Product Information

Mutanolysin from *Streptomyces globisporus* ATCC 21553

Lyophilized powder, ≥4000 units/mg protein (Biuret), Chromatographically purified

M9901

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:

1. *N*-acetylmuramidase M1
   - Activity: β-1,4-*N*,6-*O*-diacetylmuramidase[1]
   - Molecular mass: ~20 kDa,[3,4] ~27 kDa[6]
2. *N*-acetylmuramidase M2
   - Activity: β-1,4-*N*-acetylmuramidase[1]
   - Molecular mass: ~11 kDa[3,4]
3. *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]

For isolation of nucleic acids, mutanolysin has been used in the lysis of Gram-positive bacteria (such as *Listeria*, *Lactobacillus*, *Lactococcus*),[8] and also generally on bacteria that are difficult to lyse with lysozyme.[9]

Several theses[10,11] and dissertations[12-23] have cited use of product M9901 in their protocols.

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.

Preparation Instructions

Solutions of mutanolysin can be prepared in 50 mM TES buffer, pH 7.0, with 1 mM $MgCl_2$, at the equivalent of 1 mg/mL. Mutanolysin can also be dissolved in water[24] or TE buffer.[25]

Storage/Stability

Mutanolysin stock solutions can be stored at –20 °C in frozen aliquots, at such concentrations as:

- 1,000 units/mL in water[24]
- 3,000 units/mL in TE buffer[25]

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