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Product Information

Mutanolysin
from *Streptomyces globisporus* ATCC 21553
Suitable for manufacturing of diagnostic kits and reagents

Catalog Number **SRE0007**
Storage Temperature –20 °C

CAS RN 55466-22-2

Product Description

The Gram-positive bacterium *Streptomyces globisporus* ATCC 21553 (also known as the B-1829 strain of *Streptomyces*) produces three extracellular bacteriolytic enzymes, the lytic enzymes *N*-acetylmuramidase M1 and *N*-acetylmuramidase M2, and the proteolytic enzyme *N*-Acetylmuramyl-L-alanine amidase.[1-5] Collectively, these enzymes are referred to as mutanolysin.[2] Particular properties of the three enzymes include the following:

N-acetylmuramidase M1:
- Activity: β-1,4-*N*,6-*O*-diacetylmuramidase[1]
- Molecular mass: ~20 kDa,[3,4] ~27 kDa[6]

N-acetylmuramidase M2:
- Activity: β-1,4-*N*-acetylmuramidase[1]
- Molecular mass: ~11 kDa[3,4]

N-Acetylmuramyl-L-alanine amidase:[5]
- Activity: cleavage at the lactylamide bond of bacterial peptidoglycans
- Molecular mass: ~18.5 kDa
- Isoelectric point: 6.6

The crystal structure of the *N*-acetylmuramidase M1 constituent of mutanolysin has been reported.[7]

Mutanolysin cleaves the linkage of the bacterial cell wall polymer peptidoglycan-polysaccharide. For isolation of nucleic acids, mutanolysin has been used in the lysis of Gram-positive bacteria (e.g. *Listeria*, *Lactobacillus*, *Lactococcus*, *Streptococcus*),[8] and also generally on bacteria that are difficult to lyse with lysozyme.[9]

Precautions and Disclaimer

For further (non-TSCA only use in US) manufacturing uses only. Not intended for direct use in humans or animals. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Solutions of mutanolysin can be prepared in 50 mM TES, pH 7.0, with 1 mM $MgCl_2$, at the equivalent of 1 mg/mL. Mutanolysin also dissolves in water[10] or TE buffer.[11]

Storage/Stability

Stock solutions of mutanolysin can be stored at –20 °C in frozen aliquots, such as at concentrations of 1,000 units/mL in water,[10] or at 3,000 units/mL in TE buffer.[11]

References

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