

High-yield purification of an organic solvent-tolerant lipase from *Pseudomonas* sp. strain S5

ABSTRACT

An organic solvent-tolerant S5 lipase was purified by affinity chromatography and anion exchange chromatography. The molecular mass of the lipase was estimated to be 60 kDa with 387 purification fold. The optimal temperature and pH were 45 °C and 9.0, respectively. The purified lipase was stable at 45 °C and pH 6–9. It exhibited the highest stability in the presence of various organic solvents such as n-dodecane, 1-pentanol, and toluene. Ca²⁺ and Mg²⁺ stimulated lipase activity, whereas EDTA had no effect on its activity. The S5 lipase exhibited the highest activity in the presence of palm oil as a natural oil and triolein as a synthetic triglyceride. It showed random positional specificity on the thin-layer chromatography.

Keyword: Organic solvent-tolerant lipase, *Pseudomonas* sp. strain S5, Purification, Characterization