

Thermostable proteases

ABSTRACT

New proteases are constantly isolated. Proteases, mainly the alkaline proteases are widely used in the detergent formulation. Thermostable alkaline proteases are of great interest in the detergent industry because these enzymes are stable and able to retain its activities over broad range of pH and temperatures. Most thermostable alkaline proteases reported are from *Bacillus* spp. In this chapter, we introduce a new thermostable alkaline protease produced from *Bacillus stearothermophilus* strain F1. The protease production requirements by strain F1, the properties and characterization of this enzyme are discussed. The protease F1 gene was successfully cloned and expressed into *E. coli* XL1-Blue. The bacteriocin release protein(BRP)system was utilized; to release the recombinant F1 protease into the culture medium. The purified native and recombinant F1 protease showed a pH optimum of 9.0 and thermostabilities ranging from a half-life of 25 min at 90°C to a half-life of 4 h at 85°C. The optimum temperatures were 85°C and 80°C respectively.

Keywords: Thermostable proteases; Proteases