

DNase I-ST

Cat. No.: D1522668 | Pack size: See product label | Storage: Store at -20°C, Avoid repeated freezing and thawing

Overview

This product is recombinant DNase I. Compared with the wild-type enzyme, it has been engineered to exhibit significantly enhanced salt tolerance, capable of completely digesting DNA in solutions containing 300 mM monovalent salt. This product is free of RNase contamination.

Components List

D1522668	Components	Appearance	1KU	Storage
D1522668A	DNase I-ST (2 U/μl)	Liquid	500μl	-20°C. Avoid freeze/thaw cycles.
D1522668B	10× DNase I-ST Buffer	Liquid	1.25ml	-20°C. Avoid freeze/thaw cycles.

Activity Definition

One unit (U) is defined as the amount of enzyme required to completely degrade 1 μg of pUC19 plasmid DNA in 10 minutes at 37°C.

Applications

In vitro transcription: Removal of template DNA after RNA polymerase-mediated in vitro transcription.

Removal of genomic DNA contamination from RNA samples.

DNase I footprinting for analyzing DNA-protein interactions.

Nick translation labeling of DNA in combination with DNA Polymerase I.

Construction of random DNA fragment libraries.

Partial digestion of genomic DNA as a positive control in the TUNEL assay for apoptosis detection.

Quality Control

Protein Purity

Determined by SDS-PAGE, the protein purity is $\geq 90\%$.

RNase Residue Detection

2 U of DNase I-ST is incubated with 500 ng of total RNA at 37°C for 1 h. More than 90% of the RNA remains intact as determined by agarose gel electrophoresis.

Protocol

1. Removal of Genomic DNA Contamination from RNA Samples

Reaction Setup:

Component	Volume
RNA	1 μg
10× DNase I-ST Buffer	1 μl
DNase I-ST (2 U/ μl)	0.5 μl
Nuclease-Free Water	up to 10 μl

Reaction Conditions: 37°C for 15 min.

Inactivation: Column purification or phenol/chloroform extraction.

2. Removal of Template DNA after In Vitro Transcription

Procedure:

- ① Add 1 U of DNase I-ST per 1 μg of template DNA in the transcription reaction. The enzyme dosage can be optimized as needed.
- ② Reaction Conditions: 37°C for 15 min.
- ③ Inactivation: Column purification or phenol/chloroform extraction.

Notes

Perform all operations on RNA samples in RNase-free tubes.

When using this product to remove DNA from RNA samples, Murine RNase Inhibitor can be added to the reaction system at a final concentration of 1 U/ μl to protect RNA from degradation.

DNase I-ST is sensitive to physical denaturation. Do not vortex vigorously when mixing.

For your safety and health, please wear a lab coat, disposable gloves, and a face mask during the experiment.

Specifications

Attribute	Value
Product Name	DNase I-ST
Specifications & Purity	Recombinant, Suitable for molecular biology, EnzymoPure™, RNase free, ≥90% (SDS-PAGE), expressed in Pichia
Bioactivity	2 U/μl
Molecule Type	Enzyme

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Limitations & Disclaimer

- For Research Use Only (RUO). Not for use in human or animal diagnostics, therapeutics, or in vivo applications. Not for food, cosmetic, or household use.
- This product is not a CE-marked in vitro diagnostic device under IVDR (EU) 2017/746 and is not an FDA-cleared device under 21 CFR. Use is restricted to qualified laboratory personnel.
- Where any kit component is classified as hazardous under CLP (EC) 1272/2008 or OSHA HCS (29 CFR 1910.1200), the product Safety Data Sheet (SDS) takes precedence over this document for hazard classification, PPE, handling, storage, and disposal.



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