

Mutanolysin – Lyophilisate

Enzyme for digesting the cell wall of Gram-positive bacteria especially resistant to lysis

Product Code: 402-100, 10.000U; 402-100L, 5 x 10.000 U

Description:

Mutanolysin (EC 3.2.1.17) (N-acetylmuramidase) is a muralytic enzyme that cleaves the β -N-acetylmuramyl-(1 \rightarrow 4)-N-acetylglucosamine linkage of the bacterial cell wall polymer peptidoglycan-polysaccharide. Its carboxy terminal moieties are involved in the recognition and binding of unique cell wall structures abundant in many gram-positive bacteria. Recombinant Mutanolysin effectively lyses particularly problematic bacteria like:

Streptococcus, Lactobacillus, Lactococcus, Listeria.

Recombinant Mutanolysin and [lysozyme](#) activity is synergistic. Using Mutanolysin and lysozyme mixture leads to increased yield of bacteria lysis.

Application:

- Mild conditions formation of spheroplasts of gram-positive bacteria
- Enzymatic cell lysis in DNA and RNA isolation process

Effective lysis of gram-positive bacteria in environmental studies and DNA-based microbial detection.

Unit definition:

One unit will produce a ΔA_{600} nm of 0.01 per minute at 50 mM MES pH 6.0, 1 mM MgCl₂ at 37 °C in a 1 ml volume using suspension of Streptococcus faecalis cell wall as substrate.

Activity: > 10.000 U/mg

Concentration: Powder (to obtain concentration 10 U/ μ l dissolve the whole content of vial of Mutanolysin lyophilizate in 1000 μ l of Mutanolysin storage buffer).

Storage buffer

20 mM MES pH 6.2, 50 mM NaCl, 50% glycerol (v/v)

Shipping: shipped on blue ice

Storage Conditions: store at -20°C

Shelf Life: at least 18 months

Note:

- Enzyme is safe, being a product originating from organism recognized by U.S Food and Drug Administration as GRAS (Generally Recognized as Safe).

- Great purity in contrast to native product

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Protocol:

Recommended protocol (for cell wall digestion):

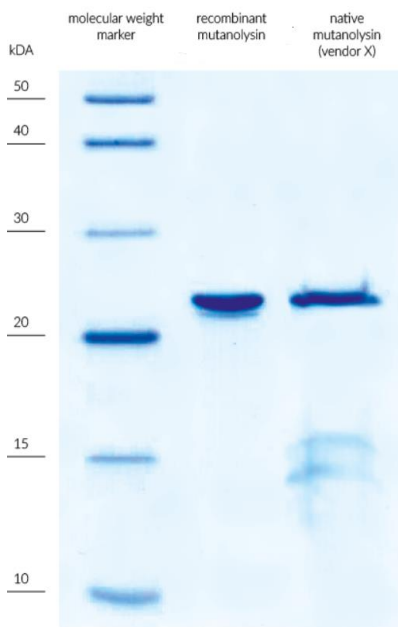
1. Transfer 0.2-1.0 ml of overnight bacterial culture to 1.5 ml Eppendorf tube and centrifuge (i.e. 2500 x g, 5 min).
2. Discard supernatant and suspend the bacterial pellet in 100 µl of the digestion buffer (suggested buffer: 50 mM MES pH 6.0, 1 mM MgCl₂).

!! Different digestion buffers may also be tested !!

Note: The Mutanolysin activity may strongly differ among various strains of Gram-positive bacteria tested.

3. Add 50 U of Mutanolysin. Mix gently and incubate for 20 min at 50 °C.

SDS-PAGE analysis of mutanolysin



15% SDS-PAGE, coomassie brilliant blue R-250 stained

Ordering information:

Cat.-no	Description	Amount
402-100	Mutanolysin – Lyophilisate	10000 U
405-100L	Mutanolysin – Lyophilisate	50000 U

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