



**Cyrusbioscience**

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## DNase I, from Bovine Pancreas

**Product No.:** 101-9003-98-9

### Description

Deoxyribonuclease I (DNase I) is an endonuclease that hydrolyzes double-stranded or single-stranded DNA preferentially at sites adjacent to pyrimidine nucleotides. The product of hydrolysis is a complex mixture of 5'-phosphate mononucleotides and oligonucleotides. In the presence of magnesium ion, DNase I attacks each strand of DNA independently and the cleavage sites are random. In the presence of manganese (II), DNase I cleaves both strands of DNA at approximately the same site. Most protocols use magnesium ion with DNase I but for specific purposes, manganese is cited.

### Specification

Activity: >300 U/mg

Residue on ignition: <1%

Highly purified by chromatography to remove trace contaminating RNase and proreases.

### Preparation Instructions:

For long term storage, reconstitute with water or any buffer, pH 4.0–9.0, except phosphate buffer and avoid calcium chelators. Addition of 50% glycerol will maintain a liquid state at -20°C without affecting stability. Only freeze and thaw solutions once.

### Storage/Stability:

This lyophilized DNase I product retains activity for 2-3 years when stored at 2-8°C. Solutions of DNase I (10 mg/ml) in 0.15 M NaCl may lose <10% of its activity stored for a week in aliquots at -20°C. The same solutions stored in aliquots at 2–8°C can lose ~20% activity. DNase I remains active in solution between pH 5 and 7 up to 60°C for at least five hours. A 1 mg/ml solution in acetate buffer (pH 5.0) or Tris buffer (pH 7.2) loses activity at the rate of 6%/hour. At 68°C DNase I loses activity in <10 minutes.

### Usage:

DNase I is used to remove DNA from protein and nucleic acid samples, and to nick DNA as a first step to incorporate labeled bases into DNA. For complete digestion of DNA, 1 mg of DNA can be digested with 1–2 units of DNase at 25–37°C for 10 minutes in 40 mM Tris-HCl, 10 mM NaCl, 6 mM MgCl<sub>2</sub>, and 1 mM CaCl<sub>2</sub>, pH 7.9.

### Incubation Buffer (10×)

400 mM Tris-HCl, 100 mM NaCl, 60 mM MgCl<sub>2</sub>, 10 mM CaCl<sub>2</sub>, pH 7.9

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