

# DNase I (RNase-free)



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M0303S 011130915091

## M0303S



1,000 units 2,000 U/ml Lot: 0111309

RECOMBINANT Store at -20°C Exp: 9/15

**Description:** DNase I (RNase-free) is an endonuclease that nonspecifically cleaves DNA to release di-, tri- and oligonucleotide products with 5' -phosphorylated and 3' -hydroxylated ends (1,2). DNase I acts on single- and double-stranded DNA, chromatin and RNA:DNA hybrids.

**Source:** An *E. coli* strain that carries an MBP fusion clone of Bovine Pancreatic DNaseI.

Now Recombinant

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### Applications:

- Degradation of DNA template in transcription reactions
- Removal of contaminating genomic DNA from RNA samples
- DNase I footprinting
- Nick Translation

Supplied in: 2 mM CaCl<sub>2</sub>, 10 mM Tris-HCl (pH 7.6) and 50% glycerol.

**Reagents Supplied with Enzyme:**  
10X DNase I Reaction Buffer.

**Reaction Conditions:** 1X DNase I Reaction Buffer. Incubate at 37°C.

**1X DNase I Reaction Buffer:**  
10 mM Tris-HCl  
2.5 mM MgCl<sub>2</sub>  
0.5 mM CaCl<sub>2</sub>  
pH 7.6 @ 25°C

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**Unit Definition:** One unit is defined as the amount of enzyme which will completely degrade 1 µg of pBR322 DNA in a total reaction volume of 50 µl in 10 minutes at 37°C.

Complete degradation is defined as the reduction of the majority of DNA fragments to tetranucleotides or smaller.

### Protocol

#### Typical Reaction:

1. Resuspend 10 µg RNA in 1X DNase I Reaction Buffer to a final volume of 100 µl.
2. Add 2 units of DNase I, mix thoroughly and incubate at 37°C for 10 minutes.
3. Add 1 µl of 0.5 M EDTA (to a final concentration of 5 mM).
4. Heat inactivate at 75°C for 10 minutes.

**Quality Assurance:** Free of Detectable RNases.

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### Quality Control Assays

**RNase Activity:** Incubation of 100 units of DNase I with 10 µg of double-stranded RNA Ladder for 2 hours at 37°C resulted in the same electrophoretic profile as untreated RNA. Incubation of 2 units of DNase I with 10 µg of single-stranded RNA Ladder for 1 hour at 37°C resulted in the same electrophoretic profile as untreated RNA.

**Heat Inactivation:** 75°C for 10 minutes.

**Note:** EDTA should be added to a final concentration of 5 mM to protect RNA from being degraded during enzyme inactivation (3).

### References:

1. Kunitz, M. (1950) *J. Gen. Physiol.* 33, 349–362.
2. Vanecko, S. and Laskowski, M. (1961) *J. Biol. Chem.* 236, 3312–3316.
3. Huang, Z. (1996) *Biotechniques* 20, 1012–1020.

CERTIFICATE OF ANALYSIS

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