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## Thermolysin, *Bacillus thermoproteolyticus* rokko

<b>Cat. No.:</b>	HY-P1748
<b>CAS No.:</b>	9073-78-3
<b>Target:</b>	Endogenous Metabolite
<b>Pathway:</b>	Metabolic Enzyme/Protease
<b>Storage:</b>	Please store the product under the recommended conditions in the Certificate of Analysis.

# Thermolysin

### SOLVENT & SOLUBILITY

<b>In Vitro</b>	H <sub>2</sub> O : 1.96 mg/mL (adjust pH to 3 with HCl)
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### 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<sup>[1]</sup>.

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<sup>[2]</sup>. Thermolysin can be used for the hydrolysis of bovine liver sarcoplasmic proteins<sup>[3]</sup>. 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<sup>[4]</sup>. Thermolysin is not acutely toxic with an oral LD<sub>50</sub> of more than 18000 mg/kg in rats and more than 24000 mg/kg in mice (Acute toxicity studies)<sup>[5]</sup>. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Spontaneously hypertensive rats (SHR) rats <sup>[4]</sup>
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.

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## REFERENCES

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- [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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**Caution: Product has not been fully validated for medical applications. For research use only.**

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