# Technical Data Sheet

## GENERAL INFORMATION

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| PRODUCT NAME<br>REFERENCE | Thermolabile dsDNase I expressed in yeast, lyophilized<br>MT01U-L1DNATXA |
| PRODUCTS PROVIDED | 01U-L1DNATXA Thermolabile dsDNase I, lyophilized |
| UNITS<br>EXPRESSION SYSTEM<br>PURITY | 1,000 U<br>*Komagataella phaffii*<br>≥ 90% |
| DESCRIPTION | Thermolabile double strand DNase 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. In the presence of $Mg^{2+}$ as only divalent cation and using oligos as substrate, the activity towards ssDNA is minimum 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 it can be irreversible inactivated adding DTT at a final concentration of 1 mM while heating.<br>Lyophilized dsDNase I is a freez-dried version of its well-characterized liquid equivalent. |

## DELIVERY CONDITION

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

## RELEVANT INFORMATION

**SUGGESTED RECONSTITUTION BUFFERS**

A) For long-term: 20 mM Tris pH 7.5, 10 mM $MgCl_2$, 50 % glycerol.
B) For short-term: 20 mM Tris pH 7.5, 10 mM $MgCl_2$

**SUGGESTED 10X REACTION BUFFER**

200 mM Tris pH 7.5, 100 mM $MgCl_2$

**PROTOCOL**

1- Mix the reaction mixture on ice:

| COMPONENTS | 50 µL REACTION |
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| RNA* | ~ 1 µg |
| Sample | Up to 44 µL |
| dsDNase I Reaction Buffer (10X) | 5 µL |
| dsDNase I | 1 µL (2 U) |
| Nuclease-free $H_2O$ | To 50 µL |

*Reconstitute the enzyme and prepare the reaction buffer in a RNase-free buffer.

2- Incubate at 37 °C for 30 minutes.
3- Heat inactivate at 55 °C for 15 minutes.

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Optional: add DTT at a final concentration of 1 mM for an irreversible inactivation.

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| 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 $MgCl_2$, pH 7.5). |
| STORAGE | The lyophilized product can be handled and store at Room Temperature at least 12 months. Once reconstituted, it is recommended to store the solution from -20 °C to -80 °C. Storage at 4 °C is possible for short term. Avoid multiple freeze/thaw cycles by storing multiple aliquots at -80 °C. |
| HEALTH AND SAFETY INFORMATION | Consult the Safety Data Sheet for information regarding hazards and safe handling practises. |

## QUALITY CONTROL

### DNase ACTIVITY ASSAY

Once reconstituted, thermolabile dsDNase I activity is measured for each lot by incubating dsDNase I with calf thymus DNA. For that purpose, 40 U of dsDNase I is incubated with 0.05 mg/mL of 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 hello@levprot.com

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

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