



Product Information

Nuclease micrococcal from *Staphylococcus aureus*

Product Number **N 3755**
Storage Temperature -0 °C

Product Description

Enzyme Commission (EC) Number: 3.1.31.1
CAS Number: 9013-53-0
Molecular Weight: 16,807 (based on sequence)¹

This enzyme has an absolute need for Ca²⁺ for activity. The pH optimum varies according to Ca²⁺ concentration.² The optimal pH for RNase and DNase activities is between 9 and 10, depending on the Ca²⁺ concentration. At higher pH values, less Ca²⁺ is required. The inhibitory effect of high Ca²⁺ concentrations is more pronounced at higher pH values.³ Mg²⁺ cannot replace Ca²⁺ in activating the enzyme.⁴

This enzyme will cleave DNA and RNA to leave 3'-nucleotides.

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

Reconstitute to a concentration of 1 unit per 5 µl with water.

Storage/Stability

After reconstitution with water, aliquots may be frozen by immersion in a dry ice/alcohol bath and then stored at -20 °C. It is suggested that stability is improved if the product is dissolved in 0.1% BSA to minimize adsorption to container walls. Aliquots may also be lyophilized.

Procedure

Protocol for nuclease treatment:

1. Transfer 500 µl of reconstituted lysate to a separate vial.
2. Add 5 µl of micrococcal nuclease solution (1 unit per 5 µl).
3. Start the reaction by adding 5 µl of 0.1 M CaCl₂ solution.
4. Mix gently and constantly for 2 minutes in a 28 °C water bath.
5. At the end of 2 minutes, add 10 µl of 0.1 M EGTA to stop the reaction and place the vial in an ice bath. Wait two minutes. Sample is ready to use.

References

1. Taniuchi, H., et al., The Amino Acid Sequence of an Extracellular Nuclease of *Staphylococcus Aureus*. 3. Complete Amino Acid Sequence. J. Biol. Chem., **242(20)**, 4752-4758 (1967).
2. Heins, J. N., et al., Characterization of a Nuclease Produced by *Staphylococcus Aureus*. J. Biol. Chem., **242(5)**, 1016-1020 (1967).
3. Cuatrecasas, P., et al., Catalytic Properties and Specificity of the Extracellular Nuclease of *Staphylococcus Aureus*. J. Biol. Chem., **242(7)**, 1541-1547 (1967).
4. Reddi, K. K., Micrococcal Nuclease. Meth. Enzymol., **12-A**, 257-262 (1967).

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