

Product Information | Certification of Analysis

I Product Information

CAS: EC 3.4.24.20

Lys-N | Mass Spec Grade

Lot No.

Part No.	Name	Size /pkg
HLS LYS001N	Lys-N, Mass Spec Grade	20 µg
HLS HAc001Zn	50 µM Zinc Acetic buffer	200 µL

Description: Lys-N is an innovative protease that specifically hydrolyzes peptide bonds at the N-terminal of lysine residues. This enzyme can be applied for post-translational modification (PTM) protein research, and it produces more b ions than y ions in the spectrometer. Combining the use of Lys-N with rTrypsin-N gives the best way for protein sequencing.

Physical Appearance: Lyophilized powder

Molecular Weight: 18.4 kDa

Resuspension Buffer (HLS HAc001Zn): 50 µM Zinc Acetic buffer or Zinc Sulfate buffer.

Storage Conditions: Store the lyophilized powder at -20°C. Store reconstituted enzyme at -80 °C for up to 30 days.

Shelf life: 24 months at -80 °C.

Stability: Maximally active in the pH range 7 - 9.

In-Solution Protein Digestion Protocol:

1. Resuspend 20 µg of Mass Spectrum Grade Lys-N in 40 µL resuspension buffer for maximum activity.
2. Add 50 mM ammonium bicarbonate or Tris-HCl (pH 8) to protein mixture (recommended).
3. Add 0.5 µg/µL Lys-N to reach a final enzyme to substrate ratio of 1:30 to digest the samples. Mix well and incubate at 37 °C for 4 hours.

I Quality Control

Purity: > 99.5% peak area analyzed by HPLC at 280 nm.

Specificity: < 5% nonspecific cleavage with *Escherichia Coli* digests (digestion at 37 °C for 4 hours), analyzed by LC-MS/MS.

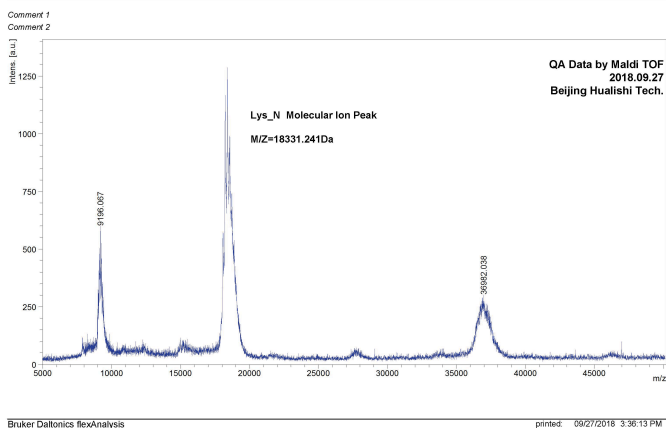
Activity: 394 U/mg.

Unit Definition: 1 unit of proteolytic activity towards azocasein is defined as the amount of enzyme required for half-maximal OD366 after a 30 min incubation at 37 °C, pH 10, A366, and light path=1cm.

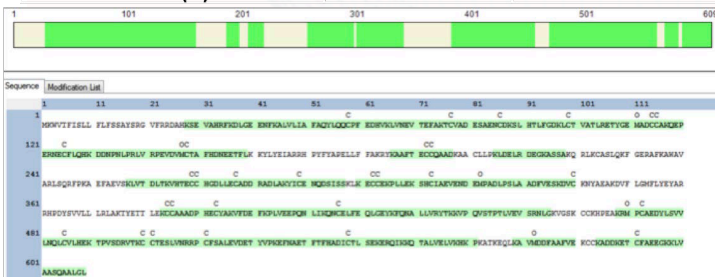
MALDI-TOF Analysis: No impurity peak found of Lys-N, analyzed by MALDI-TOF

LC-MS/MS Analysis: Human serum albumin (HSA) was dissolved, denatured at 37°C for 1 h, diluted at pH 8.0, and incubated with Lys-N for 4 hours. The digest was analyzed by LC-MS/MS. Experimental peptide results match the peptides generated in a theoretical digest of HSA by Lys-N.

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Sample E. coli	rLys-N_Hualishi	rLys-N_Marketing
Total of Proteins	878	904
peptide	3535	3557
specific cleavage peptide(K)	3041	3020
Ratio(%)	86.00	85.00



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