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Thermolysin, Bacillus thermoproteolyticus rokko

Cat. No.: HY-P1748

CAS No.: 9073-78-3

Target: Endogenous Metabolite

Pathway: Metabolic Enzyme/Protease

Storage: Please store the product under the recommended conditions in the Certificate of Analysis.

Thermolysin

SOLVENT & SOLUBILITY

In Vitro	H_2O : 1.96 mg/mL (adjust pH to 3 with HCl)

BIOLOGICAL ACTIVITY

Description	Thermolysin, Bacillus thermoproteolyticus rokko (EC 3.4.24.27) (TML) is a thermostable neutral metalloproteinase enzyme secreted by the Gram-positive bacteria Bacillus thermoproteolyticus. Thermolysin catalyzes the hydrolysis of peptide bonds containing hydrophobic residues[1]. Optimal pH: 8.0. Considerably stable from pH 5 to 9.5. Optimal temperature : 70 °C
In Vitro	Thermolysin (100 μg in 1 mL, 64°C for 4 h, in isolated starch granules) digestion results in the selective removal of a group of low-molecular-mass proteins ranging between 10 and 27 kD[2]. Thermolysin can be used for the hydrolysis of bovine liver sarcoplasmic proteins[3]. Product Information Molecular weight: 34.6 kDa (calculated) Optimum pH: 8 0, stable in the pH range of 5.0-9 5 Optimum temperature: 70□ Isoelectric point: 4.45 Instructions Soluble in acetate buffer, pH 7.5 (0.2 mg/mL), forming a clear to slightly turbid colorless solution. Alternatively, use pure water or buffer according to the specific experimental reference. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Thermolysin (50 mg/kg, p.o., once) lowers systolic blood pressure in SHR rats[4]. Thermolysin is not acutely toxic with an oral LD_{50} of more than 18000 mg/kg in rats and more than 24000 mg/kg in mice (Acute toxicity studies)[5]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Spontaneously hypertensive rats (SHR) rats[4]
Dosage:	50 mg/kg
Administration:	Oral administration (p.o.), once
Result:	Lowered systolic blood pressure in SHR rats, with maximal reduction by 22 mm in systolic blood pressure being observed 6 h after administration.

CUSTOMER VALIDATION

- J Mol Neurosci. 2024 Jun 21;74(3):60.

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REFERENCES

[1]. Bertusvan den Burg, et al. Chapter 111 - Thermolysin and Related Bacillus Metallopeptidases.

[2]. Mu-Forster C, et al. Surface localization of zein storage proteins in starch granules from maize endosperm. Proteolytic removal by thermolysin and in vitro cross-linking of granule-associated polypeptides. Plant Physiol. 1998 Apr;116(4):1563-71.

[3]. Di Bernardini R, et al. Isolation, purification and characterization of antioxidant peptidic fractions from a bovine liver sarcoplasmic protein thermolysin hydrolyzate. Peptides. 2011 Feb;32(2):388-400.

[4]. Fujita H, et al: a prodrug-type ACE-inhibitory peptide derived from fish protein. Immunopharmacology. 1999 Oct 15;44(1-2):123-7.

[5]. Ke Q, et al. Safety evaluation of a thermolysin enzyme produced from Geobacillus stearothermophilus. Food Chem Toxicol. 2013 Sep;59:541-8.

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