

## Isolation of Lysozyme by Anti-LS Immunoglobulin in Yolk Bound Immunoaffinity Chromatography

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### ABSTRACT

Immunoglobulin in yolk (IgY) specific against lysozyme (LS) was bound to Sepharose 4 Fast Flow gel to prepare anti-LS IgY-immunoaffinity chromatographic column, to which diluted hen egg white and duck egg white were applied to determine and compare the changes in specific activity, recovery (%), and purification efficiency. It was observed that the specific activity of isolated LS from hen egg white was about 44830 units/mg protein with a recovery of 94 %, whereas that of isolated duck egg white was about 15460 units/mg protein with a recovery of only 12 %. By repeated application of various amounts (0-5.75 mg LS/mL) of LS in commercial LS product or diluted hen egg white to anti-LS IgY-Sepharose 4 Fast Flow immunoaffinity chromatography, it was found that the binding capacity ( $q_m$ ) of this anti-LS IgY-immunoaffinity gel for commercial LS was 0.16 mg/mL wet gel, higher than that (0.11 mg/mL wet gel) of the immunoaffinity gel for diluted hen egg white. In contrast, the dissociation constant ( $K_d$ ) of such immunoaffinity gel for LS in diluted hen egg white was  $3.72 \times 10^{-8}$  M, higher than that of  $3.19 \times 10^{-8}$  M for commercial LS. It suggests a relatively weaker immunoaffinity between diluted hen egg white LS and anti-LS IgY-immunoaffinity gel.