

Influence of clay minerals on chromium(VI) reduction by resting cells of *Pseudomonas aeruginosa*

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Results

Reduction of 10 mg/L of Cr(VI) to Cr(III) by resting cells of *P. aeruginosa*, without clay minerals, follows a pseudo first-order kinetic with a 4.4 h of half-life of Cr(VI). Addition of clay minerals results in decreases in Cr(VI) reduction rates. Our results are shown in the figure.

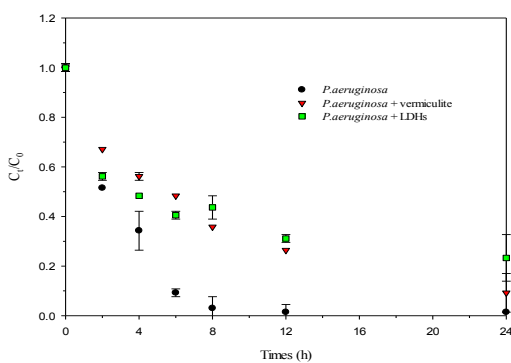


Figure 1. Effect of clay minerals on Cr(VI) reduction by resting cells of *P. aeruginosa*

Discussion of Results

The decrease in Cr(VI) reduction efficiency in the presence of clay minerals is attributed to the adsorption of Cr(VI) on clay minerals [1, 2], as well as the interplay occurred between cells and clay minerals [3, 4]. And analogously, Huang et al. [5] have pointed out that addition of mineral sorbents resulted in pronounced decrease in reduction rates (32-1540 h As(V) half-life), due to the adsorption of As(V) onto clay minerals.

- [1] Goswamee *et al.* (1998) *Appl Clay Sci* **13**, 21-34.
 [2] Sari & Tuzen (2008) *Sep Sci Technol* **43**, 3563-3581. [3] Liu *et al.* (2013) *Appl Clay Sci* **75-76**, 39-45. [4] Müller & Défago (2006) *J Geophys Res* **111**, G02017. [5] Huang *et al.* (2011) *Environ Sci Technol* **45**, 7701-7709.