

DNase I (RNase-free)

Introduction

DNase I (RNase-free) is an endonuclease that digests single- or double- stranded DNA, generating dinucleotide, trinucleotide, and oligonucleotide products with 5'-phosphorylated and 3'-hydroxylated ends. The activity of DNase I (RNase-free) dependent on Ca^{2+} and can be activated by Mg^{2+} or Mn^{2+} . In the presence of Mg^{2+} , DNase I (RNase-free) can randomly cleaves arbitrary sites of double-stranded DNA; in the presence of Mn^{2+} , DNase I (RNase-free) can simultaneously recognize both strands of DNA and cleaves at nearly same sites.

DNase I (RNase-free) can act on single stranded DNA, double stranded DNA, chromatin, and RNA: DNA hybrid strands. DNase I (RNase-free) is suitable for RNA extraction, in vitro transcription, and removal of DNA for RT-PCR experiments.

Components and Storage

Components	1000 U	5000 U	10000 U
DNase I (RNase-free) (2 U/ μl)	500 μl	500 μl x 5	1 ml x 5
10X DNase I Buffer	1.5 ml	1.5 ml	1.5 ml x 2

Store the components at -20°C .

Protocol

1. Place the RNase-free PCR tube on ice and prepare the reaction system according to the following table:

Components	100 μl Reaction
RNA	$\sim 10 \mu\text{g}$
10X DNase I Buffer	10 μl
DNase I (RNase-free)	1 μl
Nuclease-free H_2O	To 100 μl

2. Mix thoroughly. Incubate for 10 min at 37°C.
3. Add 1 µl of 0.5 M EDTA (final concentration of EDTA is 5 mM).
4. Heat inactivation at 75°C for 30min.

Product Information

Unit Definition

One unit is defined as the amount of enzyme required to completely degrade 1 µg of pBR322 DNA in a 100 µl reaction system at 37°C in 10 min. Completed decomposition refers to the degradation of most DNA fragments into tetranucleotides or shorter nucleotides.

Storage Buffer

10 mM Tris-HCl (pH 7.6 at 25°C), 2 mM CaCl₂, 50% Glycerol

Reaction Buffer

10 mM Tris-HCl (pH 7.6 at 25°C), 2.5 mM MgCl₂, 0.5 mM CaCl₂

Note

EDTA should be added to a final concentration of 5 mM to protect RNA from being degraded during enzyme inactivation.

APEX BIO Technology

www.apexbt.com

7505 Fannin street, Suite 410, Houston, TX 77054.

Tel: +1-832-696-8203 | Fax: +1-832-641-3177 | Email: info@apexbt.com