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Full Length Research Paper

Biosorption of mercury by capsulated and slime layer-forming Gram -ve bacilli from an aqueous solution

Saleh M. Al-Garni*, Khaled M. Ghanem and Ahmed S. Ibrahim

Biological Sciences Department, Faculty of Sciences, King Abdul-Aziz University, P.O. Box, 80203, Jeddah 21589, Saudi Arabia.

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The biosorption of mercury by two locally isolated Gram-ve bacilli: *Klebsiella pneumoniae* ssp. *pneumonia* (capsulated) and slime layer forming *Pseudomonas aeruginosa*, was characterized. Mercury adsorption was found to be influenced by the pH value of the biosorption solution, initial metal concentration, amount of the dried biomass and contact time. The optimum biosorption capacity of *K. pneumonia*e (about 15%) was recorded at pH 5, initial mercury concentration of 0.1 g/L and when contacted for less than 60 min with 1.0 g dried cells/L. While, the highest biosorption capacity of *P. aeruginosa* (about 25%) was reached at pH 5.8, initial mercury level of 0.15 g/L and for less than 60 min contacted with 1.0 g dried biomass/L. The efficiency average of slime layer forming *P. aeruginosa*, of high negatively charged components, showed more than 1.5 fold increase as compared to capsulated *K. pneumonia*e of low negatively charged constituents, under all the tested characteristics of mercury biosorption from aqueous solution.

Key words: Biosorption, mercury, *Klebsiella pneumoniae, Pseudomonas aeruginosa,* capsulated and slime forming bacilli.