

Biosorptive removal of cadmium by the protonated *Corynebacterium glutamicum* biomass generated from a full-scale lysine fermentation process

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In this study, *Corynebacterium glutamicum* biomass generated from full-scale lysine fermentation process was tested for the removal of cadmium from synthetic wastewater. Most of the wastes have been treated via sea dumping. The equilibrium sorption isotherms determined at different solution pH indicated that the uptake of cadmium increased significantly with increasing pH. And during sorption of cadmium the solution pH increased, indicating that protons in the biomass are exchanged with cadmium ions. In addition, the kinetics of cadmium reduction by protonated *C. glutamicum* biomass were studied under various pH values and initial concentrations of cadmium and biomass. For the practical purpose, desorption capacity and effects of impurities were examined. Consequently, the protonated *C. glutamicum* biomass could be considered as a potentially useful sorbent to remove cadmium from cadmium-bearing wastewater.