

**An organic solvent-tolerant protease from *Pseudomonas aeruginosa* strain K:  
Nutritional factors affecting protease production**

ABSTRACT

An organic solvent-tolerant bacterium producing an organic solvent-stable protease was isolated from soil and identified as *Pseudomonas aeruginosa* strain K. Nutritional requirements for optimized protease production by this strain were investigated. Maximum protease activity was achieved with sorbitol as the sole carbon source, followed by starch and lactose at pH 7.0 and 37 °C. Dextrose, sucrose and glycerol greatly reduced the protease production. The best organic nitrogen source was casamino acid. Tryptone, soytone and yeast extract supported protease production while corn steep liquor and beef extract inhibited the protease activity. Significant protease production was observed with sodium nitrate as a sole nitrogen source however, ammonium nitrate completely inhibit it. More than 62% drop in production occurred in the presence of amino acids. Addition of metal ions such as K<sup>+</sup>, Mg<sup>2+</sup> and Ca<sup>2+</sup> maximized the enzyme production.

**Keyword:** *Pseudomonas*, Organic solvent-tolerant, Lipase, Optimization