PRECONCENTRATION AND SEPARATION OF COPPER (II) IONS USING SOLID PHASE EXTRACTION BY \textit{ANOXYBACILLUS FLAVITHERMUS} IMMOLIZED ON SILICA GEL

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The aim of this study is preconcentration and separation of copper ions using solid phase extraction method by \textit{Anoxybacillus flavithermus} immobilized on silica gel. Copper is an essential element not only for mammals but also for plants and lower forms of organisms. It has many biological effects not only as an essential element but also as a toxic element. Since its level is low in natural water and biological samples, separation and preconcentration steps are usually required for trace analysis [1].

The optimum conditions for sorption and desorption of copper (II) ions by \textit{Anoxybacillus flavithermus} bacterium immobilized on silica gel was investigated. Various parameters such as pH, amount of adsorbent, eluent type and volume, flow rate of solution and matrix effects have been studied. High sorption capacity was observed at pH 6. The best desorption solution were found 1 M HCl.

The synthesized silica sorbent was used successfully for the separation and preconcentration of copper (II) ions from natural waters. It is also found that it has a good chemical stability, high reusability and faster rate of equilibrium.

References