DATA SHEET

Jena Bioscience

DNase I (RNase free)

DNA modifying enzyme
Bovine pancreas

Cat. No.	Amount
EN-173S	2.000 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 gel packs

Storage Conditions: store at -20 °C

Additional Storage Conditions: avoid freeze/thaw cycles

Shelf Life: 12 months

Form: liquid

Concentration: 2 units/µl (Kunitz) [1]

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.

Content:
DNase I (RNase free)
2 units/µl DNase I in 10 mM Tris-HCl pH 7.5, 10 mM $CaCl_2$, 10 mM $MgCl_2$ and 50 % [v/v] glycerol

DNase I Reaction Buffer
10 x conc. reaction buffer containing 100 mM Tris-HCl pH 7.6 (25°C), 25 mM $MgCl_2$, 5 mM $CaCl_2$

Reaction Conditions
1x DNase I Reaction Buffer
Incubation at 37°C
High levels of monovalent ions such as Na^+ and K^+ (i.e. 100 mM) may decrease DNase I activity.

Inactivation:
DNase I is completely inactivated by incubation at 65 °C for 10 minutes.

Activity:
> 2500 units/mg protein

[1] DNase I activity is also measured in 'Degradation Assay units' 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 $CaCl_2$.
1 'Degradation Assay unit' is equivalent to 0.3 'Kunitz units'.

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.