



## Sorption Study of Chromium(III) in Glycine Medium Using Poly[dibenzo-18 crown-6] and Column Chromatography

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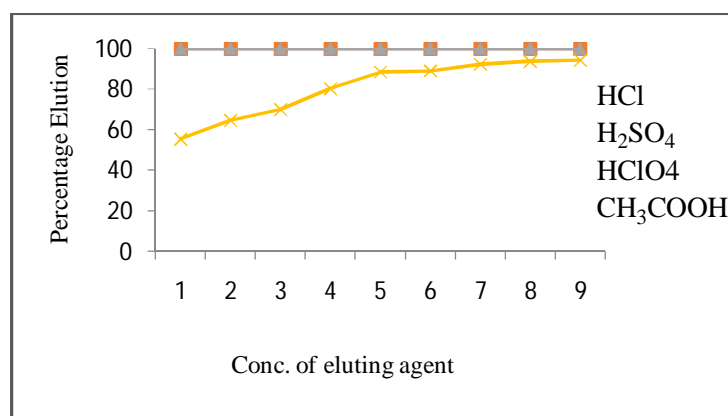
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### ABSTRACT

A simple chromatographic separation method has been developed for quantitative sorption of chromium(III) from an aqueous solution of  $1 \times 10^{-5}$  M Glycine using poly [dibenzo-18-crown-6] as stationary phase. The sorption of chromium(III) was quantitative  $1 \times 10^{-3}$  M to  $1 \times 10^{-6}$  M Glycine. The elution of chromium(III) was quantitative with 0.5–8.0 M HCl, 0.5–8M HClO<sub>4</sub> and 0.5–8.0 M H<sub>2</sub>SO<sub>4</sub>. The capacity of poly [dibenzo-18-crown-6] for chromium(III) was found to be  $1.54 \pm 0.01$  mmol/g of crown polymer. The effects of concentrations of glycine, chromium(III), foreign ions and eluents have been studied. Chromium(III) was separated from a number of cations in Multi component mixtures. The applicability of the proposed method was ascertained for the determination of chromium(III) in real samples. The reliability of method was checked by comparison of the results with those obtained using flame photometer. The method is very simple, rapid and selective with good reproducibility (approximately  $\pm 2\%$ ).

### Graphical Abstract



Elution of chromium(III) with various eluting agents

**Keywords:** Sorption, Separation, Chromium(III), Chromatography, poly [dibenzo-18-crown-6], Glycine.