EcoZyme Deoxyribonuclease I (DNase I)

10 mg, 25 mg, 100 mg

Cat No: DI010, DI025, DI100

Shipping : Ship with blue ice.
Storage : Store at 2–8°C for short-term use and at −20°C for long-term storage. After reconstitution, store at −20°C and avoid repeated freeze–thaw cycles.

General Information

EcoZyme Deoxyribonuclease I (DNase I) is a non-specific endonuclease derived from bovine pancreas that cleaves phosphodiester bonds in DNA, preferentially adjacent to pyrimidine nucleotides. This enzymatic activity generates polynucleotides with 3′-hydroxyl and 5′-phosphate termini.

DNase I exhibits optimal activity at pH 7.5 and requires divalent metal ions for activation. The enzyme is activated by Mg^{2+} and Ca^{2+} ions, while it is inhibited by chelating agents such as EDTA and by detergents including sodium dodecyl sulfate (SDS). The presence of Ca^{2+} (e.g., 5 mM) helps stabilize the enzyme against proteolytic degradation.

This product is chromatographically purified to remove trace protease contamination, ensuring high purity and consistent performance. DNase I is supplied as a lyophilized powder with an activity of ≥2000 Kunitz units per mg, making it suitable for a wide range of molecular biology applications, including removal of DNA contamination from RNA preparations and DNA fragmentation.

For ease of use, it is recommended to reconstitute ***EcoZyme*** DNase I in ***EcoZyme*** DNase I Storage Buffer at a final concentration of 10 mg/mL and prepare aliquots. DNase I is sensitive to physical denaturation; therefore, mix gently by inversion and avoid vortexing. Store aliquots at −20°C.

For removal of DNA contamination, prepare a reaction mixture containing up to 50 µg total RNA, 5 µL of 10x ***EcoZyme*** DNase I Reaction Buffer, 0.5 µL (10 units) ***EcoZyme*** DNase I (RNase-free), and 20 units of ribonuclease inhibitor (not supplied), adjusting the final volume to 50 µL with DEPC-treated water. Incubate the reaction at 37°C for 20–30 minutes.

Following DNase I treatment, it is recommended to inactivate the enzyme using an appropriate method, such as heat inactivation or the addition of EDTA or purify RNA using phenol/chloroform extraction method depending on downstream applications. Proper inactivation is essential to prevent residual DNase activity that may affect subsequent steps.

This product is intended for research use only and is not suitable for diagnostic or therapeutic applications.

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