Creative Enzymes®

Native Geobacillus stearothermophilus Thermolysin

Cat. No. NATE-0704

Lot. No. (See product label)

Introduction

Description	Thermolysin is a thermostable neutral metalloproteinase enzyme produced by the Gram-positive bacteria Bacillus thermoproteolyticus. It requires one zinc ion for enzyme activity and four calcium ions for structural stability. Thermolysin specifically catalyzes the hydrolysis of peptide bonds containing hydrophobic amino acids. However thermolysin is also widely used for peptide bond formation through the reverse reaction of hydrolysis. Thermolysin is the most stable member of a family of metalloproteinases produced by various Bacillus species. These enzymes are also termed 'neutral' proteinases or thermolysin-like proteinases (TLPs).
Applications	A thermostable (thermophilic) extracellular metalloendopeptidase containing four calcium ions. Cofactors are zinc and calcium. Hydrolyzes protein bonds on the N-terminal side of hydrophobic amino acid residues. The pH optimum is 8.0 and the optimal temperature for activity is 70°C. Considerably stable from pH 5 to 9.5. Thermolysin has a low cleavage specificity, therefore, it produces a number of short fragments that are suitable for sequencing. Preferential cleavage: X-cleavage-Y-Z where X=any amino acid; Y=Leu, Phe, Ile, Val, Met, Ala and Z is any amino acid other than Pro. Cleavage N-terminal to Leu is preferred over cleavage of N-terminal to Phe which is preferred over the others. Often used to do limited proteolysis for peptide mapping and studies of protein structure and conformational changes.
Synonyms	thermolysin; Bacillus thermoproteolyticus neutral proteinase; thermoase; thermoase Y10; TLN; EC 3.4.24.27

Product Information

Source	Geobacillus stearothermophilus
Form	lyophilized powder containing calcium and sodium acetate buffer salts
EC Number	EC 3.4.24.27
CAS No.	9073-78-3
Activity	30-350 units/mg protein
Unit Definition	One unit will hydrolyze casein to produce color equivalent to 1.0 μmole (181 μg) of tyrosine per min at pH 7.5 at 37°C.

Storage and Shipping Information

Storage	−20°C