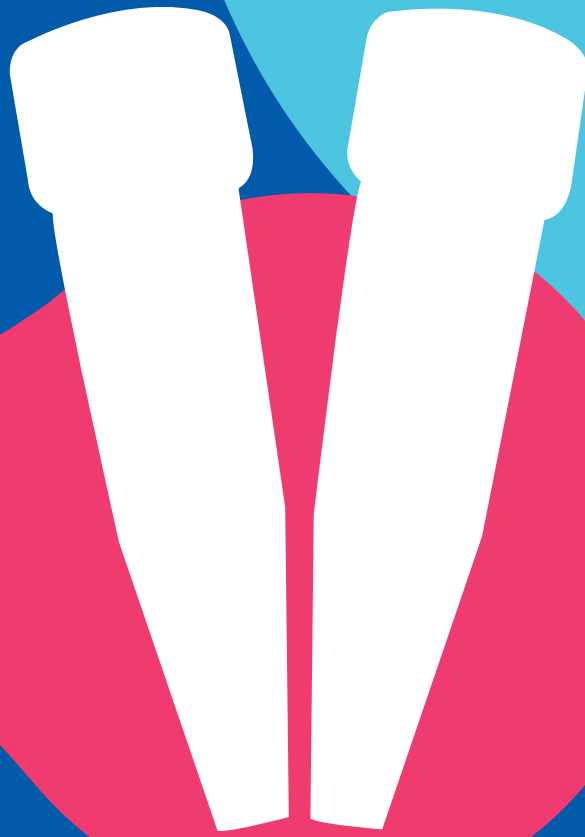


Intelli Nuclease

Product Booklet 2022 Ver.00



Introduction

Originally derived from *Serratia marcescens*, Intelli nuclease is a versatile endonuclease expressed by recombinant *Escherichia coli*. Intelli nuclease is composed of two identical subunits (about 27.5KDa). As a non-specific nuclease, it can completely and efficiently degrade all forms of DNA and RNA (single stranded, double stranded, linear, circular, supercoiled, etc.) into oligonucleotides with a length of 2-5 bases.

Application scope

- Remove DNA/RNA during protein purification, reduce viscosity and simplify the clarification process, which can effectively improve the purification yield.
- Sample preparation for ELISA, column chromatography, two-dimensional electrophoresis and blot analysis with improved resolution and recovery.
- Eliminate host cell DNA/RNA residues during vaccine and protein drug manufacturing to improve product safety.
- Prevent cell aggregation during cell culture, e.g. PBMC, chimeric cell mixture preparation.

Reaction conditions

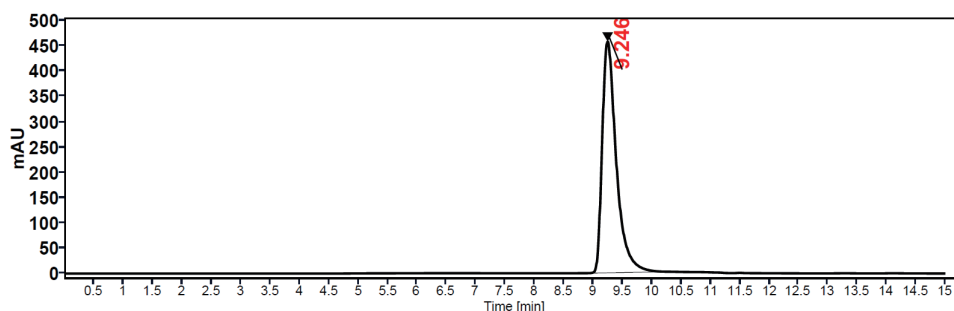
- Optimal reaction conditions: pH 6-10 (pH 8-9 optimal), 1-2 mM Mg^{2+} , 0-150 mM NaCl, 0-42°C (37°C optimal),
- In the case of monovalent cations >300 mM, PO_4^{3-} >100 mM, $(NH_4)_2SO_4$ >100 mM, the enzyme activity will be significantly inhibited (decrease rate >50%),
- Intelli nuclease is compatible with PMSF (1 mM), EDTA (1 mM) reducing agents (e.g. DTT), and detergents (e.g. Triton).

Production standard

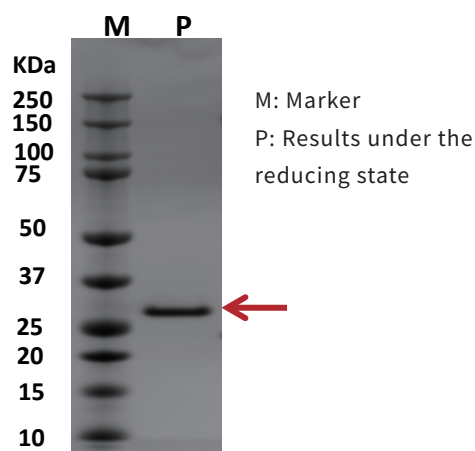
Product name	Nuclease, <i>Serratia marcescens</i> extracellular endonuclease
CAS No.	9025-65-4
Form	Active substance; homodimer
Appearance	Colorless, no particles
Expression system	Non-pathogenic <i>Escherichia coli</i> , BL21 (DE3)
Source	Recombinant <i>Escherichia coli</i> optimized by nuclease gene
Formula	50 mM Tris-HCl, 100 mM NaCl, 5% glycerol, 2 mM Mg^{2+} , pH8.0
Storage condition	-70 °C, avoid repeated freeze/thaw cycles
Endotoxin level	< 0.5 EU/mg
SEC-HPLC (%)	≥99% (Table 1)
SDS-PAGE (%)	≥99% (Table 2)
Molecular weight	27501.51 Da (Table 3)
Theoretical molecular weight	27500.81 Da
Enzyme activity	>250 U/μL (Table 4)

Test data

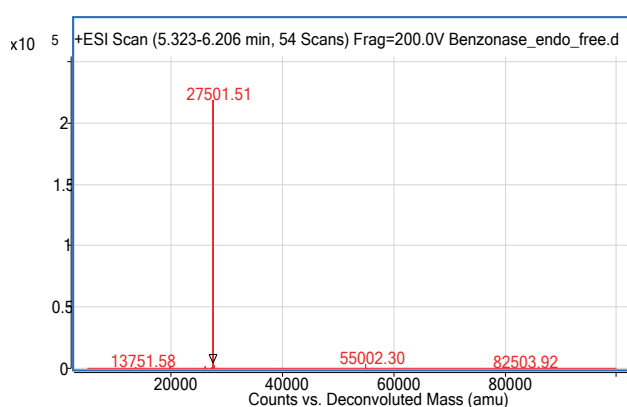
© Table 1 SEC-HPLC results of Intelli nuclease



© Table 2 SDS-PAGE results of Intelli nuclease



© Table 3 Molecular weight results of Intelli nuclease



© Table 4 Enzyme activity test results of Intelli nuclease

Unit definition: One unit of Intelli nucleases is maintained at 37°C and pH 8.0 for 30 minutes to digest the DNA in salmon sperm into acid-soluble oligonucleotides, equivalent to $\Delta A_{260}=1.0$ (the reaction system in the following table is 2.65 mL)

Intelli nuclease (30x dilution)	OD260			Enzyme activity (U/ul)
	0 minutes	30 minutes	ΔA_{260}	
-	7.6	11.09	3.49	$3.49 \times 30 \times 2.65 = 277.455$
Test 1	7.6	11.04	3.44	$3.44 \times 30 \times 2.65 = 273.48$
Test 2	7.6	11.04	3.44	$3.44 \times 30 \times 2.65 = 273.48$

Ordering information

Specification	Catalog No.
100KU/vial	DNRG0302100
500KU/vial	DNRG0302500

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