

# Technical Data Sheet

## GENERAL INFORMATION

**PRODUCT** Thermolabile dsDNase I, expressed in yeast. Lyophilized.

**Cat. No.** MT01U-L1DNATXA

**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 Mg<sup>2+</sup> 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.

## PRODUCTS PROVIDED

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

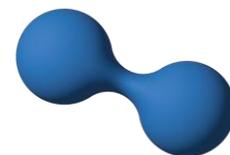
## DELIVERY CONDITIONS

**01U-L1DNATXA** 1,000 U of freeze-dried thermolabile dsDNase I.

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

**SUGGESTED RECONSTITUTION BUFFERS** 20 mM Tris pH 7.5, 10 mM MgCl<sub>2</sub>, 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  $\mu\text{L}$  of the suggested Reconstitution Buffer to reconstitute the enzyme at 2 U/ $\mu\text{L}$ .
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  $-20\text{ }^{\circ}\text{C}$  to  $-80\text{ }^{\circ}\text{C}$ .

## 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  $-20\text{ }^{\circ}\text{C}$  to  $-80\text{ }^{\circ}\text{C}$ . Short-term storage at  $4\text{ }^{\circ}\text{C}$  is possible. To avoid multiple freeze/thaw cycles, store in multiple aliquots.

## SUGGESTED 10X REACTION BUFFER

200 mM Tris pH 7.5, 100 mM  $\text{MgCl}_2$ .

## 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  $25\text{ }^{\circ}\text{C}$  on the assay conditions (50  $\mu\text{g}/\text{mL}$  calf thymus DNA in buffer 20 mM Tris, 10 mM  $\text{MgCl}_2$ , pH 7.5).

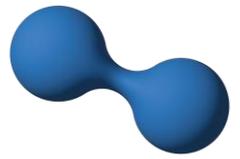
### RECOMMENDED REACTION CONDITIONS

- 1- Mix the sample (i.e., cell lysate) with the Thermolabile dsDNase I in the reaction buffer provided (*BDNATXA*). It is recommended to add 2 U of Thermolabile dsDNase I and 5  $\mu\text{L}$  of 10X Thermolabile dsDNase I\* per 50  $\mu\text{L}$  of sample.  
\*If using any other buffer, please ensure the addition of  $\text{Mg}^{2+}$  and avoid the use of monovalent cations since they inactivate the enzyme.
- 2- Incubate at  $37\text{ }^{\circ}\text{C}$  for 30 minutes.
- 3- Heat inactivate at  $55\text{ }^{\circ}\text{C}$  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

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

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.

## 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.**

DATE 12/05/2025

REVISION 03

