ochrobactrum* sp. isolated from contaminated wastewater using different pH and temperature. Bacteria species have a high surface area to volume ratio, due to their small size and thus, they can offer a large contact interface that would interact with metals ion. The interactions between metal ions and functional groups on the cell wall of the biomass were observed using SEM and EDX analysis. The results indicated that bacterial isolate *Ochrobactrum* sp. is a suitable biosorbent for the removal of Cu(II) ion from metal polluted wastewater and might be applicable to the development of possibly cheap biosorbent for removing and recovering copper from effluents.

Keywords: Copper, *Ochrobactrum*, metal-polluted soils.

*Corresponding author: umardrc@gmail.com