

## ***Manual***

# **Mutanolysin (lyophilisate)**

Enzyme for digesting the cell wall of Gram-positive bacteria especially resistant to lysis.  
Specific activity: >10 000 U/mg.

<b>catalog #</b>	<b>size</b>
1017-10L	10 000 U
1017-50L	5 x 10 000 U

For research use only.

### **Guarantee**

A&A Biotechnology provides guarantee on this product.

The company does not guarantee correct performance of this kit in the event of:

- not adhering to the supplied protocol
- use of not recommended equipment or materials
- use of other reagents than recommended or which are not a component of the product
- use of expired or improperly stored product or its components

# Description

**Mutanolysin** (EC 3.2.1.17) (N-acetylo-muramidase) is a recombinant enzyme obtained in the bacterial expression system.

Enzyme cleaves  $\beta$ -N-acetylmuramyl-(1-4)-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.

Mutanolysin effectively lyses particularly problematic bacteria, including but not limited to *Streptococcus*, *Enterococcus*, *Lactobacillus*, *Lactococcus* and *Listeria*.

Mutanolysin and lysozyme activity is synergistic. Using mutanolysin and lysozyme mixture leads to increased yield of bacteria lysis.

# Application

- effective lysis of gram-positive bacteria in environmental studies and DNA-based microbial detection
- enzymatic cell lysis in DNA/RNA isolation process
- mild conditions formations of spheroplasts of gram-positive bacteria

# Contents

	1017-10L	1017-50L	storage
<b>mutanolysin lyophilisate</b>	10 000 U	5 x 10 000 U	-20 °C
<b>mutanolysin storage buffer:</b> 20 mM MES, pH 6,2, 50 mM NaCl, 50% glycerol (v/v)	1 ml	5 x 1 ml	-20 °C

# Unit definition

1 U of mutanolysin will produce  $\Delta A_{600}=0.01$  of a suspension of *S.faecalis* cells in 1 min at 50 mM MES, pH 6,0, 1 mM  $MgCl_2$  at 37 °C in 1 ml of reaction mixture.

## Protocol

To obtain mutanolysin solution with concentration 10 U/ $\mu$ l dissolve whole content of vial of mutanolysin lyophilisate in 1 ml of mutanolysin storage buffer.

Store prepared solution at -20 °C.

1. Transfer 0.2-1 ml of overnight bacterial culture to 1.5 ml tube and centrifuge (i.e. 2500 x g, 5 min).
2. Discard supernatant and suspend the bacterial pellet in 1 ml of digestion buffer (suggested buffer: 50 mM MES, pH 6,0, 1 mM MgCl<sub>2</sub>).

Different digestion buffers may also be tested.

Note: Mutanolysin activity may strongly depend on the strains of gram-positive bacteria tested.

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

For best isolation results we recommend Genomic Mini AX Bacteria+ (# 060-60M), Genomic Mini AX Bacteria+ Spin (# 060-100MS).



**A&A BIOTECHNOLOGY**  
innovating life science

A&A Biotechnology, ul. Strzelca 40, 80-299 Gdańsk, Poland  
phone: +48 883 323 761,+48 600 776 268  
info@aabiotech.com, www.aabiotech.com

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