Technical Data Sheet

GENERAL INFORMATION

PRODUCT NAME	Thermolabile dsDNase I expressed in yeast, RNase-free	
REFERENCE	MT01U-S1DNATXA-RF	
PRODUCTS PROVIDED	01U-S1DNATXA-RF	Thermolabile dsDNase I RNase-free
	2x BDNATXA	10x Thermolabile dsDNase I Reaction Buffer RNase-free
UNITS	1,000 U	
EXPRESSION SYSTEM	*Komagataella phaffii*	
PURITY	≥ 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.

DELIVERY CONDITIONS

01U-S1DNATXA-RF	500 µL of thermolabile dsDNase I at 2 U/µL in 20 mM Tris pH 7.5, 10 mM $MgCl_2$, 50% glycerol, RNase-free.
BDNATXA	2x 1.5 mL of 200 mM Tris pH 7.5, 100 mM $MgCl_2$, RNase-free

RELEVANT INFORMATION

PROTOCOL

1- Mix the reaction mixture on ice:

COMPONENTS	50 µL REACTION
RNA	~ 1 µg
dsDNase I Reaction Buffer (10X)	5 µL
dsDNase I	1 µL (2 U)
Nuclease-free H_2O	To 50 µL

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.

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).

Levprot Bioscience, S.L.U.
Polígono Industrial La Charluca,
Calle C, Parcela 10-11
50300 Calatayud, Zaragoza (Spain)
Tel. (+34) 976198404
hello@levprot.com
www.levprot.com

STORAGE	Medium- and long-term storage from -20 °C to -80 °C. Storage at4 °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 practices.

QUALITY CONTROL

DNase ACTIVITY ASSAY

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.

RNase-FREE TEST

The absence of RNases is checked using the RNase+DNase Detection Kit. This kit allows to detect RNase A activity as low as <0.1 pg/µL. It can be observed that the 01U-S1DNATXA-RF has a lower slope than standard low, which is considered as a negative result.

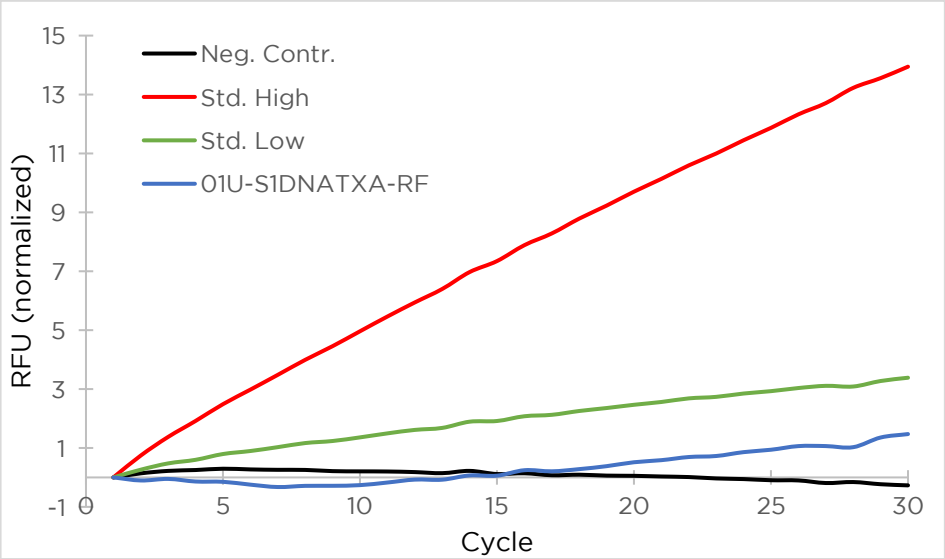

Image: Kinetic evaluation of RNase activity monitored on a real-time PCR system. Concentration of RNase A standards are 0.1 pg/µL for standard low (Std. Low, marked in green) and 0.4 pg/µL for standard high (Std. High, red). PCR-grade water is used for negative control (Neg. Control, black). Samples of 01U-S1DNATXA -RF are used to test RNase-activity of the product (blue).

TECHNICAL SUPPORT

If you have any questions, feel free to contact us at hello@levprot.com

Polígono Industrial La Charluca, Calle C, Parcela 10-11
50300 Calatayud, Zaragoza (Spain)
Tel. (+34) 976198404
hello@levprot.com
www.levprot.com

THIS PRODUCT IS INTENDED FOR RESEARCH USE ONLY.

DATE 05/09/2023
VERSION 01

Levprot Bioscience, S.L.U.
Polígono Industrial La Charluca,
Calle C, Parcela 10-11
50300 Calatayud, Zaragoza (Spain)
Tel. (+34) 976198404
hello@levprot.com
www.levprot.com