

**An organic solvent-stable alkaline protease from *Pseudomonas aeruginosa* strain K:  
Enzyme purification and characterization**

ABSTRACT

The organic solvent-tolerant strain K protease was purified to homogeneity by ammonium sulphate precipitation and anion exchange chromatography with 124-fold increase in specific activity. The molecular mass of the purified enzyme as revealed by SDS-PAGE electrophoresis is 51,000 Da. The strain K protease was an alkaline metalloprotease with an optimum pH and temperature of 10 and 70 °C, respectively. The enzyme showed stability and activation in the presence of organic solvents with log Pa/w values equal or more than 4.0. After 14 days of incubation, the purified protease was activated 1.11, 1.82, 1.50, 1.75 and 1.80 times in 1-decanol, isooctane, decane, dodecane and hexadecane, respectively.

**Keyword:** *Pseudomonas*, Organic solvent-tolerant bacterium, Characterization, Organic solvent-stable enzyme, Alkaline metalloprotease