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Abstract

Hexavalent Chromium Removal by a *Penicillium* sp. Fungal Strain Isolated from Environment

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Abstract: The present study reports a *Penicillium* sp. fungal strain that exhibits high reduction potential of Cr (VI). The effect of varying pH (4.0, 5.3, and 7.0, maintained with 100 mM/L citrate phosphate buffer.) on the rate of Cr (VI) removal, show a pH optimum of 5.5 (77% at 7 days, 28°C, and 100 rpm), while at pH of 4.0 and 6.2 were of 43% and 65%, respectively. Too, we analyzed the influence biomass in the removal capacity of Cr (VI). From the analyzed 72, 141, and 169 mg of dry weight the removal capacity was in the order of 35%, 49%, and 60%, respectively. In the presence of glucose, another inexpensive commercial carbon sources like unrefined sugar and brown sugar or glycerol, the decrease in Cr (VI) levels occurred at a similar rate, at 7 days of incubation, are of 52%, 96%, 100%, and 17%, respectively. Incubation of the biomass in the absence of a carbon source did not produce any noticeable change in the initial Cr (VI) concentration in the growth medium. These observations indicated that in culture of the fungus a carbon source is required to provide the reducing power needed to decrease Cr (VI) in the growth medium.

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