



Technical Data Sheet

GENERAL INFORMATION

PRODUCT Thermolabile dsDNase I, expressed in yeast. Lyophilized. RNase-free.

Cat. No. MT01U-L1DNATXA-RF

UNITS 1,000 U

DESCRIPTION Thermolabile double-strand DNase I (dsDNase I) is an endonuclease that cleaves phosphodiester bonds in DNA to release oligonucleotides with 5'-phosphorylated and 3'-hydroxylated ends. Thermolabile dsDNase I has a particularly strong preference for double-stranded DNA (dsDNA). In the presence of Mg²⁺ as the only divalent cation, the activity towards ssDNA is minimal compared to dsDNA. This is why the enzyme can be used to specifically degrade dsDNA, leaving ssDNA and RNA intact. This enzyme is easily inactivated by heat treatment at 55 °C and can be irreversibly inactivated by adding DTT to a final concentration of 1 mM while heating. This lyophilized product is a freeze-dried version of its well-characterized liquid equivalent.
This product is free from RNases.

PRODUCTS PROVIDED

<u>Component</u>		<u>Amount</u>
01U-L1DNATXA-RF	Thermolabile dsDNase I. Lyophilized. RNase-free.	1 vial

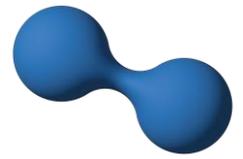
DELIVERY CONDITIONS

01U-L1DNATXA-RF 1,000 U of freeze-dried thermolabile dsDNase I. RNase-free.

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

SUGGESTED RECONSTITUTION BUFFERS 20 mM Tris pH 7.5, 10 mM MgCl₂, 50% (v/v) glycerol*.
*Glycerol is recommended for enhanced stability; however, it may be omitted for specific applications.
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.
- 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 MgCl₂.

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 MgCl₂, 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 µL reaction
RNA sample	~ 1 µg
Thermolabile dsDNase I Reaction Buffer (10X)	5 µL
Thermolabile dsDNase I	1 µL (2 U)
Nuclease-free H ₂ O	To 50 µL

B) **For cell lysates:** mix the sample with the Thermolabile dsDNase I in the reaction buffer provided (*BDNATXA*). It is recommended to add 2 U of Thermolabile dsDNase I and 5 µL of 10X Thermolabile dsDNase I* per 50 µL of sample.

*If using any other buffer, please ensure the addition of Mg²⁺ and avoid the use of monovalent cations since they inactivate the enzyme.

- 2- Incubate at 37 °C for 30 minutes.
 - 3- Heat inactivate at 55 °C for 15 minutes.
- Optional: add DTT at a final concentration of 1 mM for an irreversible inactivation.





SPECIAL CONSIDERATIONS

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

QUALITY CONTROL

DNase ACTIVITY ASSAY

Thermolabile dsDNase I activity is measured for each batch by incubating dsDNase I with calf thymus DNA. For that purpose, 1 U of dsDNase I is incubated with 50 µg/mL of calf thymus DNA at 25 °C and the release of dsDNA I 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 thermolabile dsDNase 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

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

THIS PRODUCT IS INTENDED FOR RESEARCH USE ONLY.

DATE 12/05/2025

REVISION 01

