Environmental remediation of thorium(IV) from aqueous medium onto *Cellulosimicrobium cellulans* isolated from radioactive wastewater

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**ABSTRACT**

*Cellulosimicrobium cellulans* (*C. cellulans*) was isolated from radioactive wastes and identified by Biological examination. The investigation of the removal of thorium from aqueous solutions was carried out using the isolated living and dead *C. cellulans*. The biosorption of thorium was studied using different thorium ion concentrations. Electron microscopic examinations of both living and dead *C. cellulans* before and after biosorption of thorium ions were done to locate the sites of metal ion biosorption and to find the difference between living and dead bacterial cells. The obtained results showed that living and dead *C. cellulans* could sorb 151.94 and 220.56 mg/g, respectively. The kinetic behavior and biosorption isotherm were defined. These data kinetically followed the pseudo-second-order model and indicated a good fitness with the Langmuir model.

**Keywords:** Biosorption; *Cellulosimicrobium cellulans*; Thorium

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