

ABSTRACT

Serine alkaline protease was produced from *Bacillus subtilis* GCUCM25. The maximum growth and enzyme production were obtained during 98 hours growth at the late logarithmic growth phase with conditions (35⁰C, 200 rpm, pH 10) using optimized media (peptone 1%, soy bean meal 2%, glucose 1%, Ammonium sulfate 0.1%, KH₂PO₄ 0.1%, and Na₂CO₃ 0.5%). Ion exchange chromatography (IEC) was used for the enzyme purification. The enzyme was purified to 141.1 fold over the crude with recovery of 39.1%. the apparent molecular weight of the purified enzyme was estimated to be 35kDa on SDS-PAGE. The pH and temperature optima of the enzyme were pH 11 and 55⁰C, repectively. The enzyme activity was strongly inhibited by phenyl methyl sulfonyl flouride (PMSF) and caused about 98% loss in the activity. The enzyme also showed some loss in the activity when incubated with metal cations. The apparent K_m and V_{max} values of alkaline protease obtained for BTEE were 2.1mM and 11.66 μmole/min/mg.