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.

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]. 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.

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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