



Recombinant SERMA Nuclease

Purity >90%

Catalog No. SG3040-01

Size: 25000 units

Description

SERMA is a genetically engineered endonuclease from *Serratia marcescens*. The enzyme is produced and purified from E.Coli. This promiscuous endonuclease attacks and degrades all forms of DNA and RNA (single stranded, double stranded, linear and circular) and is effective over a wide range of operating conditions. The enzyme completely digests nucleic acids to 5'-monophosphate terminated oligonucleotides 2 - 5 bases in length. SERMA is available from SG with purity > 90%. It possesses exceptionally high specific activities and is supplied free from measurable protease activities and viral contaminants. SERMA is available at 250 U/ μ l. SERMA is ideal for a wide variety of applications where complete digestion of nucleic acids is desirable.

Molecular Weight

26.9 kDa

Unit Definition

One unit of SERMA Nuclease is defined as the amount of enzyme that causes a ΔA_{260} of 1.0 in 30 min, which corresponds to complete digestion of 37 μ g of DNA.

Storage

SERMA Nuclease is supplied in 50% glycerol containing 50mM Tris-HCl pH 8.0, 30mM NaCl and 2mM $MgCl_2$. The enzyme preparation is stable for 2 years when stored at $-20^\circ C$.

SDS-Polyacrylamide Gel Analysis

When 2 μ g of SERMA Nuclease are run on an SDS-polyacrylamide gel, $\geq 90\%$ purity must be seen.

Activity Assay Conditions

The SERMA Nuclease assay is performed in 50mM Tris, 1mM $MgCl_2$, 0.1mg/ml BSA, pH8.0 with different dose of enzyme and 15 μ g DNA substrate at $37^\circ C$ for 5min and 15min.

Applications

- 1) Viscosity reduction in protein extracts
- 2) Sample preparation for 2D gel electrophoresis
- 3) Removal of nucleic acid contaminants for recombinant protein preparations

Notes

- 1) Viscosity reduction in E. coli lysates
1L E. coli BL21(DE3) culture were resuspended in 50mM PB, 300mM NaCl, pH8.0 and sonicated. 2500 U SERMA was added and incubated at 25°C for 30 minutes to obtain "aqueous".
- 2) SERMA can be diluted for ease of handling small quantities with 50mM Tris-HCl, 30mM NaCl, 2mM MgCl₂ , pH 8.0. Diluted samples can be stored at 4°C for several days without loss of activity.
- 3) Although SERMA requires Mg²⁺ for activation, it does not appear to require additional Mg²⁺ under many conditions.
- 4) SERMA treatment is not generally recommended for purification of proteins that must be nuclease free. However, depending on the processing methods, SERMA may be removed during purification. Residual nuclease activity can be checked by incubation of the purified protein with RNA or DNA markers followed by gel analysis.