



# Technical Data Sheet

## GENERAL INFORMATION

**PRODUCT** DNase I from *Bos taurus*, expressed in yeast. RNase-free.

**Cat. No.** MT01U-S1DNAIHA-RF

**UNITS** 1,000 U

**DESCRIPTION** DNase I from *Bos taurus* is an endonuclease enzyme that non-specifically digests both single- and double-stranded DNA, chromatin and RNA:DNA hybrids. It hydrolyzes phosphodiester bonds, generating di-, tri- and oligo-deoxyribonucleotide products with 5'-phosphorylated and 3'-hydroxylated ends. Its enzymatic activity is strictly dependent on Ca<sup>2+</sup> and Mg<sup>2+</sup> or Mn<sup>2+</sup>. This product is free from RNases.

## PRODUCTS PROVIDED

Component	Amount
01U-S1DNAIHA-RF	DNase I from <i>Bos taurus</i> . RNase-free. 1 vial x 1 mL
BDNAIHA	10X DNase I from <i>Bos taurus</i> Reaction Buffer. 2 vials x 1.5 mL

## DELIVERY CONDITIONS

**01U-S1DNAIHA-RF** 1 mL of DNase I from *Bos taurus* at 1 U/μL in 20 mM Tris pH 7.5, 10 mM MgCl<sub>2</sub>, 0.1 mM CaCl<sub>2</sub>, 50% glycerol. RNase-free.

**BDNAIHA** 2 vials x 1.5 mL of 200 mM Tris pH 7.5, 100 mM MgCl<sub>2</sub>, 1 mM CaCl<sub>2</sub>. RNase-free.

**SHIPPING CONDITIONS** This product requires cold shipment conditions. Store the protein from -20 °C to -80 °C upon arrival.

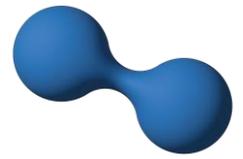
**STORAGE CONDITIONS** Store at a temperature range from -20 °C to -80 °C for medium and long term. Storage at 4 °C is possible for short term. Avoid multiple freeze/thaw cycles by storing multiple aliquots.

## ADDITIONAL INFORMATION

### ACTIVITY UNIT DEFINITION

One Unit of activity is defined as an increase in absorbance at 260 nm of 0.001 per minute at 25 °C on the assay conditions (50 μg/mL calf thymus DNA in buffer 20 mM Tris, 10 mM MgCl<sub>2</sub>, 0.1 mM CaCl<sub>2</sub>, pH 7.5).





## RECOMMENDED REACTION CONDITIONS

1- The protocol varies slightly depending on the nature of the starting material:

A) **For purified RNA:** mix the reaction mixture on ice:

Components	50 $\mu$ L reaction
RNA sample	~ 1 $\mu$ g
DNase I Reaction Buffer (10X)	5 $\mu$ L
DNase I	2 U
Nuclease-free H <sub>2</sub> O	To 50 $\mu$ L

B) **For cell lysates:** Mix the sample (i.e., cell lysate) with the DNase I from *Bos taurus* in the reaction buffer provided (*BDNAIHA*). It is recommended to add 2 U of DNase I and 5  $\mu$ L of 10X DNase I\* per 50  $\mu$ L of sample.

\*If using any other buffer, please ensure the addition of 1-10 mM Mg<sup>2+</sup> or Mn<sup>2+</sup> and 0.1-1 mM Ca<sup>2+</sup> to activate the enzyme.

2- Incubate at 37 °C for 30 minutes.

3- Add EDTA to a final concentration of 5 mM to chelate the cations and inactivate the enzyme.

4- Heat inactivate at 75 °C for 10 minutes.

## SPECIAL CONSIDERATIONS

This protein is sensitive to agitation; do not vortex. If agitation is necessary, gently use the pipette.

## QUALITY CONTROL

### DNase ACTIVITY ASSAY

DNase activity is measured for each batch by incubating DNase with calf thymus DNA. For that purpose, 1 U of DNase is incubated with 50  $\mu$ g/mL of thymus DNA at 25 °C and the release of DNA is monitored at 260 nm. The resulting units are then compared with the theoretical units, with an accepted 8% deviation from reference units.

### RNase ACTIVITY

A 50  $\mu$ L reaction containing 0.5  $\mu$ g of RNA and 5 U of DNase I or Reaction Buffer at 1X is incubated at 37 °C for 4 hours, and RNA degradation is determined by agarose gel electrophoresis. It is considered acceptable when no RNA degradation is detected.





## TECHNICAL SUPPORT

If you have any questions, feel free to contact us at  
[support@levprot.com](mailto:support@levprot.com)

Consult the Safety Data Sheet for information regarding hazards and safe handling practises.

**THIS PRODUCT IS INTENDED FOR RESEARCH USE ONLY.**

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