**Recovery of cyclodextrin glucoamylase (CGTase) using immobilized metal chelating affinity chromatography**

**Abstract**

Immobilized metal affinity chromatography (IMAC) was chosen as a method of purification for the recovery of CGTase from *E. coli* homogenate. *E. coli* harbouring the *Bacillus* sp. G1 gene expressed extracellularly secreted CGTase into ampicillin supplied LB broth. Culture was pre-purified using SnakeSkin dialysis tubing (3.5 MWCO) with an enzyme activity of 147.80 U/mL. Three strategies (A, B and C) were employed for the purification of CGTase using column adsorption chromatography with Ni²⁺-Sepharose resin. Strategy A employed an elution buffer of 50 mM EDTA, pH 7, Strategy B used 0.1 M imidazole, pH 7 and Strategy C employed 45 mM imidazole pH 7 as the elution buffer. Strategy C was found to be most suitable yielding a total CGTase recovery of 87.04% from an initial activity of 147.80 U/mL.

**Keyword:** Affinity chromatography; Binding capacity; CGTase; New chromatographic adsorbent; Nickel-Sepharose chelating