

PRODUCT INFORMATION

Micrococcal Nuclease

Pub. No. MAN0011996

Rev. Date 15.July.2016 (Rev. B.00)

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Lot: _ Expiry Date: _

Components	#EN0181
Micrococcal Nuclease, 300 U/ μ L	8000 U

Store at -20 °C

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Description

Micrococcal Nuclease (S7 Nuclease) is a relatively nonspecific endo-exonuclease that digests single-stranded and double-stranded nucleic acids, but is more active on single-stranded substrates. Cleavage of DNA or RNA occurs preferentially at AT or AU-rich regions yielding mononucleotides and oligonucleotides with terminal 3'-phosphates.

The enzyme activity is strictly dependent on Ca^{2+} .

Applications

- Hydrolysis of nucleic acids in crude cell-free extracts (1).
- Sequencing of RNA (2).
- Studies of chromatin structure (3).
- A model for protein folding and for structure-function studies (4, 5).

Source

E.coli cells with a cloned *nuc* gene encoding *Staphylococcus aureus* extracellular nuclease (micrococcal nuclease).

Molecular Weight

16.9 kDa monomer.

Definition of Activity Unit

One unit of the enzyme releases 1.0 A₂₆₀ unit of acid-soluble products in 30 min at 37 °C.

Enzyme activity is assayed in the following mixture: 100 mM sodium glycine (pH 8.6), 10 mM CaCl₂ and 4.5 mM calf thymus DNA.

Storage Buffer

The enzyme is supplied in: 20 mM Tris-HCl (pH 7.6), 50 mM NaCl and 50% (v/v) glycerol.

Inhibition and Inactivation

- Inhibitors: metal chelators, deoxythymidine 3' 5'-diphosphate.
- Inactivated by the addition of EGTA or EDTA.

CERTIFICATE OF ANALYSIS

Physical Purity

Micrococcal Nuclease is >95% pure as determined by SDS-polyacrylamide gel electrophoresis after staining with Coomassie Brilliant Blue R-250.

Quality authorized by:



Jurgita Zilinskiene

References

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2. Krupp, G., Gross, J.H., Rapid RNA sequencing: nucleases from *Staphylococcus aureus* and *Neurospora crassa* discriminate between uridine and cytidine, *Nucleic Acids Res.*, 6, 3481-3490, 1979.
3. Telford, D.J., Stewart, B.W., Micrococcal nuclease: its specificity and use for chromatin analysis, *Int. J. Biochem.*, 21, 127-137, 1989.
4. Tucker, P.W. et al., Staphylococcal nuclease reviewed: a prototypic study in contemporary enzymology. IV. The nuclease as a model for protein folding, *Molec. Cell. Biochem.*, 23, 131-140, 1979.
5. Torchia, D.A., et al., Staphylococcal nuclease: sequential assignments and solution structure, *Biochemistry*, 27, 5509-5524, 1989.

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