

Product Information

Achromopeptidase from bacteria

Free of DNA contaminants, suitable for Microbiome research

SAE0196

Product Description

Achromopeptidase is a lysyl endopeptidase, originally isolated from a soil bacterium discovered by Masaki and co-workers,¹ with a broad range of bacteriolytic activity. Achromopeptidase lyses the cell walls of many Gram-positive organisms that are resistant to lysozyme such as *Streptococcus faecalis*² and *Micrococcus luteus*,³ as well as a number of Gram-negative organisms.

Achromopeptidase has been shown to contain two different bacteriolytic proteases, alp³ (α-lytic protease) and blp⁴ (β-lytic protease):

- Alp cleaves both the junction bond between the polysaccharide and the peptide moiety in addition to the D-Ala-Gly and Gly-Gly peptide bonds in peptidoglycan.³
- Blp has particular specificity for cleavage of Gly-X bonds.⁴

The study of microbial communities has been revolutionized in recent years by the widespread adoption of culture independent analytical techniques such as 16S rRNA gene sequencing and metagenomics. Since DNA contamination during sample preparation is a major problem of these sequence-based approaches,⁵ DNA extraction reagents free of DNA contaminants are essential.

This product undergoes strict quality control testing to ensure the absence of detectable levels of contaminating microbial DNA, using 35 cycles of PCR amplification of 16S and 18S rDNA using universal primer sets.

Product

Optimum pH: pH 8.5 – 9

Specific Activity: ≥ 1000 units/mg solid

Unit Definition: One unit will produce a change in A₆₀₀ of 0.001 per minute per mL at pH 8.0 at 37 °C, using a suspension of *Micrococcus lysodeikticus* as substrate (1 cm light path).

Precautions and Disclaimer

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.

Storage/Stability

The product retains activity for at least 2 years when stored lyophilized at –20 °C.

Preparation Instructions

Solutions of this product can be prepared in DNA-free water (Cat. No. MBD0025). Aliquot the protein solution and store the solution aliquots at –20 °C. Avoid freeze-thaw cycles.

References

1. Masaki, T. *et al.*, *Biochim. Biophys. Acta*, **660(1)**, 44-50 (1981).
2. Ezaki, T., and Suzuki, S., *J. Clin. Microbiol.*, **16(5)**, 844-846 (1982).
3. Li, S. *et al.*, *J. Biochem.*, **122(4)**, 772-778 (1997).
4. Li, S. *et al.*, *J. Biochem.*, **124(2)**, 332-339 (1998).
5. Motley, S.T. *et al.*, *BMC Genomics*, **15(1)**, 443 (2014).

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