Store at -20°C

#33036

PTMScan® Wild Type Alpha-Lytic Protease (WaLP)

Cell Signaling TECHNOLOGY®

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New 04/19

For Research Use Only. Not For Use In Diagnostic Procedures.

Description: Wild type alpha-lytic protease (WaLP) is a serine endopeptidase that cleaves at the carboxyl terminal side of alanine, serine, threonine, and valine amino acid residues.

Background: Wild type alpha-lytic protease (WaLP) was first isolated from myxobacterium Lysobacter enzymogenes (1). It is a protease that cleaves after A, S, T, and V residues making it a useful alternative protease for proteomics use. The pro-form of the enzyme is expressed as a 397 amino acid protein which is cleaved to a 198 amino acid mature protein. Numerous studies have been published about the mature form, active site, and catalytic mechanism (2, 3, 4). Based on crystal structure studies there seems to be a strong relation to other pancreatic serine proteases (5). The alternative cleavage specificity of WaLP is especially useful for looking at Proteomics of SUMO modifications as it cleaves the SUMO protein leaving a di-glycine motif that can then be detected using the proprietary SUMO Branch Motif remnant (K-ε-GG) antibody (6).

Background References:

(1) Whitaker, DR. The alpha-Lytic Protease. Methods in Enzymology, 19, 599-613

(2) Sohl, JL, et al., , IntramolecularChaperones and Protein Folding, Landes Company, Austin TX (1995) ISBN 978-1570592928 pp. 61-83

(3) Bauer, C.A. et al. (1981) *Eur J Biochem* 120, 289-94.

(4) Bachovchin, W.W. et al. (1981) *Proc Natl Acad Sci U S A* 78, 7323-6.

(5) Olson, M.O. et al. (1970) *Nature* 228, 438-42.

(6) Meyer, J.G. et al. (2014) *Mol Cell Proteomics* 13, 823-35.

Source/Purification: WaLP was produced recombinantly in E. coli, purified and is provided in 10 mM sodium acetate pH 5.0.

Purity: Purity is >95% by SDS-PAGE.

Directions for Use: PTMScan® Wild Type Alpha-Lytic Protease (WALP) is provided for use with Cell Signaling Technology's patented PTMScan® protocol in the initial protein digestion step. Samples in urea lysis buffer need to be diluted to 2M or less urea prior to addition of WaLP. Dilute the 0.4 mg/ml stock 1:100 for final digest and incubate overnight at 37°C. Aliquot and store at -20ºC. Consult the specific PTMScan® kit and protocol for more details on the appropriate protease before digesting any protein samples.

Storage: This product is stable for 12 months when stored at -20°C. Aliquot to avoid multiple freeze/thaw cycles.

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Applications: W—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide **Species Cross-Reactivity: H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.