

Deoxyribonuclease I (DNase I) (RNase-free (500 u))



MO5401

Quantity: 1u/μl



Wet or Dry ice



-20 °C



Components

Contents	Quantity/ Volume	Store Temperature
Deoxyribonuclease I, (500 u)	500μl	-20°C
10X DNase I Buffer	1.25ml	-20°C
EDTA (0.2M)	1ml	-20°C

Description

DNase I is a recombinant form of DNase I which is RNase-free, originally isolated from bovine pancreas, is a recombinant enzyme expressed in *Pichia pastoris*. It is a DNA-specific endonuclease that hydrolyzes the phosphodiester linkages of double- and single-stranded DNA to a mixture of mono- and oligonucleotides.

DNase I manufactured using state-of-the-art processes yielding animal-free material. The enzyme is highly purified and rigorously tested for contaminating RNase and protease activity of RT-PCR. It is an important tool for all applications requiring DNA-free RNA templates and achieving reliable results with undegraded and stable RNA.

(DNR-026-00/01) (1)



Applications

DNase I used for isolation of DNA-free RNA in diagnostic and therapeutic applications:

- To ensure that RT-PCR templates are free of genomic DNA
- To remove DNA templates after in vitro of RNA

Unit Definition

One unit according to Kunitz produces an increase in absorbance of 0.001/minute under assay conditions in 1ml at 260nm.

Storage Buffer

20mM Tris-HCl, 50mM NaCl, 2mM CaCl₂, 2mM MgCl₂, 50% glycerol and enhancers.

Concentration of stock solutions will vary depending on application.

10X Reaction Buffer

400mM Tris-HCl, 100mM NaCl, 60mM MgCl₂, 10mM CaCl₂, pH 7.9

Note

DNase I is sensitive to physical denaturation. Gently mix preparations by inversion; do not vortex.

Inhibitors

EGTA, EDTA, SDS, salt concentrations > 100mM will reduce DNase activity.

Suggested Procedure

A.

- For complete digestion on DNA, prepare the reaction mix below

Components	Volume
10X Reaction Buffer	2μl
DNase I (1U/μl)	1–2U
DNA	1μg
Nuclease-free Water	Top up to 20μl

- Incubate at 25 – 37°C for 10 minutes.
- Use the sample for further analysis.

(2)

B.

1. For digestion of genomic DNA in RNA sample, prepare the reaction mix below:

Components	Volume
10X Reaction Buffer	5μl
DNase I Solution (1U/μL)	2 -10U
Total RNA	10 - 50μg
*Optional: RNase Inhibitor	10U
Nuclease-free Water	Top up to 50μl






2. Incubate at 25- 37°C for 10 minutes.

3. Stop the reaction by adding 2μl of 0.2M EDTA and heating to 75°C for 10 minutes. The concentration of EDTA has to be taken into account for all subsequent applications.

Quality Control Assay Data

No degradation of RNA was observed after incubation of 5 units of DNase I with 160ng RNA for 4 hours at 37°C.

Signs

Signs	Definitions	Signs	Definitions
	Temperature range on product use		Name and address of the manufacturer of the product
	For Research Use Only		
	Product shipping conditions		Product technical code



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