HS-Nuclease, recombinant Endonuclease

Product Information Sheet
 # GE-NUC10700

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SUMMARY

shipped at -20 °C; store at -20 °C

200 µl HS-Nuclease (250 units/µl)
in 50 mM Tris-HCl,
50 mM NaCl, 5 mM MgCl2, 50% Glycerol,
pH 8.0

For research use only

Description

HS-Nuclease is a recombinant form of *Serratia marcescens* extracellular endonuclease (encoded by the same gene as Bezonase®) produced in *E. coli* using a proprietary process. This nonspecific endonuclease hydrolyzes both single- and double-stranded nucleic acids (DNA and RNA) to 5'-phosphorylated oligonucleotides of 1 - 4 bases in length. HS-Nuclease is a highly purified homodimer of 27 kDa subunits that has exceptional high specific activity and is free of protease activity. HS-Nuclease is ideal to digest nucleic acids and to reduce viscosity during protein purification and sample preparation.

Purity

HS-Nuclease is purified through a proprietary process that achieves purity of >99% as shown in Figure 1.

Total endotoxin level is <0.25 EU/1,000 units of HS-Nuclease as determined by the LAL Gel-Clot Assay.

HS-Nuclease shows no detectable protease activity.

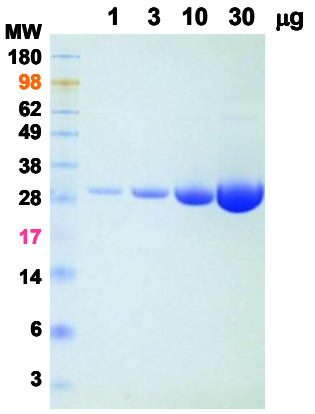

Figure 1

Activity

250 units/µl

Unit definition

One unit of HS-Nuclease converts 1 OD_{260} of salmon sperm DNA into acid-soluble nucleotides in 30 minutes at 37 °C in a reaction buffer of 50 mM Tris-HCl, pH 8.0 and 1 mM MgCl2.
This corresponds to complete digestion of 50 µg of salmon sperm DNA into oligonucleotides.
HS-Nuclease has a specific activity of >1.3 x 10^6 units/mg.
This is equivalent to >3 x 10^6 Kunitz units/mg,
over 100-fold specific activity of most highly purified bovine DNase I (~25,000 Kunitz units/mg).

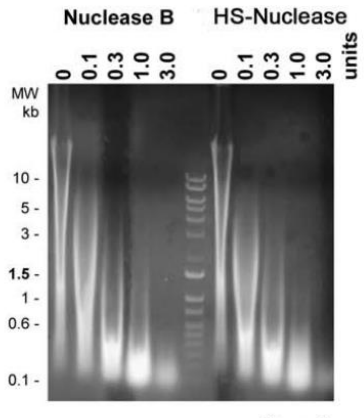

Figure 2

Figure 2.
50 µg of salmon sperm DNA was incubated with the indicated units of HS-Nuclease and another brand of nuclease at 37 °C for 30 min in a buffer of 50 mM Tris-HCl, pH 8.0 and 1 mM $MgCl_2$. DNA digestion was monitored by agarose gel.

Applications

HS-Nuclease can be used to reduce viscosity of cell lysates and remove nucleic acid contaminations from sample preparations. It reduces smearing when used with 10% SDS to make whole cell lysate for SDS-PAGE. It may reduce or prevent clumping of concentrated cells and frozen cells following thawing. HS-Nuclease also replaces crude DNase I in many applications.

To reduce viscosity of cell lysates, 10 - 1000 units of HS-Nuclease can be used per gram of cell paste. The efficiency of viscosity reduction may vary with buffers, cell types, and cell lysis methods used. Due to its high specificity, the total amount of HS-Nuclease added is less than 1 µg/ml of lysate and will not interfere with any downstream processes not involving nucleic acids.

Note: HS-Nuclease is stable in storage buffer at 37 °C for at least three weeks without any loss of activity.

Order Information, Shipping and Storage

Order#	Product	Quantity
GE-NUC10700-01	HS-Nuclease, recombinant Endonuclease (encoded by the same gene as Benzonase®)	50‘000 Units
GE-NUC10700-02	HS-Nuclease, recombinant Endonuclease (encoded by the same gene as Benzonase®)	2 x 50‘000 Units
shipped at -20 °C; store at -20 °C		