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**Reduction of selenite to selenium using bacteria isolated from polluted areas**

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In this work toxic selenite which is also highly soluble is transformed to selenium a less toxic element. Selenium is transformed through biotic transformation using different strains of bacterial like *Pseudomonas*, *Exiguobacterium sp.*, *Bacillus subtilis* and *licheniformis*. Selenium can exist in different forms like reduced form (Selenide, Se<sup>2-</sup>), water dissolved form (Selenite, So<sub>3</sub>-2/Selenate SeO<sub>4</sub>-2) and in the form of element (Seo). Different physical parameters were changed for optimizing conditions like different concentrations of Selenium (Se) varying from 200 to 400 and finally to 600 µg ml<sup>-1</sup>, temperature, pH, aeration along with incubation time for high reduction of selenite. It was found that selenite reduction rate was increased by increasing pH. It was found that at pH 3 around 15-33% Selenite was reduced and this trend kept on increasing to 28-90% at pH 9. For evaluating optimum temperature for Selenite reduction three levels of temperature were selected (32 °C, 37 °C and 42 °C) were selected. The selenite reduction was found at different temperatures and the results showed that for optimum reduction of selenite all strains possess varying preferences. The reduction in Selenite was also checked at different concentrations of selenite and it was found that maximum reduction of selenite was observed at lower concentration. This study concluded that in aerobic and anaerobic environment Se can be remediated by using selenite reducing bacteria.

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