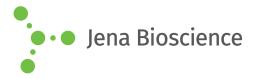
DATA SHEET





DNase I (RNase free)

DNA modifying enzyme Bovine pancreas

Cat. No.	Amount
EN-173S	2000 units (Kunitz units)
EN-173L	5 x 2000 units (Kunitz units)

Unit Definition: One Kunitz unit is defined as the amount of enzyme required to produce an increase in absorbance of 260 nm of 0.001/min/ml at 25°C of highly polymerized DNA.^[1]

For in vitro use only!

Shipping: shipped on blue ice

Storage Conditions: store at -20 °C

Additional Storage Conditions: avoid freeze/thaw cycles

Shelf Life: 12 months

Form: liquid (Supplied in 10 mM Tris-HCl pH 7.5, 10 mM CaCl₂, 10 mM MgCl₂ and 50 % [v/v] glycerol)

Concentration: 2 units/µl

Applications:

DNase I is commonly added to cell lysis reagents to remove the viscosity caused by the DNA content in bacterial cell lysates or to remove DNA templates from RNA produced by in vitro transcription. DNase I removes unwanted DNA from cell lysates to improve protein extraction efficiency.

Description:

DNase I (RNase free), Deoxyribonuclease I is a single, glycosylated polypeptide that degrades single- and double-stranded DNA. The enzyme works by cleaving DNA into 5' phosphodinucleotide and small oligonucleotide fragments.

DNase I is used for application requiring the digestion of DNA in which it is crucial to avoid damage to RNA.

Reaction Conditions

1x DNase I Reaction Buffer Incubation at 37°C

10x DNase I Reaction Buffer: 100 mM Tris-HCl pH 7.6 (25°C) 25 mM MgCl₂ 5 mM CaCl₂

Inactivation:

DNase I is inactivated by heating to 65 °C for 10 minutes. High levels of monovalent ions such as Na $^+$ and K $^+$ (i.e. 100 mM) will decrease DNase I activity.

[1] The unit definition of 'Kunitz units' is increasingly replaced by 'Degradation Assay units'. One Degradation Assay unit is equal to 3 Kunitz units and defined as the amount of enzyme required to completely degrade 1 μ g of plasmid DNA in 10 minutes at 37 °C in 10 mM Tris-HCl pH 7.5, 50 mM MgCl₂ and 13 mM CaCl₂.

Activity:

> 2500 units/mg protein

Selected References:

Sambrook *et al.* (1989) Molecular Cloning: A Laboratory Manual, 2nd ed. New York: *Cold Spring Harbor Laboratory Press* **10**.6

Tabor et al. (1997) DNA-Dependent DNA Polymerases. In: *Current Protocols in Molecular Biology*. Ausubel et al., eds. Wiley & Sons Inc. 3.5.4-6.

Pan *et al.* (1999) Ca2+- dependent activity of human DNase I and its hyperactive variants. *Protein Sci.* **8**:1780.



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