



# Technical Data Sheet

## GENERAL INFORMATION

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

**Cat. No.** MT01U-L1DNAIHA-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 lyophilized product is a freeze-dried version of its well-characterized liquid equivalent. This product is free from RNases.

## PRODUCTS PROVIDED

Component	Amount
01U-L1DNAIHA-RF DNase I from <i>Bos taurus</i> . Lyophilized. RNase-free.	1 vial

## DELIVERY CONDITIONS

**01U-L1DNAIHA-RF** 1,000 U of freeze-dried DNase I from *Bos taurus*. RNase-free.

**SHIPPING CONDITIONS** This lyophilized product can be handled and store at Room Temperature for at least 24 months.

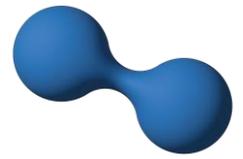
**SUGGESTED RECONSTITUTION BUFFERS** 20 mM Tris pH 7.5, 10 mM MgCl<sub>2</sub>, 0.1 mM CaCl<sub>2</sub>, 50% (v/v) glycerol.

Due to its sensitivity to agitation, this protein should be reconstituted using a pipette.

## RECONSTITUTION INSTRUCTIONS

1. Add 500 µL of the suggested Reconstitution Buffer to reconstitute the enzyme at 2 U/µL.
2. Gently pipette up and down to dissolve the solid powder. Avoid resuspending by vortexing or agitation.
3. Place on ice and aliquot into smaller volumes to avoid multiple freeze/thaw cycles.
4. Store from -20 °C to -80 °C.





### STORAGE CONDITIONS

This lyophilized product can be handled and stored at Room Temperature for at least 24 months. After reconstitution, the shelf life is 12 months if stored from -20 °C to -80 °C. Short-term storage at 4 °C is possible. To avoid multiple freeze/thaw cycles, store in multiple aliquots.

### SUGGESTED 10X REACTION BUFFER

200 mM Tris pH 7.5, 100 mM MgCl<sub>2</sub>, 1 mM CaCl<sub>2</sub>.

## 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

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

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

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

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 µL of 10X DNase I\* per 50 µL 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.

- Incubate at 37 °C for 30 minutes.
- Add EDTA to a final concentration of 5 mM to chelate the cations and inactivate the enzyme.
- 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

To perform quality control of the protein, it is first resuspended in the suggested reconstitution buffer, which also serves as a negative control in the quality control process.

### 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 µg/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 µL reaction containing 0.5 µg of RNA and 5 U of DNase I 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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