

DNase I ,RNase free kit

Product Number: RNK4501

Shipping and Storage

Store at -20°C.

Components

Component	RNK4501 1000U
DNaseI(RNase Free),1 U/μl	1 ml
Reaction Buffer(with MgCl ₂),10×	1 ml
200 mM EDTA	1 ml

Description

DNase I is a deoxyribonucleic acid endonuclease that requires a divalent cation and can be used to degrade single or double stranded DNA. The principle is that DNase I hydrolyzes phosphate diester bonds to produce single or oligonucleotides with 5'-phosphate groups and 3'-OH. Both Mg²⁺ and Mn²⁺ can activate the activity of DNase I, and the concentration of Ca²⁺ directly affects the activity of the enzyme. When Mg²⁺ is present, random incisions can be generated on each single strand of double stranded DNA; In the presence of Mn²⁺, double stranded DNA can be broken and fragmented. Used for the preparation, reverse transcription, and in vitro transcription experiments of RNA without DNA contamination.

Preparation and important precautions before the experiment

1. Because DNase I is often used in DNA digestion experiments that require maintaining RNA integrity, it minimizes RNase contamination during enzyme preparation and can be safely used for RNA extraction. However, since this enzyme does not contain RNase inhibitors, it is recommended to pay attention to preventing external RNase contamination during use.
2. DNase I is greatly affected by shear forces. Before use, the centrifuge tube can be inverted and mixed evenly to avoid vortex oscillation.
3. Do not exceed 1U of DNase I for every 1μg of RNA processed.

Protocol

1. Taking the preparation of RNA samples for RT-PCR as an example, a 10μl reaction system was configured as shown in the table below:

Component	Volume	Final Conc.
RNA	X μl	1 μg
Reaction Buffer(with MgCl ₂),10×	1 μl	1×
DNaseI(RNase Free)	1 μl	1 U
RNase Free Water	Y μl	Up to 10 μl

2. Incubate at 37 °C for 30 minutes.
3. Add 1μl of 200 mM EDTA and incubate at 65 °C for 10 minutes to inactivate DNase I and terminate the reaction.
4. The processed RNA can be used for RT-PCR.