Product Description

DNase I GMP-grade(Deoxyribonuclease I) is an endonuclease that efficiently digests single-stranded and double-stranded DNA. DNase I requires Ca^{2+} for activity and is activated by Mg^{2+} or Mn^{2+}. In the presence of Mg^{2+}, DNase I cleaves DNA at random sites; in the presence of Mn^{2+}, the enzyme cleaves both strands of double-stranded DNA at approximately the same position, generating blunt-ended fragments or fragments with 1-2 nucleotide overhangs. DNase I exhibits optimal endonuclease activity at pH 7-8 and is suitable for removing single-stranded or double-stranded DNA from RNA preparations.

Components

Components	GMP-BP-E04-200	GMP-BP-E04-2K	GMP-BP-E04-20K
	200 U	2 KU	20 KU
DNase I GMP-grade (2 U/μL)	0.1 mL	1 mL	10 mL
10×DNase I Reaction Buffer	0.2 mL	2 mL	20 mL

Storage

Store at -20±5℃.

Product Information

Product Name	DNase I GMP-grade
Source	Recombinantly expressed in Pichia yeast strain
Activity	2 U/μL
Unit Definition	One unit (U) is defined as the amount of enzyme required to completely digest 1 μg of plasmid DNA in 10 min at 37℃.
Storage Buffer	10 mM Tris-HCl, 2 mM $CaCl_2$, 50% (v/v) glycerol, pH 7.6.
Inactivation	Add EDTA to a final concentration of 5 mM and incubate at 65℃ for 10 min to inactivate the enzyme.

Quality control

1. Solution appearance: clear and transparent, free of visible particulate matter.
2. Activity>2 U/μL.
3. Protein purity≥95%.
4. Free of exogenous RNase activity.
5. Residual host-cell DNA:≤100 pg/mg.
6. Residual host-cell protein: <50 ppm.
7. Heavy metals<10 ppm.
8. HBV, HCV, HIV, and mycoplasma: not detected.
9. Bacterial endotoxin: <5 EU/mL.
10. pH 7.8-8.0

Recommended Usage (DNA Removal from RNA Samples)

Using RNase-free microcentrifuge tubes or PCR tubes, prepare the reaction mixture as follows:

Components	Volume
10×DNase I Reaction Buffer	1 μL
DNase I GMP-grade (2 U/μL)	1 μL
RNA	Up to 1 μg
RNase-free ddH_2O	To 10 μL

Mix gently and incubate at 37℃ for approximately 30 min.

Application

1. Preparation of DNA-free RNA samples for downstream RNA analysis.
2. Digestion of linearized plasmid template following in vitro transcription.
3. Removal of residual genomic DNA prior to RT-PCR.
4. DNase I footprinting analysis of DNA-protein interactions.

Zhuhai Biori Biotechnology Co.,Ltd
Tel: +86-0756-8699969 Web: www.biori-en.com Email: marketing@biori-en.com
Addr:No. 88, Shui' an 1st Road, Xiangzhou District, Zhuhai, Guangdong 519060, China

Notes

1. Mix the reaction mixture by gentle pipetting; avoid vigorous vortexing.
2. Keep the enzyme on ice throughout the procedure.
3. Mix thoroughly before use. Aliquot for storage to avoid repeated freeze-thaw cycles.
4. The optimal amount of DNase I GMP grade should be optimized according to the specific experimental requirements.

Zhuhai Biori Biotechnology Co.,Ltd
Tel: +86-0756-8699969 Web: www.biori-en.com Email: marketing@biori-en.com
Addr:No. 88, Shui' an 1st Road, Xiangzhou District, Zhuhai, Guangdong 519060, China