LysargiNase

Catalog Number: EMS0008

FOR RESEARCH USE ONLY
Not for use in diagnostic procedures.

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Synonym: Ulilysin

Product Description
LysargiNase mirrors trypsin for protein C-terminal and methylation-site identification.
LysargiNase is a metalloproteinase found in the thermophilic archaea *Methanosarcina acetivorans*. It specifically cleaves before lysine and arginine residues in proteins. This cleavage results in peptides with molecular weights similar to tryptic peptides, but with N-terminal lysine or arginine residues that can be fragmented with b ion-dominated spectra. This can improve protein C-terminal peptide identification and several arginine rich phosphosite assignments. Unlike with trypsin, LysargiNase cleavage also occurs at methylated lysine and arginine, allowing detection of these epigenetic modifications.

29 kDa
The enzyme requires calcium for activity.
Recommended digestion buffer: 50 mM HEPES, 5 mM $CaCl_2$, pH 7.5

Components
Each vial contains 20 µg LysargiNase, prepared by recombinant expression in *E. coli*, and lyophilized from buffer. Upon reconstitution in 20 µL water, the enzyme is in 50 mM HEPES, 5 mM $CaCl_2$, pH 7.5.

Optional Reagents and Equipment Not Provided.

Precautions and Disclaimer
This product is for R&D use only, not for drug, household or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions
Dissolve the contents of the vial (20 µg) in 20 µL water.

Storage/Stability
Store the lyophilized product at -20°C for up to 2 years. After reconstitution, the unused material can be stored in the freezer in aliquots. Avoid repeated freeze thaw cycles.

Sample preparation and handling
Protein samples may be reduced and alkylated prior to digestion.
LysargiNase is reported to be active in 5 mM TCEP, 5% methanol, 5% acetonitrile, 0.8M urea, 0.1% RapiGest, 1% deoxycholate, 0.2% SDS and 1% NP-40.
The enzyme is inhibited by 1, 10-phenanthroline, EDTA and other chelating agents.
Optimally active at pH 6 – 9 and at temperatures up to 55°C.

Procedure
1. Reduce and alkylate sample as desired.
2. Buffer exchange or dilute sample into 50 mM HEPES, 5 mM $CaCl_2$ pH 7.5 as needed.
3. Add enzyme at a 1:20 to 1:100 ratio (w/w).
4. Incubate at 37°C for 16 hours (overnight).

References

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