DATA SHEET

Jena Bioscience

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 $CaCl_2$, 10 mM $MgCl_2$ 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 $MgCl_2$
5 mM $CaCl_2$

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 µg of plasmid DNA in 10 minutes at 37 °C in 10 mM Tris-HCl pH 7.5, 50 mM $MgCl_2$ and 13 mM $CaCl_2$.

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.